

**Abstracts of Papers  
Presented at the**

**18th European Conference on Knowledge  
Management  
ECKM 2017**

**Hosted By  
International University of Catalonia  
Barcelona, Spain**

**7-8 September 2017**

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E-Book ISBN: 978-1-911218-49-4

E-Book ISSN: 048-8971

Book version ISBN: 978-1-911218-48-7

Book Version ISSN: 2048-8963

Published by Academic Conferences and Publishing International Limited

Reading

UK

44-118-972-4148

[www.academic-publishing.org](http://www.academic-publishing.org)

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# Preface

These proceedings represent the work of researchers presenting at the 18th European Conference on Knowledge Management (ECKM 2017). We are delighted to be hosting ECKM at the International University of Catalonia, Barcelona, Spain on the 7-8 September 2017.

The conference will be opened with a keynote by Ewa Ziemia, University of Economics in Katowice, Poland. Ewa will address the topic of Prosumption: *The Utilization of Consumer Knowledge in Enterprises, a European specialist in Design Thinking and Innovation*. The second day will be opened by Eric Tsui, Professor and Associate Director (Business Development) Knowledge Management and Innovation Research Centre (KMIRC), The Hong Kong Polytechnic University. Eric will be addressing the subject of *Re-wiring our brain in the Cloud: Excelling with Knowledge Work in the age of digitalisation*. We are also pleased to have David Gurteen, Director and Founder of the Gurteen Knowledge Community, conduct an interactive session on *Empowering Conversation in the Workplace*.

ECKM is a well established platform for academics concerned with current research and for those from the wider community involved in Knowledge Management to present their findings and ideas to peers from the KM and associated fields. ECKM is also a valuable opportunity for face to face interaction with colleagues from similar areas of interests. Over the past 18 years ECKM has a reputation of helping attendees advance their understanding of how people, organisations, regions and even 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.

303 abstracts were initially received for this conference. However, the academic rigor of ECKM means that, after the double blind peer review process there are 129 Academic papers, 16 PhD research papers, 2 Masters research papers, 2 Non-Academic papers and 7 Work in Progress papers published in these Conference Proceedings.

These papers reflect the continuing interest and diversity in the field of Knowledge Management, and they represent truly global research from many different countries, including Argentina, Australia, Austria, Bosnia and Herzegovina, Brazil, Canada, China, Colombia, Cyprus, Czech Republic, Finland, France, Germany, Hong Kong, Hungary, Iceland, India, Iran, Ireland, Italy, Japan, Jordan, Lithuania, Malaysia, Morocco, Norway, Peru, Poland, Portugal, Romania, Russia, Saudi Arabia, Slovakia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, The Netherlands, Tunisia, Turkey, UAE, UK, Ukraine and USA.

We hope that you have an enjoyable conference.

Dr Frederic Marimon  
Dr Marta Mas-Machuca  
Dr Jasmina Berbegal-Mirabent  
Dr Ramon Bastida  
International University of Catalonia  
September 2017

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## Biographies

## Conference and Programme Chairs



**Ramon Bastida Vialcanet** holds a PhD in Business Administration and a Master in Accounting and Financial Management. He is a full-time professor at Universitat Internacional de Catalunya (UIC) and part-time professor at Universitat Pompeu Fabra. His research interests are in the areas of financial and management accounting, social economy, cooperatives and nonprofit organizations. He has been invited, as a visiting scholar, at the Centre International de

Recherches et d'Information sur l'Economie Publique, Sociale et Coopérative (CIRIEC-Université de Liège). He has been the director of the Catalan Accounting and Management Congress organized by the Catalan Accounting and Management Association (ACCID) during six editions. He is member of the scientific committee of CIRIEC Spain and member of ASEPUC.





**Jasmina Berbegal-Mirabent** holds a PhD and MSc. in Industrial Engineer and Engineering Management from Universitat Politècnica de Catalunya (UPC). She is an associate professor at Universitat Internacional de Catalunya (UIC) and the director of the Master in Business Administration and Production Systems. She is also a part-time professor at UPC. She has been a Fulbright Visiting Scholar at Haas School of Business (University of California Berkeley) and a Visiting Research Associate at the Institute of Education (University College London). Her research interests are in the areas of knowledge and technology transfer, university-business cooperation, entrepreneurship and business innovation. She is the associate editor of the Journal of Innovation and Knowledge and collaborates as a member of the editorial board in the Journal of Business Research, Management Decision and Intangible Capital. She has participated in international competitive projects such as Cross-Organizational Assessment and Development of Intellectual Capital (7th Framework Programme) and European Drivers for a Regional Innovation Platform (Lifelong learning project).



**Frederic Marimon**, PhD in Business Administration is full professor at Universitat Internacional de Catalunya (UIC) in business administration. He has been vice-rector of research at UIC and vice-dean of the Economics Faculty at UIC. He is Industrial Engineering by Universitat Politècnica de Catalunya (UPC), and Master in Business and Administration by IESE Business School in Barcelona. His research interests are on Operations Management, particularly in quality, e-quality measurement and service management. He has published several articles in international academic journals, most of them analyzing Quality Management Standards (QMS) and also some papers that analyze the diffusion phenomenon of management standards (i.e. ISO 9000, ISO 14000, etc.). He is co-founder of the International Conference on Quality Engineering and Management (ICQEM). He has participated in international and national projects, mainly addressing research on quality in services provided online. He has been involved in some consultancy projects, most of them related with the implementation of quality systems.



**Marta Mas-Machuca** has a PhD in Business Administration from the Universitat Politècnica de Catalunya (UPC) in Spain, and graduated with a bachelor's degree in Business Administration from the University of Navarra (UN) in Spain. She is vice dean in the Faculty of Economic and Social Sciences at Universitat Internacional de Catalunya (UIC) and the coordinator of the Master in Entrepreneurship, Private Equity and Venture Capital. She has been accredited as a tenure-track lecturer by the Quality Catalan Agency of the University System (AQU). Her research interests are in the areas of knowledge management, mission statement and strategy, quality in higher education institutions, and entrepreneurship. She has participated in international competitive projects such as Cross-Organizational Assessment and Development of Intellectual Capital (7th Framework Programme) and The Mike Project - New curriculum to train experts and others in the analysis, reporting and management of intangibles (European Commission, Asia-Link Programme).



**José M. Viedma** is a Doctor of Industrial Engineering, a graduate in Economics and Professor of Strategic Management of Intangibles at UPC Polytechnic University of Catalonia and UPC School of Professional & Executive Development in Barcelona, Spain. He has held top executive positions in computer services and management consultancy firms. He is president and founding partner of the “Intellectual Capital Management System” and founding partner of M&A Fusiones y Adquisiciones. He is also founding member of “The new club of Paris”, CISC (Comunidad Iberoamericana de Sistemas de Conocimiento) and IAKM (International Association for Knowledge Management). Jose teaches and researches on the subject of knowledge management and intellectual capital management at the micro level and knowledge economy and knowledge based development at the macro level. He is an advisory board member for a number of journals. His current field of interest is focused on the strategic management of knowledge, intellectual capital and intangible assets practical research.

## Keynote Speakers



**David Gurteen** is a well-known writer, thinker, public speaker and facilitator on Conversational Leadership – a conversational approach to the way that we live and work. He is best known as the creator of the Gurteen Knowledge Café – a conversational process to bring a group of people together to learn from each other and make better sense of a rapidly changing, complex world. Over the last 15 years, he has run many Knowledge Cafés and Knowledge Café workshops around the world. He is also the founder of the Gurteen Knowledge Community – a global network of over 23,000 people in 160 countries.



**Prof Eric Tsui** is Professor and Associate Director (Business Development) of the Knowledge Management and Innovation Research Centre (KMIRC) at the Hong Kong Polytechnic University. He joined the joined Computer Sciences Corporation (CSC) in 1989 after years of academic research in automated knowledge acquisition, natural language processing, case-based reasoning and knowledge engineering tools. He has designed and delivered numerous public and custom-designed knowledge management and technologies workshops. His research strengths include cloud-based business innovation and knowledge services. He has also consulted for many government departments and private organizations in Australia, Hong Kong, Singapore, Malaysia, Thailand and Brunei. Professor Tsui is an honorary advisor of KM to the Police College, Hong Kong Police Force. He is a recipient of the KM Leadership Award and KM and Intellectual Capital Excellence Award in 2014 and 2015 respectively.



**Ewa Ziemba** is an associate professor at the University of Economics in Katowice, Poland. Her research interests lay in management, with a major focus information systems and technologies for business and public administration transformation. Her current research is in customer knowledge management and prosumption. She has published over 180 peer-reviewed papers and 15 books. She played an instrumental role in prestigious international research projects. In

recognition of her outstanding research and teaching, Ewa Ziemba has been the recipient of numerous International and Polish awards.

## Mini-Track Chairs



**Dr. Pierre-Emmanuel Arduin** is associate professor at Paris-Dauphine University. He studied Psychology, Computer Science and Management, and now focuses on Knowledge Management, linking knowledge with individual interpretation processes. Director of the Master's Degree Extended Enterprises' Information Systems: Audit and Advisory, he works as KM and IT consultant within several large companies. Recently, his

research has shown that information and knowledge questions are switching to security questions within organizations. Individuals become considered as entry points able to be attacked through manipulation techniques, as well as computers and digital artifacts are through hacking techniques.



**Constantin Bratianu** is professor of *Strategic Management* and *Knowledge Management*, UNESCO Department for Business Administration, and Director of the Research Center for Intellectual Capital, Bucharest University of Economic Studies, Romania. He is founding editor of the international journals *Management & Marketing*, and *Management Dynamics in the Knowledge Economy*. He is Associate

Editor of the *Electronic Journal of Knowledge Management*. His academic interests are: knowledge dynamics, knowledge management, intellectual capital, and strategic management.



**Prof. Dr. Robert Andrei Buchmann** is an Associate Professor position at Babeş-Bolyai University, Romania, where he teaches and researches topics on KM Systems based on Enterprise Modelling methods and semantic technologies. He received his doctoral degree in 2005 from the same university, and developed his current expertise during a 3-years post-doctoral research stay at University of Vienna where he contributed

to several international research projects.



**Scott Erickson**, PhD is Professor of Marketing in the School of Business at Ithaca College, Ithaca, NY where he has also served as Department Chair and Interim Associate Dean. He holds a PhD from Lehigh University, Masters degrees from Thunderbird and SMU, and a BA from Haverford

College. He has published widely on big data, intellectual capital, and business analytics. He is spending the 2016/2017 academic year studying knowledge networks related to sustainability as a Fulbright—National Science Foundation Arctic Scholar at Akureyri University, Iceland.



**Prof Andrea Garlatti**, PhD, is a full Professor of Public Management at Udine University. He is also Director of Udine University Interdepartmental Center for Research on Welfare and Coordinator of the Accounting and Management Control section within the Department of Economics and Statistics. Andrea has wide research and teaching experience in the fields of public management and welfare.



**Nina Helander** is an associate professor (tenure track) of knowledge management at Tampere University of Technology, Department of Information Management and Logistics.



**Dr. Aino Kianto** holds a full professorship in Knowledge Management in the School of Business and Management, Lappeenranta University of Technology, Finland. She also is the academic director for the Master Programme in Knowledge Management and Leadership. Her teaching and research focus on knowledge management, intellectual capital, creativity, innovation and organizational renewal. She has authored and co-authored more than 100 academic articles, papers, books and book chapters related with these topics. She has been called one of the most prominent academic figures in the field of intellectual capital and has received several awards for research excellence.



**Dr Maurizio Massaro**, Ph.D., is aggregate professor at Udine University since 2008, having worked as teacher at Udine University since 2001. He was visiting scholar at the FGCU, Florida, USA, in 2010 and Leicester, UK, 2013. His academic interests are primarily in the field of business performance measurement, intellectual capital, knowledge management and entrepreneurship.



**Florinda Matos** - has a PhD in Social Sciences, Organizational Behaviour Studies from the Technical University of Lisbon. She has a Master's Degree in Business Sciences from ISCTE - IUL Business School. She teaches several disciplines for graduate and post-graduate courses and she is a partner and a business consultant for PMEConsult. She is ICAA - Intellectual Capital Accreditation Association's president. She leads the ICLab – Research Center in Intellectual Capital and she is a member of the DINÂMIA'CET – IUL. Her main research interests are: Knowledge Management, Intellectual Capital, Measuring of

Intangibles, Organizational Behaviour, Marketing, Competitive Strategy, Innovation and Entrepreneurship.



**Dr Sandra Moffett** is a Senior Lecturer of Computer Science with the University of Ulster’s School of Computing and Intelligent Systems, Magee Campus. She is a core member of the Ulster Business School Research Institute. Her expertise on Knowledge Management contributes to her being one of the UK leading authors in this field. She has received a number of research awards and citations for her work.

External funding has enabled Dr Moffett to undertake extensive quantitative/qualitative research to benchmark KM implementation within UK companies.



**Dr. Helen N. Rothberg** is Professor of Strategy in the School of Management at Marist College, Poughkeepsie, NY. She also teaches at the Fuld-Gilad-Herring Academy of Competitive Intelligence and principal of HNR Associates. Her newest book, *The Perfect Mix: Everything I Know About Leadership I Learned as a Bartender* was released by Simon & Schuster in summer 2017.



**Vilma Vuori** is a postdoctoral researcher in the NOVI Knowledge and Learning research group at Tampere University of Technology, Finland. Her research focuses on knowledge sharing, value creation in business networks and competitive intelligence.

## Workshop Facilitators



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**Pawel Paterek** holds a bachelor's and master's degree in telecommunications engineering. He has also completed postgraduate studies in: IT project management, human resources development and finally MBA program. He is currently a PhD student with a specialization in management sciences. The areas of his scientific interests are: Agile project management and knowledge management.

**Gerhard Peter** works at Festo since 2001 as Knowledge Management Specialist. He is in charge of the Connect! program that aims at introducing social networking at Festo.

**Dong Phung** has a background in information system designs and education management. His corporate background of 15+ years is mainly in information system and education management where he managed and deployed information systems in higher education. Currently, he works on knowledge management to provide a method to improve knowledge sharing.

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**Dr Gillian Ragsdell** is a Reader in Knowledge Management in the School of Business and Economics, Loughborough University and Coordinator of the Knowledge Management Research Group. Her knowledge management activities have taken her into a wide variety of organisations; she has recently successfully completed a Royal Academy of Engineering Industrial Secondment in the energy sector.

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**Barbora Rýdlová** is an assistant professor at the University of Economics Prague. She is an author of numerous research articles on business valuations, including topics such as illiquidity and control premiums and personal goodwill, and co-author of business valuation books. She is one of the leading valuation expert in the Czech Republic.

**Mohammad Sabri** is currently undertaking PhD research in the Software Engineering Research Group (SERG) of the University of the West of England (UWE), Bristol, UK. He obtained his Master in Business Administration in 2012 from Al-Balqa' University and BSc in Computer Science in 2004 from Princess Sumaya University in Jordan.

**Josune Sáenz** is Associate Professor and Vice Dean for Research at Deusto Business School (DBS, University of Deusto, Spain). She specializes in Management Accounting, Strategic Management Control, and Knowledge Management and Innovation. She has been main researcher of the Innovation Chair sponsored by BBVA at DBS.

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**Klaus Bruno Schebesch** is Professor of Marketing Research and Computational Management Science at the Faculty of Economics, Informatics and Engineering, Vasile Goldiș Western University, Arad, Romania. He holds a PhD (1990) and a post-doctoral Habilitation (2002), both from the University of Bremen, Germany. Research interests: Machine learning, knowledge and big data, Intellectual capital, innovation, recommender systems, labour markets.

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**Albert J. Simard** led the development of knowledge management programs for several

Canadian government science-based agencies. Experience includes: briefing notes database, directory of expertise, access to knowledge policy, regulatory modelling guide, knowledge strategy, knowledge architecture, and social structures for knowledge management. He has published and presented extensively on these topics.

**Sharon Simatwo** is a first year PhD student at Loughborough University, United Kingdom. She is currently investigating the use of Systems Thinking in Knowledge Management theory and practice.

**Leonard Simons** obtained a Diploma in Industrial Engineering at the RWTH Aachen University, Germany, and is currently a scientific researcher at the Cybernetics Lab of RWTH Aachen University. His research interests include digitalization, urbanization, climate and demographic change using data analytics methods. Before starting his PHD he worked for 2 years as a product manager in the online-shop business.

**Philip W. Sisson** is a retired Lockheed Martin Senior Program Manager, KM cross-division coordinator, and KM best practices track leader. He is an Engineering Management (KM focus) doctoral candidate in George Washington University's School of Engineering and Applied Science. Phil has degrees in mathematics, ORSA and economics, and computer information systems.

**Tale Skjølsvik** is an Associate Professor at Oslo and Akershus University College. She received her Ph.D. in Strategic Management from BI Norwegian Business School. Dr. Skjølsvik's research concentrates on professional service firms. In particular, she studies strategic management, knowledge development and management and the digitalization of these types of firms.

**Divyata Sohal** is a PhD Researcher in Knowledge Management in the School of Business and Economics, Loughborough University. Originally from India, she moved to the UK to pursue higher education and a career in sports. She is also a Chartered Sport and Exercise Psychologist with the British Psychological Society.

**Shahla Sohrabi** is an associate professor of the Islamic Azad University in Iran and senior lecturer at the department of management at the University of Allameh Tabataba'i. She is head of Department management in University. She has published several papers in national and international conferences and valid scientific publications. Her main topics of interest are KM and HRM.

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**Erik Steinhöfel** is senior researcher in the Corporate Management Division, Business Excellence Department, Fraunhofer Institute for Production Systems and Design Technology, Berlin, Germany. He is an expert in strategic and operational knowledge management, strategic planning and innovation management. He refined his expertise in these fields in several public and industry projects in Europe, Asia and South America

**Linda Stoddart** is a senior executive coach and knowledge strategy expert. She is a member of the faculty at the Haute Ecole de Gestion, Geneva, Switzerland. Previously she was the Academic Director of the Master of Science program in Information and Knowledge Strategy at Columbia University, New York, and also Director of Knowledge Management at the United Nations Secretariat.

**Albert Sune** is senior lecturer in strategy and operations management at Universitat Politècnica de Catalunya, Spain. His academic publications and areas of special interest include the study of organizational knowledge in strategy implementation. Albert's recent work focuses on how learning and forgetting processes are involved in strategic change, including change in organizational resources, routines and identity.

**Anu Suominen** M.Sc. (Tech.) is a doctoral student at Tampere University of Technology in Finland in Industrial and Information Management laboratory, where she has a work-in-progress doctoral thesis on network legitimacy building. Anu has several years practical working experience in exports and networking and training projects. Her research interests focus on inter-organizational networks and innovation.

**Dr Subashini Suresh** is a Reader of Construction Project Management at the School of Architecture and Built Environment, University of Wolverhampton, UK. She holds a PhD in knowledge management. She has published over 150 academic publications, which include 27 journal papers, 95 conference papers, four articles, eight book chapters, 15 reports and three books.

**Pavel Svačina** is an assistant professor at the University of Economics, Prague. He is an author of numerous research articles on intangible assets valuations. He is an author of an elementary Czech book on intangible assets valuations. He is one of the leading intangible assets valuation expert in the Czech Republic.

**Petr Svěrák** is a PhD. Student at Tomas Bata University in Zlín. His Ph.D. study is focused on regional price differences in the hotel industry, macroeconomic influences and revenue management. He gathered his work experience in the hotel industry in Germany and in the USA. Currently he leads the largest convention hotel in the region.

**Maciej Szafranski** is an employee of the Poznań University of Technology. Since 2010, he has headed Polish and international projects focusing on competence management and knowledge management whose total budget totals approximately EUR 20 million. He was the co-creator of the Technical Knowledge Accelerator® initiative. His interests include issues connected with knowledge management and quality management.

**Eduardo Teixeira** is a postdoctoral fellow at the graduate program in business administration at the Pontificia Universidade Católica do Rio Grande do Sul (PUCRS), Brazil. His research interests are centered on knowledge management and knowledge flows, local and regional development, interorganizational relationships and research methods.

**Clare Thornley** is Senior Research Fellow at the Innovation Value Institute, Maynooth, Ireland. Her research interests include new ways of measuring research impact; knowledge management for improved performance; information ethics and the philosophy of information. Her career started in the UK voluntary sector where she was Information

Officer for Volunteering England and since then she has worked in academic research and teaching.

**Chayarak Thanee Tikakul** is a PhD candidate at Department of Design Manufacture and Engineering Management at University of Strathclyde, Glasgow, UK. Her research is focussed on Knowledge Management. More specifically, her current work examines and draws the comparison in Knowledge Management in Small and Medium Enterprises in manufacturing sector between Thailand and UK.

**Dr. Eduardo Tomé** was awarded his PhD in Economics (2001) with a Thesis on the European Social Fund. Since then he has worked in several Portuguese private universities. He has published 40 papers in peer-reviewed Journals and presented 70 papers in international conferences. He is currently working in the Universidade Europeia, Lisbon, Portugal.

**Haley W.C. Tsang**, graduated with a double degree – BEng (Hons) in Industrial and Systems Engineering and BBA (Hons) with a major in Marketing at The Hong Kong Polytechnic University. She previously worked in a global financial services company providing risk management and portfolio optimization solutions for major investment houses.

**Jiro Usugami** is a professor at Aoyama Gakuin University, Tokyo. His research topics include Knowledge Management in disaster risk reduction and Cross Cultural Management.

**Joel Vanhalakka** is a knowledge and BCI management master's student currently working on his master's thesis on value creation in virtual and augmented reality at Tampere University, Finland.

**Polyxeni Vassilakopoulou** is an Associate Professor of Information Systems at the University of Agder, Norway. She holds a PhD in Information Systems and Work System Interventions from the National Technical University of Athens, Greece. Her main research interests relate to interorganizational information systems and organizational change, and design approaches for complex sociotechnical work settings.

**Elena Veretennik** is a Lecturer in the Department of Management, St Petersburg School of Economics and Management, National research university – Higher School of Economics, St Petersburg, Russia, and a PhD student (educational management, intellectual capital reporting in Russian secondary education system) at St Petersburg State University, St Petersburg, Russia.

**Maxim Vlasov** is a serious science worker of Institute of Economics, the Ural Branch of the Russian Academy of Sciences, where he investigates the problems of institutional and knowledge economics modeling.

**Stefan Voigt** earned his Diplom degree in Business Information Systems. Since 2003, he has been a research manager at the Fraunhofer Institute for Factory Operation and Automation IFF in Magdeburg. His main fields of work are the development of IT systems and services to support knowledge management.

**Ass. Prof. Tone Vold** lectures at The Inland University of Applied Science, Norway, in courses within knowledge management, organizational learning, informatics and systems

engineering. She is currently working on a PhD within the area of Enterprise development and worklife research, doing research on involving students in their own learning process to prepare for worklife in organizations.

**Anthony Wensley** is an Associate Professor of Accounting and Management Information Systems at the University of Toronto Mississauga, Canada, with a cross-appointment to the Accounting area at Rotman. He teaches courses in information systems, decision analysis, law and ecommerce and management accounting. His research interests include game theory and information systems; intellectual property and knowledge structures; encoding of organizational knowledge; and enterprise systems.

**Oliver Wiesener** studied at the KIT and the Technical University of Munich. He obtained his doctorate at the Trier University on the subject knowledge and innovation. He held a variety of management positions and since 2015 a full professorship at the Stuttgart Media University. His research focus lies in the areas of innovation and music.

**Sylva Žáková Talpová** works as an assistant professor, her research has particularly dealt with MNEs, subsidiaries and project management. Her teaching experience includes international management, project management, international trade and management simulation games. She worked as a consultant in a company focusing on consulting and expert services in the field of public expense programmes and project implementation.

**Saliha Ziam** is an Associate Professor at TELUQ University of Quebec. His research interests focus knowledge transfer in health sector, health assessment tools for decision support and knowledge absorptive capacity strategies. His recent works on knowledge transfer have been published in Allergy, Asthma & Clinical Immunology Journal and Evidence & Policy.





# Keynote Outlines



# Keynote Outlines

## **Empowering Conversation in the Workplace**

David Gurteen, Director and Founder of the Gurteen Knowledge Community

Conversation is our most powerful KM tool, but we take it for granted and fail to capitalize on it. The potential for every work-related conversation in our organizations to be meaningful, to have high impact and drive performance, transfer learning, and build relationships is immense. But no one ever teaches us how to convene and engage in such conversations and so we bumble along and squander one of our most powerful human abilities. In this presentation, David will talk about the power of conversation and how to "empower conversation" in the workplace.

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## **Re-wiring our brain in the Cloud: Excelling with Knowledge Work in the age of digitalisation**

Prof. Eric Tsui, Knowledge Management and Innovation Research Centre (KMIRC), The Hong Kong Polytechnic University

This presentation will discuss the power of cloud computing and how a knowledge cloud, which offers a re-framing of a cloud to consist of not only IT infrastructure but also connections, people power and artificial intelligence, can support product and services innovations via community building, crowd sourcing, ideation, micro-tasking and human-machine cooperative problem solving. With its high connectivity, massive repositories and connections, the Cloud is naturally the canvas for the orchestration and delivery of knowledge services. However, in order to exploit the potential of the Cloud, some major unlearning are needed. This talk will conclude with a corporate strategy for managing knowledge in the age of digitalisation

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## **Prosumption: Utilization of Consumer Knowledge in Enterprises**

Ewa Ziemba, University of Economics in Katowice, Poland

Customer knowledge becomes an essential intangible asset for every line of business, leads to better response and respect to customers, and contributes to the improvement of business processes and value. The business ability to manage customers' knowledge should be considered as a potential source of competitive advantage. Therefore, the concept of prosumption coined by Toffler has been evolved and it currently means that consumers share knowledge with enterprises and enterprises use this knowledge to produce things of value. This presentation will propose a holistic approach to prosumption in order so that we, as a KM community, can further improve the current state-of-the-art in prosumption.



# **Research Paper Abstracts**



# Can Knowledge be Retained in Informal Organisational Networks?

**Moheeb Abualqumboz, Iain Reid, Marina Papalexi and David Bamford**

University of Huddersfield, UK

**Abstract:** Taking a constructivist view of knowledge where it is viewed as a 'process of knowing', the literature on knowledge sharing assumes that it can be retained through embedding within institutional routines, structures, and systems. However, this concept is challenged in the context of informal organisational networks where membership is voluntary, temporary and organisationally unsanctioned. Such challenges have predominately focused around: 1) behavioural aspects including organisational and individual defence mechanisms to protect knowledge and opportunistic behaviours such as free-riding; or 2) social aspects including lack of mutual trust and asymmetric power relations. We therefore consider the mechanisms and theoretical underpinning of socially constructed knowledge across a number of informal networks. This paper investigates the challenges to knowledge retention in knowledge-sharing networks, reporting on data collected from a case study of four informal organisational networks in the UK (two photography networks; women entrepreneurship network; and a construction network). There is a significant amount of literature addressing such challenges on an organisational level, however, less research exists on the network level. In particular, the challenge of knowledge retention within networks. This research adopts Social Exchange Theory in order to develop the theoretical underpinning and data interpretation. The paper also presents an explanatory model to inform theorists and practitioners on how to improve knowledge retention in networks. A qualitative approach was used through an ethnographic lens consisting of 18 months participant observation study that produced 28 semi-structured interviews. The study also utilised data from network archive network spanning two years. This paper argues that knowledge shared in the networks largely remained inside them and that less knowledge was shared with networked organisations making the network knowledge "ontologically" separate from knowledge created in organisations. The data also revealed that "boundary spanners" found it difficult to share knowledge between their formally contracted organisation and the informal network, due to issues related to trust and unbalanced reciprocal exchanges. Our investigation of knowledge sharing in those networks demonstrates the difficulty in retaining it on a network level due to blurring organisational boundaries and the temporary nature of such networks.

**Keywords:** knowledge sharing, networks, knowledge retention, inter-organisational learning, boundary spanners

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## **Open Innovation and Service Management: Iranian Banks Case Study**

**Peyman Akhavan<sup>1</sup>, Mona Batouei<sup>1</sup>, Hossein Goudarzipour<sup>2</sup> and Lila Rajabion<sup>3</sup>**

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<sup>3</sup>Department of Information Technology, University of South Florida Sarasota-manatee, USA

**Abstract:** The emergence of the open innovation paradigm in the innovation management environment shows that organizations require development and cooperation of foreign partners alongside their internal research and development, to guarantee their success of offering new products and services. The service economy is highly significant in the modern world, and innovation is a vital component in the success of a service organization. Therefore, this research examines the importance of service management in the banking industry and the effect of open innovation and its impact on the delivery of service packages. The statistical population used in this research includes staff of public and private banks in Tehran, Iran. Over 500 questionnaires were gathered from within the banking industry. To evaluate the validity, first and second order confirmative factor analysis was used and to determine reliability,  $\alpha$ -cronbakh was used. Research hypothesizes been assessed using structural equation models and route analysis. Findings show service packages have a positive effect on open innovation and service management. Also, that open innovation has a positive impact on service management. These effects are more significant in private banks in comparison to public banks. Results also confirm Open innovation has the intermediating role in the relationship between banking Services Packages and service management. This result would be a useful tool to change executive management's view of the service sector.

**Keywords:** open innovation, service management, banking service package, banking

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# Indirect Effects of Organisational Unlearning in Firm Performance Through Human Capital

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<sup>1</sup>Technical University of Cartagena, Spain

<sup>2</sup>University of Coventry, UK

**Abstract:** The purpose of this paper is to examine the concept of organisational unlearning and its relationship with firm performance through human capital effectiveness. To that end, a comprehensive review of the literature on the concept of unlearning has been carried out and a theoretical model to measure these relationships has been developed. A sample of 112 Spanish companies listed on the Stock Exchange was then used to validate the proposed model. The quantitative methodology used is based on the methods of structural equations (PLS). It involved the construction and analysis of a structural model using subjective and objective criteria in our measurement variables. Our results show that organisational unlearning indirectly affects firm performance by developing and exploiting new skills and abilities that increase the value and effectiveness of human capital.

**Keywords:** organisational unlearning, context of organisational unlearning, human capital effectiveness, firm performance

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## The Influence of Wasta on Knowledge Sharing in Kuwait

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**Abstract:** This paper examines the role of wasta within Arab Societies. Wasta is a set of personal networks based on family or connections in which power and influence is used to achieve objectives. As wasta evolved, it became deeply rooted in Arab societies. For instance, wasta became a tool which people used to get recruited in any position, regardless of their qualification. It is considered as a family obligation, a technique for doing businesses and a practice in which knowledge is shared, transferred and created. In any case, the outcomes identified with wasta in businesses are considerable as it not only impacts organizational performance but also employees' performance as well. To date, there has been little research on the influence of wasta within organizations in terms of knowledge sharing and innovation. Consequently, the question that is

addressed is: *Does Wasta influence knowledge sharing in Kuwait, which in turn impacts organizational performance?* Accordingly, mixed methods research design was utilized to examine the specified subject. The justification behind this approach is that both qualitative and quantitative strategies supplement each other by giving a more in-depth and complete picture of the topic. The paper will provide a conceptual framework of what wasta is, how it is being executed and ways in which it is impacting knowledge sharing in organizations. The paper is intended to deliver insights for organizations about how the practice of wasta is impacting their performance, either positively or negatively. The initial findings revealed that wasta negatively impacts knowledge sharing in the sense that those who are within the wasta circle can access, circulate and provide new information that was once unavailable to them. However, such practices also have a negative impact in that employees who are not within such circle will be reluctant to share knowledge due to knowing that wasta users have an advantage over them and hence, they do not want to lose their competitive advantage.

**Keywords:** connections, knowledge sharing, Kuwait, networking, organizational performance, wasta

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## **Usage of Knowledge Management Techniques Within The Saudi Arabian Public Sector Organisations**

**Khaled Algahtani, Suresh Renukappa, Subashini Suresh, Saeed Al Nabt and Hanouf Alosaimi**

Faculty of Science and Engineering, University of Wolverhampton, UK

**Abstract:** Management challenges do not come any bigger for the Kingdom of Saudi Arabia (KSA) public and private sector organisations than the current one. The Kingdom is currently facing unprecedented challenges, both fiscally and in its demographics, with heightened competition in the energy market and a big increase in the number of Saudis reaching working age. After a decade of sustained oil-based growth, KSA is at a transition towards knowledge based economy. Today, achieving that goal has become essential. To address change challenges, knowledge is increasingly accessed and shared across different functional departments and professionals. This knowledge interdependence creates new management challenges resulting from the risks and difficulties of knowledge transactions across boundaries. Providing access to key tacit and explicit knowledge to decision makers during potential changes seems to be critical for effective decision-making. Recent technological developments have made a significant and positive impact on the ability and desire to manage knowledge. Therefore, the aim of this paper is to explore the usage of key

knowledge management (KM) techniques and technologies for dealing with change initiatives in the KSA public sector organisations. A web based, online questionnaire survey method was employed to collect data. Descriptive analysis was used to analyse the data obtained from the 107 completed and usable questionnaire for inference and conclusion. The survey revealed that conventional, simple and cost effective KM techniques and technologies such as telephone, internet, face-to-face meetings, WhatsApp, and formal education and training programmes are extensively used. Whereas, modern KM techniques and technologies such as Viber, FaceTime, LinkedIn, Informal networks, and knowledge maps are less used. The paper concludes that to gain competitive advantage, it is necessary for KSA public sector decision makers to recognise and use a blend of ICT and non-ICT based KM techniques and technologies. It is advisable to use conventional, simple, low cost, and easy to use with minimum training needs KM techniques and technologies. It should note that KM techniques and technologies roles are not mutually exclusive and KSA public sector organisations may adopt any combination of them to tackle their particular issues or support particular motives.

**Keywords:** knowledge management, Kingdom of Saudi Arabia, tools, techniques and technologies

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## **Innovative Solutions for Information and Knowledge Systems Security: A Total Quality Management Perspective**

**Pierre-Emmanuel Arduin<sup>1</sup>, Doudja Kabeche<sup>2</sup> and Mustapha Sali<sup>1</sup>**

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**Abstract:** In this paper, we argue that parallels can be drawn between information and knowledge systems security (IKSS) concerns of today's organizations and quality management concerns of early twentieth century organizations. We propose a literature review of some Total Quality Management (TQM) and Lean Management (LM) solutions that may be relevant for information and knowledge systems security. This hybridization of IKSS and TQM/LM domains leads to propose innovative solutions for IKSS, notably by considering assignable causes and chance causes of security failures within organizations. Even if this work is still at an early stage, our approach suggests a shift from "security assurance" to "security control" within information and knowledge systems (IKS).

**Keywords:** information and knowledge systems security (IKSS), insider threats, total quality management (TQM), lean management (LM)

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## **The Effect of Human Resources Competencies on a Firms Performance: A Marketing Perspective**

**Ashraf Awad**

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**Abstract:** Although much of the marketing theories acknowledged, there is a need for marketing skills and literature detailing such skills and competencies for marketing managers. Questionnaires covering three competency dimensions (leadership management marketing and personal attributes) as predictors for firm performance were sent to the managers of 162 companies in two sectors of the economy (namely services, and industrial sectors) representing a 52 percent of the industrial firms in Abu Dhabi Emirate, (according to Abu Dhabi Chamber of Commerce, 2016 Annual Report). Only 125 firms returned their forms and these forms were used in the data analysis representing a 77% percent response rate which was acceptable statistically. The aim of this research was to demonstrate how Multi-National Companies (MNCs) should invest in HR-building, and to explore, competencies issues across industries, and to establish a link between employee competencies and firm performance and to outline possible mechanisms through which the relationship may operate. Findings revealed that understanding the effect of human resources competencies on the firm performance in the MNCs from marketing perspectives depends upon many variables such as The organizational culture, The communication system, Managing changes, Knowledge sharing, Employees' inspiration by leaders, Global competition, Empowering employees, Leadership competency, Taking initiatives by employees. Performance perceptions which based on managers' individual perception and a managerial style have a negative relationship with the perceived benefits of these creativity negligence factors. Only five motivators out of nine were found significant for motivating competencies between the two clusters in the economic sectors in the sample. Analysis shows that management initiatives highlight the fact that not all of them are necessarily successful.

**Keywords:** HRM, competencies, performance, marketing perspective, MNCs

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# Wisdom Management: ECKM 2007-2017 review

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**Abstract:** Based on articles and findings suggested a decade ago, this paper proceeds to a critical review of Knowledge Management (KM) and its evolution to what we may agree to call Wisdom Management (WM). What has happened in this area during this period (2007-2017)? Is Knowledge Management still alive? Is there truly an evolution towards Wisdom Management? What signs can be detected in the market? Is technology sensitive to this context? What are the opinions of the various authors in this discipline? Can we venture a new forecast? This paper aims to consider all these issues. The paper begins by offering some context (Introduction) and then it details the tenets originally defended and the forecasts presented at the European Conference on Knowledge Management (ECKM) in 2007. Once this groundwork is established, the paper proceeds to consider an overview of this period (Reflections on a Decade). Although the time frame in question is only about 10 years, it has been a very significant period for Knowledge Management. This paper analyses differing views—from the decline of the practice and its diminishing popularity to voices that claim that the concept has reached its social “maturity”. It also analyses trends witnessed in Knowledge Management and Technology and review the popularity of Wisdom Management and the current trends of all these issues. Finally, in the Conclusions section, the paper reflects on the accuracy of forecasts made a decade ago and ventures to offer new forecasts confirming or diverging from previous ones. The paper faces mainly two predictions made in 2005 and presented at ECKM 2007: a) a new cycle of technical expertise in organisations will emerge (2010’s) and b) we must prepare for another management cycle (2020’s?) based on wisdom. This is just an opinion paper; it is not intended as a formal investigation.

**Keywords:** knowledge management (KM), wisdom management (WM), information and communication technology (ICT), artificial intelligence (AI)

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# How do Knowledge Creation and Knowledge Sharing Happen in Software Development Methodologies?

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**Abstract:** For organizations, knowledge is a primary strategic resource. Software development projects are knowledge intensive, so it is critical to determine the knowledge sharing processes employed in them. In software development projects, knowledge sharing differs according to the management methodology adopted. There are two development methodologies, the traditional Waterfall methodology and the agile methodologies. Waterfall development has well-defined phases and review protocols between each phase. Agile methodologies are a 'light' development paradigm, based on iterative development. Through a literature review, this theoretical research aims to analyze knowledge creation and knowledge sharing in traditional and agile software development. There are various metaphors that can be used to show how Scrum works. One such metaphor is the Knowledge Creation View of Scrum, which proposes that Scrum covers all phases of the SECI model. Despite Scrum's emphasis on knowledge management, traditional projects also require to manage knowledge. The results show that using the Waterfall methodology this is achieved by following the I-Space model, which describes the knowledge flow in six steps. These steps have parallels with the Waterfall phases: Scanning with analysis; Problem-solving with design; Abstraction with coding; Diffusion with operations; Absorption with maintenance; Impact with use and input for new projects. March's Ex-Ex model has a parallel with "code and fix" (lack of a formal process), where preliminary analysis and coding refers to the exploration process and software corrections reflect the exploitation process. Among the three methodological options, the results also show there is a gradual increase in hierarchy, documentation, processes and explicit knowledge. These characteristics can help managers choose which methodology to adopt in their projects. The research findings identify how knowledge is generated and shared among teams in the traditional Waterfall methodology, the agile Scrum methodology and the "code and fix" process and the differences that emerge from the adopted knowledge cycle model.

**Keywords:** knowledge sharing, knowledge creation, software development methodologies, Waterfall, agile

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# Cultivating Online Communities of Practice as Rural Knowledge Management Strategy in India

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**Abstract:** According to Wenger et al., communities of practice are like “gardens” that “benefit from cultivation”. They proposed that “even though communities [of practice] are voluntary and organic, good community design can invite, even evoke, aliveness.” This study examines the potential of cultivating communities of practice among Women Self Help Groups (WSHG) as a rural knowledge management strategy in order to create and strengthen their knowledge network. This, in turn, will help them improve their livelihood through the application of newly acquired knowledge. Self-help groups (SHG) movement in India involves voluntary association of economically and socially deprived people (mostly women) in small groups (10 to 15) to address their lives and livelihood issues. In spite of this huge investment and volume of people involved in upliftment and livelihood enhancement of the rural community, the success is still limited. Two of the major problems are (i) lack of information and knowledge flow among SHGs, and (ii) rural-urban information and knowledge divide. Our objective is to cultivate online communities of practice among SHGs using internet and web 2.0 technologies in order to improve their access to knowledge and informational resources. In our study, a cluster of women self-help groups located in a village (Kandi) of West Bengal, India has been studied closely for six months. We distributed 50 smart mobile phones with Internet facility to 50 women belonging to Self-help groups and trained them with the use of smartphones and WhatsApp in the Bengali language. These women are primarily engaged in producing garments, soft toys, etc. and they need inputs on designs. So, we have included two senior trainers from the city in their WhatsApp group. SHG women and senior trainers shared product images, design ideas, pre-recorded videos on garment designs, etc.. Thus, a virtual knowledge space is created, where SHG women can interact and collaborate with each other and with outside experts in their domain of interest, establish community norms and values, share resources and build trustful relationships, which are the core values of communities of practice.

**Keywords:** communities of practice, women self help groups, Web 2.0, Virtual knowledge space

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# The Relationship Between Knowledge Management and Innovation in Large Companies: A Structured Literature Review

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**Abstract:** This paper aims to review and critique the literature about knowledge management (KM) and innovation in large companies from a KM and intellectual capital perspectives, offering an overview of the state of the literature and outlining a future research agenda. Articles published in business journals are analyzed using a Structured Literature Review Methodology (SLR). The study analyses 33 papers published in 21 journals specialized in the field of KM, innovation and technology management, management development, R&D management and strategic management among others. Although empirical and theoretical studies have shown a positive relationship between KM and innovation in large companies, this is a research area of growing importance as a result of the “innovation imperative” and the importance of the theme for KM as a discipline. Findings show that no authors have an explicit specialization on the topic, while all but two authors contribute just once to the body of knowledge. Few practitioners are doing research on the field, and there is a limited international cooperation among writers. Also, several areas in the world seem underinvestigated while other are over-analyzed, and none but one firm elected among world's top innovative companies are not investigated. Literature has identified a positive relationship between organizational factors, KM practices, processes and strategies, intellectual capital and absorptive capacity and innovation capacity and innovation performance. However, the focus on the kind of innovation seems not clear in a significant number of papers; and there is a lack of interdisciplinary approach in the research.

**Keywords:** large companies, knowledge management, innovation, structured literature review

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# Effectiveness of Knowledge Management Implementation: An Analysis of Brazilian Regulatory Agencies

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**Abstract:** Regulatory agencies are legal entities created by the government to monitor and to control the quality of services provided by private companies. In Brazil there are several national agencies linked to health, food, environment, telecommunication, energy and other sectors. Effective Knowledge Management implementation has been recognized in the literature as an important management tool to promote innovation and to improve organizational performance (Junges et al., 2015; Pawlowsky, P. and Schmid, S., 2012; Darroch, 2005; Wang and Han, 2011; Taherparvar, Esmaeilpour and Dostar, 2014; and Fang and Wu, 2006; Paez-Logreira, Zamora-Musa and Velez-Zapata, 2016). This paper analyzes how KM has been introduced in Brazilian regulatory agencies, seeking answers to the following questions: 1) Who introduced KM initiatives? 2) What is the level of implementation of KM? 3) What is the level of formalization? 4) What are the most common KM goals? 5) How were the goals established? 6) What resources are employed? 7) What departments are in charge of KM? 8) What are the most relevant results? 9) What are the main facilitators and obstacles? 10) How agencies measure outcomes and what are the main metrics? Nine regulatory agencies answered the survey. First, top-level managers of each organization met with the researchers, and later the institutions conducted their self-assessment of KM initiatives by answering a detailed questionnaire. The findings show that the agencies can be divided in three categories in terms of KM implementation: beginners, intermediate and advanced; most of them fall in the first category. This paper reports the first in-depth study about KM implementation in Brazilian regulatory agencies. Moreover, it is a relevant contribution to the literature on KM in the public sector because it analyzes KM in public organizations in the largest country of South America, which is considered an understudied region. The paper has also practical implications in the sense that it provides helpful information for managers who face the challenge of establishing KM in regulatory agencies.

**Keywords:** knowledge management, regulatory agencies, public sector, organizational performance

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# The Symbiosis of Knowledge Management and Innovation

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**Abstract:** Businesses today need to bear in mind that their knowledge can be lost very easily if not utilised in good time; therefore, continuous innovation is vital for businesses. The study attempts to set up a theoretical model that will make the estimation of the future innovation potential of businesses possible. Numerous initiatives and models have been elaborated based on benchmarking that make the identification of a business's state possible at a given time; however, a solution enabling forecasting has not evolved. Our goal is to elaborate a model that would make it possible to indicate numerically whether it is worth going on with a given research or a development project or not. The goal of the paper is to make up for the above mentioned gap. In addition to the commonly used indicators, the authors complement the quantification methods with parameters that also take into account the significance of intellectual capital. By using artificial intelligence and the model (as a result of a self-learning process), businesses will be able to estimate their future innovation results. The study presents the importance of intellectual capital in the estimation of innovation results, emphasizing the connection between knowledge management and innovation processes. Furthermore, it provides an overview of the best-known knowledge management and innovation models. It also compares and finds connections between the logic of individual steps taken in these models. Setting off from the absorption capacity of businesses, the study summarizes the elements of intellectual capital, and points out those ones that have not been included in the universally accepted European Standard (IMP3rove™) model measuring innovation capacity, but are of significant importance. As a new result of the study it will also be pointed out how these elements are measurable and how the new model can be applied supported by artificial intelligence.

**Keywords:** artificial intelligence, corporate absorption capacity, innovation, innovation capability, knowledge management, knowledge sharing

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# Useful Methodologies for Knowledge Transfer in Education and in Business

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**Abstract:** Knowledge, the richest capital identified in the 21st century and its effective transfer, has been the research target of many scholars. This case study explores the subject of knowledge transfer methodologies applied in a higher educational institution which has very close industrial relations and co-operations. The tandem of knowledge and learning constitutes a powerful asset, for the companies as great resource for competitive advantage e.g. for innovation and for the universities the preparation of young generations. The main objectives of the research were to identify how and which methods the students can learn at most, its relevance to education and to professional life. The researched educational institution advertises courses with lecturers who transfer their practical knowledge to the students therefore, it is considered that “storytelling” plays a crucial role. It is explored how the lecturers prepare the students for their practical work life – besides the classical theoretical lecture – so that the transferred knowledge can be used practically in the future professional work and no “dull knowledge” will occur. The empirical part used mixed methods, 6 interviews with lecturers from the higher educational institution and a questionnaire was developed with 41 respondents. The surveyed students had already first professional experience during their internship. They were asked about conveying-oriented and action-oriented learning methods as well as, knowledge transfer in companies. The qualitative research focused exclusively on lecturers, who worked in companies before teaching at the educational institution to get the most effective results when interviewing them about knowledge transfer from education to praxis. For the data analysis, Excel tables were used for the survey and content analysis for the interviews. The results of the study mainly show that the training of a new employee should encompass both, oral transfer of knowledge through “Mentoring” for example as well as written transfer in the form of knowledge data banks. Moreover, the findings identified that in an organization like the higher educational institution knowledge transfer is of utmost importance. Having this in mind, it is equally important to teach competences that are helpful for the career entry and that support the application of the acquired knowledge.

**Keywords:** knowledge transfer, didactic methods, knowledge types, practice oriented didactic, higher education, storytelling, knowledge sharing

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# Knowledge Mapping in a Medical Biology Laboratory in Morocco: A Case Study

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**Abstract:** Knowledge has always been a very important and strategic element for companies, but today more than ever, being able to manage this knowledge is the cornerstone of success. Indeed, in a world increasingly competitive and changing, knowledge management creates value and gives a competitive edge. For this purpose, knowledge management is a major component in ensuring the sustainability of companies. Knowledge is a company's legacy and can be an irreplaceable resource; however, many risk factors, including the retirement of employees, work reorganization, or changes of positions can result in the loss of knowledge available. Therefore, identifying all of the knowledge and know-how in a company becomes a high-stakes challenge. One of the first steps of the knowledge management process is called knowledge mapping. This is a tool that helps us visualize the know-how within a company. Knowledge mapping allows performing an analysis that determines the useful knowledge that needs to be preserved, perpetuated, and shared. Thus, knowledge mapping guarantees the sustainable development of companies over time. This paper presents a project for the implementation of knowledge mapping. The study was performed at The Laboratory of Medical Analysis and Research of the Fraternal of the Royal Gendarmerie in Morocco (LRAM). The knowledge mapping was performed using a domain approach. A domain of knowledge can be defined as the field of activity of a group of people for which information and knowledge can be grouped (Aubertin 2007, p.135). Then, the criticality of the identified knowledge was evaluated in order to retain the critical of it. Afterwards, we conducted a strategic analysis to compare the critical knowledge domains with the strategy axis of the LRAM. As a result, an action plan was established to ensure the transfer and preservation of critical and strategic knowledge.

**Keywords:** knowledge management, knowledge mapping, medical biology, laboratory, critical knowledge, case study

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# The Importance of Space in Knowledge Sharing Online: The QUBE Approach

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**Abstract:** In this conceptual paper, we look at certain weaknesses in conventional understandings of the concepts of “knowledge sharing” and “collaboration” and propose some improvements; furthermore, we explore certain unrecognised strengths of 3D platforms and finally we present a 3D system called QUBE that exemplifies how the insight discussed contributes to improving online knowledge sharing and collaboration. Firstly, clarifying the concept of collaboration will allow us to show that knowledge sharing has an important role to play in collaboration. Secondly, with the help of our *presence model of knowledge sharing* (cognitive presence, social presence and leading presence), we can better understand the role and the importance of space in knowledge sharing, explain why collaboration is more successful on 3D than on 2D platforms and show how this can lead to improved collaboration in online interactions. Finally, we present QUBE, a 3D system that implements these ideas by smoothly integrating both suitable interaction methods and a properly designed 3D platform provided with avatars, rooms, audio, video, writing and other useful functions.

**Keywords:** e-collaboration, knowledge sharing, presence, 3D platforms, knowledge and space, QUBE

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## Knowledge-Based Selection of Customers: The Opportunity/Profitability Matrix

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**Abstract:** New knowledge production is a crucial issue for Knowledge Intensive Business Services (KIBS): by definition, knowledge is their main competitive resource. Many studies have revealed that these firms resort to various cognitive sources that can be located both inside and outside the firm. In particular, scholars underline that clients usually play a crucial role in helping KIBS companies to co-create or co-produce the new knowledge needed to innovate their services. This is why choosing the “right” customers to serve is vital. According to past

studies, the selection processes of customers should be based on two criteria or dimensions: the profitability of clients (i.e. the economic returns they can yield), and the cognitive opportunities they give (i.e. the opportunities for suppliers to develop new knowledge based on the interaction with clients). Based on the above, the paper proposes and discusses a practical tool for performing a knowledge-oriented assessment of the client portfolio of a KIBS company: the Opportunity/Profitability matrix that allows to classify customers according to the two mentioned dimensions. The usefulness and practical applicability of the matrix have been preliminary evaluated by means of a focus group with executives of a selected sample of KIBS firms. The paper reports the results of this focus group and describes the potential and limitations of the Opportunity/Profitability matrix.

**Keywords:** client portfolio, knowledge creation, KIBS, opportunity/profitability matrix, focus group

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## **Identification and Comparison of KM Strategic Approaches: Analysis of Spanish KIBS Companies**

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**Abstract:** Knowledge Management (KM) is increasingly recognized as a strategic element of today's companies. However, a still debated issue is how companies can or should plan their KM activities. Some scholars argue that KM should be a deliberate activity, based on formal plans and clear allocation of resources. Other studies have shown that, at least in some businesses, KM activities tend to be informal and occasional, and lead to problem-driven solutions. Consequently, there is the need to investigate this issue in greater detail. Based on a survey-based investigation, this study contributes to the identification of the different possible KM approaches of companies, under the assumption that these adopt an approach that can be placed in between the previously cited two ideal extremes (that will be called "deliberate" and "emergent" KM approach respectively). The investigation is part of a broader analysis regarding KIBS (Knowledge-Intensive Business Services) companies, involving similar companies in some European Countries. These firms have been selected as the object of analysis because knowledge and KM are the core ingredients of their business. Specifically, this paper illustrates the preliminary results of the survey conducted on Spanish KIBS.

Questionnaires were sent to a target sample of companies of various size and sector. The main goal was the identification and characterization of the approaches to KM adopted by companies, and the possible relationship between their KM strategy and other characteristics of the company (sector, size, etc.). By using some descriptive statistics, the paper illustrates the preliminary classifications and categorizations of the KM approach that companies adopt. These findings can be of interest for both researchers in KM (that can find inspiration for further investigation on the issue) and practitioners (by providing them better understanding of how KM activities can take place in organizations).

**Keywords:** knowledge strategy, strategic planning, KM approach, survey, Spain

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## The Impact of the Entropic Knowledge Dynamics in the Decision-Making Process

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**Abstract:** The entropic knowledge dynamics departs from *the iceberg metaphor* used for the explicit and tacit knowledge by introducing *the energy metaphor*, which leads to the multifield theory of organizational knowledge. According to this theory, there are three fundamental fields of knowledge: rational, emotional, and spiritual. Each of these fields transforms continuously into another field, creating a synergy effect which impacts the decision making process. In this front, the purpose of this paper is to describe the new entropic dynamics approach and to investigate its impact on the decision making process by using quantitative research methods. Experts in a workshop debated on the role played by each field of knowledge and the entropic dynamics on decision making. Then, a questionnaire has been developed containing 30 questions structured on two levels of complexity. The first level contains questions addressing the role played by each of the three forms of knowledge on decision making while the second level contains questions addressing the way knowledge dynamics impacts decision making. Since we are interested in the generic phenomena of decision making and the role played by knowledge dynamics, we invited students in management and business administration from two important universities in Romania to participate in the questionnaire-based survey during January and February 2017. Finally, 399 valid questionnaires were retrieved. This research demonstrates that students attach the highest importance to the Entropic

Knowledge Dynamics, thus, identifying knowledge transformations and interactions as the most prominent factor.

**Keywords:** rational knowledge, emotional knowledge, spiritual knowledge, knowledge dynamics, decision making, multifield theory of organizational knowledge

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## Emerging Digital Business Models in the Legal-Industry

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**Abstract:** This empirical paper addresses the effect of digitalization on professional service firms (PSFs). In particular, we apply a business model framework to virtual law firms to identify important dimensions of recent disruption within this context. PSFs, such as law firms, are defined by the professional workforce they employ and the knowledge-intensive services they deliver. While the business models underpinning these firms have changed little over the past century, recent research indicates that digitalization can severely disrupt this industry. We present empirical evidence from law firms applying alternative business models. Initially, data was collected through twelve semi-structured interviews in Silicon Valley in 2015. Subsequently, we conducted a media study identifying an additional 8 firms interviewed over Skype in 2016 and early 2017. The findings reveal key issues related to changes in law firms business models caused by digitalization: (1) cost and lawyer flexibility as main drivers of business model innovation through technology; (2) rethinking of business models in law; (3) enacted technologies as driver of change; and (4) digitalization as a way to overcome resource trade-offs. Each of these issues can and are likely to cause extensive changes to a professional service firm's business model. In conclusion, we find that digitalization has huge implications for how professionals in the legal industry can structure their work, interact, recruit and train employees as well as design their services and interact with clients. The study of law firms contributes as an illustration of the potential impact of digitalization on a broader set of knowledge intensive organizations.

**Keywords:** business models, case study, digitalization, disruptive innovation, professional service firms

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# KM Processes in a Higher Education Organization: An Administrative Staff Perspective

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**Abstract:** The main goal of this study is to characterize a university context, in relation to its Knowledge Management (KM) processes, according to the administrative staff's perspective. First, the theoretical foundations on which this study is based will be presented, focusing on KM in the higher education domain and the main model forming the basis of the research, thereby providing all the conditions for the effective contextualization of this empirical study. This is a qualitative study, involving 20 semi-structured interviews. The data collected were treated using Nvivo10, thereby attempting to optimize the content analysis performed. The 20 interviews produced 4985 units which were coded in the 156 categories at 4 levels. Considering level 1 categories, representing KM processes, Knowledge creation and acquisition and Knowledge utilization were the most frequent and Knowledge retrieval showed the lowest frequency. The results allowed identification of the administrative staff's KM processes operating in the university context studied. They also contribute to greater understanding of KM processes in higher education institutions, notwithstanding the need to carry out more research of this nature.

**Keywords:** knowledge management, higher education institutions, qualitative analysis, administrative staff, employees

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# The Moderating Role of Servitization Degree in the IC-Innovation Linkage

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**Abstract:** This paper analyses the moderating role of servitization in the relationship between intellectual capital (IC) and product/service innovation performance. The provision of services is likely to rely on different knowledge resources compared to the delivery of manufactured goods. For instance, services usually involve a higher degree of interaction with customers, as well as an ongoing adaptation to their changing demands (i.e. strong customization). The latter should enhance the relevance of experience-based (i.e. tacit) knowledge embedded in external relationships as well as employees' ability to deal with novel and unexpected situations. However, there is no previous study that analyses the influence of servitization in the IC-innovation relationship. This paper tries to overcome this research gap by analysing this aspect in a set of 180 Spanish companies from different industries and with different servitization degrees. A structured questionnaire has been used in order to gather information about the variables under study and structural equation modelling (SEM) based on partial least squares (PLS) has then been applied in order to test the hypotheses put forward by the research. The results obtained show that the degree of servitization negatively moderates the relationship between internal relational capital and product/service innovation performance (i.e. the more manufacturing-oriented, the higher the relevance of nurturing knowledge sharing and interaction within the firm) and positively moderates the relationship between external relational capital and product/service innovation performance (i.e. the more service-oriented, the more relevant nurturing knowledge sharing and interaction with external agents). Conversely, the degree of servitization does not moderate the relationship between human capital and product/service innovation performance and between structural capital and successful product/service innovation. The research carried out offers managers specific guidelines so as to make informed investment decisions related to the knowledge resources that best enhance innovation depending on their manufacturing or service orientation.

**Keywords:** human capital, structural capital, internal relational capital, external relational capital, product/service innovation, servitization

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# Skills in Sight: How Social Media Affordances Increase Network Awareness

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**Abstract:** The discussion in this paper derives from an analysis of data from twenty interviews conducted with members of an online knowledge sharing platform between October 2016 and February 2017. The empirical work is part of a larger doctoral study that investigates tacit knowledge sharing, online platforms and social media use within the public sector in Scotland. These are themes that, to date, have been under-explored by researchers. The work reported in this paper is a contribution that addresses one of the aims of the larger study in that it examines the extent to which social media afford new capabilities in the sharing of tacit knowledge. The methodological approach deployed for the larger study uses both quantitative and qualitative methods (Buunk, Hall & Smith, 2016). The sample approached to participate in the interviews was identified from survey responses gathered in late summer 2016. The sampling strategy chosen was based on criterion sampling. This is a form of purposive sampling commonly used in qualitative studies (Palys, 2012). As a result, only heavy users of social media tools were selected from the survey returns for invitation to interview. Prior work suggests that the visibility of individuals' competencies can enrich "knowledge awareness" (Cooke & Hall, 2013). In addition, when social interactions are facilitated publicly on an online platform, awareness of these enhances opportunities for knowledge transfer (Leonardi & Meyer, 2015). The preliminary findings from the analysis of the interview data gathered for this study suggest that online platform and social media affordances increase network awareness and – as a consequence – the skills of individuals are rendered more visible. Some interviewees made this explicit by underlining this positive outcome of sharing details of their expertise online. Skills belong to the technical dimension of tacit knowledge (Nonaka, 1994; Panahi, Watson & Partridge 2013). Thus, it can be argued that when online platforms and social media offer the affordance of enhancing skills' visibility (for example through making it possible for network members to see social interactions within a network, and understand network shape) they bring new capabilities to the facilitation of tacit knowledge sharing.

**Keywords:** heavy user of social media, knowledge sharing, online platforms, social media, social network awareness, tacit knowledge

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# Microfoundations of Knowledge-Related Capabilities: A Clash of Paradigms

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**Abstract:** In the last decades, knowledge has increased its role as a key resource in the economy (Castells 1996). As a consequence, the strategy field has emphasized the knowledge factor in most of its analyses. Several knowledge-based approaches have been developed (Grant 1996, Spender 1996, Boisot 1998, Grant 2013) and knowledge-related constructs like routines and capabilities have taken center stage (Helfat et al. 2007, Kogut and Zander 1992, Teece and Pisano 1998, Nelson and Winter 1982). Knowledge plays two complementary roles in firms. First, knowledge is a resource that may be combined with other resources in order to develop products or services. Second, a firm needs to know how to obtain those resources and to combine them in an adequate way. In this second aspect, knowledge is strongly related to the idea of dynamic capabilities (Teece 2009, Helfat et al. 2007). According to Felin et al. (2012), in order to take advantage of the dynamic capabilities concept in managerial practice it is necessary to understand better their microfoundations. In the case of knowledge-related capabilities, this problem was already identified by Argote and Ingram (2000). In spite of some interesting contributions in the management literature about the micro-level foundation of knowledge-related capabilities (Argote and Ren 2012, Gavetti 2005), some of the gaps identified by Foss and Pedersen (2004) remain. In this paper I will show how different approaches to knowledge management give rise to different paradigms on which the discipline relies. Understanding this situation is necessary if we want to better identify the microfoundations of strategic knowledge management. The paper starts with a characterization of the foundations of the knowledge management discipline. After reviewing the different traditions and approaches of knowledge management, I will use an interesting framework developed by Hollis (1994) about paradigms in social sciences to identify and classify the concurring paradigms in knowledge management. I will finish proposing a catalog of types of microfoundations for knowledge-related capabilities based on the dynamic capabilities model by Teece (2009).

**Keywords:** dynamic capabilities, microfoundations, knowledge management, knowledge assets, philosophy of social science, organization theory

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# Big data for Scientific Knowledge

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**Abstract:** The recent big data hype has emphasized data analysis as one of the main sources of knowledge generation. Of course, the idea of data as a fundamental element for the existence of knowledge is not new. But the possibility of acquiring and analyzing large amounts of data from varied sources at high speed (the so-called 3 V's of big data) has become possible only lately in many areas. Therefore, many companies are starting to rely on machine learning algorithms applied to huge databases to know more about their customers, their competitors, or their environment. In other fields, though, this trend is not new at all. In many fields of science like high energy physics, genomics or astrophysics big data have been there for a long time. For instance, the famous High Energy Physics experiments that have taken place at CERN in the last decades would have been impossible without the capacity to gather, combine and analyze the large streams of data churned out by their huge particle detectors. Similar cases are those of the Human Genome Project or the large telescopes. In this paper we will examine how the process of extracting knowledge from data is performed in one of the most complex experiments ever: the ATLAS experiment. ATLAS is one of the main experiments of the Large Hadron Collider at CERN, where the Higgs' boson was detected. Relying on a knowledge management approach, our research combines archival research on the ATLAS experiment documentation with in-depth interviews with several physicists and engineers conducted at CERN in the last years. We look at different aspects of the generation of scientific knowledge from data like the research data management, data infrastructures, collaboration in data analysis, the role of simulations or the validity of scientific knowledge derived from data. We also examine the ATLAS policy on research data management and their bet for open science through CERN's Open Data Portal. Some of the insights we extract from this research can be useful not only to other fields of scientific research now getting into big data like some areas of social science (i.e., computational social science) but also to companies and institutions testing the waters of the big data business

**Keywords:** big data, knowledge generation, scientific research

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# Managing Knowledge in a Lean Product Development Setting: Practices From an Automotive Firm

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**Abstract:** The management of knowledge in lean product development (LPD) contexts appears to be a promising research area, given the paucity of contributions on the topic. The most interesting available studies up to date (Tyagi et al., 2015; Lindlöf et. al., 2013) have dealt with the understanding of LPD tools and methods in the light of Nonaka and Takeuchi theoretical framework (1995). In particular, the Obeya room as one of LPD tool seems to be an interesting object of study in terms of knowledge integration and transfer in a variety of empirical settings. The aim of the paper is to verify how the Obeya room is used to integrate knowledge and how it is possible to classify it according to the SECI (socialization, externalization, combination, and internalization) model. In particular, we investigate this relationship in the Obeya room carried out in Fiat Chrysler Automobiles (FCA), within a project for the development of a new longitudinal-engine for Alfa Romeo Giulia. We carried out case selection in three steps. First, we selected the automotive industry as one of the major settings in which the debate concerning the relationship between LPD and the managing of knowledge is mostly relevant. Second, we selected the focal firm to be studied. We chose FCA, a multi-brand auto manufacturer whose product range covers different market segments, operating through companies located in 40 countries. We analysed how this firm achieves knowledge integration practices at project level. The study was exploratory, which may be useful in generating future research hypotheses, connecting the features of research projects with the need to achieve knowledge integration. Differently from previous pieces of research (Tyagi et al., 2015; Lindlöf et. Al., 2013) we dealt with the Obeya room in an empirical setting focusing on socialization practices.

**Keywords:** managing knowledge in product development, socialization

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# A Systemic Model of Engineering Knowledge Management From the Energy Sector

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**Abstract:** Knowledge management (KM) is key to the delivery of impact from the activities of any organisation. Impact is not just about delivering economic benefit but encompasses a wide range of outcomes including environmental improvement, cultural diversity and social change. While expressions of knowledge use and application often form crucial elements of models for implementing KM, it is rare to see 'impact' included within them. Some models of KM seek to address this by introducing notions of knowledge 'evaluation' and 'validation'. However, none appear to have taken the holistic approach explored in this paper, based on an ethnographic study of a knowledge intensive organisation in the energy sector. The case study organisation, the Energy Technologies Institute (ETI), is a partnership between industry and the UK Government set up in 2007 under a ten-year operational model with an innovation budget of up to £60 M per annum. It seeks to reduce the environmental impact of energy use and production by accelerating innovation in low carbon technologies. Guided by these objectives, the models that shaped the KM practices within the ETI have developed over time. They are ultimately focussed on creating a legacy from the organisation's activities and delivering long term impact. In its final form, the approach employed by the ETI is based around a systemic model which: Takes account of the interdependencies of data creation, information architecture and knowledge management Creates outcomes through the delivery of 'benefits' to 'beneficiaries' Recognises that knowledge 'from' and 'about' beneficiaries is as important in the process as the creation of knowledge 'for' them This case study shows that KM models can be highly effective when they are fully integrated into 'impact delivery' processes.

**Keywords:** case study, ethnography, energy sector, impact, knowledge management model

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# The Impact of Organisational Culture on Staff Knowledge Sharing in Higher Education

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**Abstract:** This study is rooted in the complex and rapidly changing convergence of higher education, information systems, and the new wave of social media enabled knowledge management (KM). The implementation of KM practices in higher education institutions (HEIs) has been identified as being at low levels by a number of studies, and the consequent lack of staff knowledge sharing has a negative impact on overall performance. The research is based on an Action Research project and its main focus is to investigate how enterprise social networks (ESN) can enable staff knowledge sharing in virtual communities of practice in HEIs. The conceptual model for the research identified a number of key antecedents which must be present for a knowledge sharing environment to emerge. One of these is having an organisational culture that makes peer sharing of knowledge just as valid as top-down sharing. Many of the organisational and individual barriers to knowledge sharing stem from the presence of an organisational culture that does not promote or encourage knowledge sharing, and this is evidenced in management practices. This study seeks to explore the extent of the impact that organisational culture has on the knowledge sharing environment, and to discover if management and staff are committed to overcoming the barriers in order to realise the benefits that having an open knowledge sharing culture brings. The key findings indicate that organisational culture and structure are major barriers to staff knowledge sharing and this problem is exacerbated in HEIs by the existence of a divide between faculty and other staff. In addition, management have a major role to play in shaping the knowledge sharing environment and this can only be achieved through transformational leadership, driving change in the culture such that staff are suitably motivated to interact and collaborate with each other, and share knowledge freely. The study findings provide opportunities for educationalists to better understand the scope of employing ESN platforms for knowledge sharing and how organisational culture impacts on participation. In seeking to determine the drivers and barriers to sustainable use, this research should be of interest to practitioners and researchers undertaking similar projects.

**Keywords:** enterprise social networks, knowledge management, communities of practice, higher education, organisational culture, action research

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# **Knowledge Sharing in the Online Environment: Emotional Intelligence, Social Capital, and Intellectual Capital Relationships**

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**Abstract:** Online social networks have facilitated an unprecedented era of social knowledge sharing. This study explores links between social capital created through online social network knowledge sharing and resultant intellectual capital. It is suggested that within the organizational context, intellectual capital can be generated from social capital through knowledge sharing, facilitated by online social networks. It is also suggested that emotional intelligence can enhance this knowledge sharing through its influence directly on knowledge sharing behaviours and indirectly through its enhancement of social capital. The benefits of online social networks in the area of knowledge sharing are well documented; however, this study suggests that they not only provide the platform to share but, in combination with emotional intelligence, also provide motivation to share as participants gain satisfaction of organizational good as well and personal benefit from increased social capital.

**Keywords:** knowledge sharing, capital, emotion, online networks

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## **The Knowledge Spiral and Innovation: A Case Study**

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**Abstract:** Many theories exist to explain how knowledge is transferred and spreads within an industrial district and how this creates new knowledge and innovation. Despite this, a strong theory able to explain how knowledge is created and spread and particularly how innovation takes place within a modern industrial district does not exist. In this paper, we propose to overcome this gap through the empirical application of the Nonaka and Takeuchi model to a case study. This model, in fact, for us, is the best developed in the literature because it stresses knowledge creation and explains how innovation takes place in a firm and, for us, within a modern industrial district. This said however, the model presents various shortcomings when used in this way. Considering the limits of NTM, this paper aims to analyze whether the NTM integrated with the other mechanisms of knowledge conversion, creation and diffusion that we have identified with the help of the knowledge based theory, could be empirically applied to a modern

industrial district and if innovation takes place. The empirical aspect is based on the results of surveys carried out on a sample of clothing-fashion district firms located in SE Italy (Apulia) and we present our empirical analysis using Newey's (1987) two step estimator. The choice of the sector resulted from its inclusion in one of the 4 Italian meta-districts in 2011 and its having taken over the leading position in the textile and clothing industry in the Apulia region in southern Italy (Fondazione Edison, 2013). The 4<sup>th</sup> Report of National Observatory of the Italian district (2013) also noted that, despite the crisis of 2008, out of 22 districts localized in the South of Italy, the leaders are the clothing districts that represent 56% of total. The economic area is characterized by very high levels of tacit knowledge and the binomial of innovation – learning is important together with the recognition of the new Apulian Fashion District Production Chain in 2010 under the terms of the Regional government's resolution.

**Keywords:** knowledge spiral, innovation, Nonaka and Takeuchi's model, knowledge based theory, clothing-fashion district

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## **A CBR System for Improving the Psychiatric Knowledge Management, Skills and Attitudes of Patients**

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**Abstract:** "Psychiatry" refers to a field of medicine dedicated to the diagnosis, prevention, study, and treatment of mental disorders. Psychiatry is focused specifically on the mind, aiming to study, prevent, and treat "mental disorders" in humans: mental illnesses, severe learning disabilities, and personality disorders. In Islam, "mental illness" is often associated to the presence of jinns (spirits) in the body of the patient. This phenomenon is called "possession". "Possession" is the belief that an individual has been entered by an alien spirit or other parahuman force, which then controls the person or alters that person's actions and identity. In this paper, we propose the analysis and design of a CBR (Case-Based Reasoning) system for the management of the psychiatric knowledge of patients including medical factors (normal factors) and possession factors (abnormal factors). We distinguish the relationships between "jinn possession" and "mental illness". This system aims to improve the psychiatric diagnosis, skills and attitudes of patients. We focus particularly on their cultural, religious factors, their history and lifestyle. Numerous studies have identified Case-Based Reasoning as particularly appropriate for application to the conceptual stage of domain knowledge. It is the process of solving new problems based on the solutions of similar past problems. The paper is organized as follows: first, we

review the medical literature on “jinn and possession” in the context of psychotic disorders and “mental illness” as a medical viewpoint. Secondly, we illustrate the general architecture of the CBR system and its functioning principles. We describe the design model derived from the knowledge management process according to the CBR approach. Finally, we illustrate the model by 4 cases of patients presenting different symptoms and diseases and diagnoses. We will explain the dilemmas faced by psychiatrists.

**Keywords:** psychiatric knowledge management, jinn possession, mental illness, CBR

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## The Potential of Knowledge Sharing in the Diagnosis Variability

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**Abstract:** The purpose of this paper is to manage knowledge sharing of the diagnosis variability in medicine and radiology. The main role is to reduce this variability for improving the patient diagnosis and his/her follow-up. The organizational and cultural challenges of knowledge management in medicine and radiology practice are complex. An organizational capability to manage knowledge management is required. The knowledge management capability process requires organisational members to share and communicate even though they are working in different fields having different requirements and viewpoints. This allows the organization’s knowledge management strengths, weaknesses, and needs. The shared understanding may then be translated into projects or operations to improve or develop knowledge management practices and processes. In this paper, we propose to develop a model grouping the knowledge shared by physicians and radiologists. Before developing this model, we will collect user’s needs and requirements used to establish the diagnosis. This knowledge sharing concerns especially the diagnostic variability of patient’s diagnostic. This variability is caused by geographic and cultural factors of the scientific community. The model is based on the “Bayesian network” to calculate the risk of malignancy of demographic risk factors (age, cancer history,...) and imaging features using the Breast Imaging Reporting and Data System (BI-RADS) standard. The paper will discuss the issue of the diagnosis variability and knowledge sharing including culture, and geographic influence to establish a good diagnosis. This research work provides a double dimension scientific and practical. It aims to provide a better understanding of information and knowledge shared

by the concerned community. We will validate this model by real examples in radiology (breast cancer).

**Keywords:** diagnostic variability, knowledge sharing, cultural and geographic factors, BIRADS, Bayesian network

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## **Modelling Knowledge Dynamics in Industry 4.0: A Smart Grid Scenario**

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**Abstract:** New digital technological advancements are giving rise to the fourth industrial revolution, commonly termed as Industry 4.0, in which the physical and the digital world merge and the boundaries between products and services are blurring. This transformation is powered by smart, autonomous objects that communicate and interact among themselves or with actors through the connected, multi-loop, and multi-layer network of Internet of Things and Services. These interconnected smart objects create, carry, and share large volumes of data, leading to many potential opportunities for creating value from such data. Albeit particularly Big Data has been a much-discussed term in research concerning the Industry 4.0 paradigm, the role of knowledge, especially tacit knowledge has been neglected thus far. Furthermore, a conceptual model that would provide an aggregated framework to understand knowledge-based activities and flows does not exist yet. In this paper, we attempt to bridge this gap by firstly critically examining and clarifying the terms data, information, and tacit knowledge by drawing upon relevant knowledge management theories, foremost on Polanyi's, a common (albeit often misinterpreted) reference point for his successors. Then, by reviewing and analyzing related literature, we develop a conceptual model of knowledge dynamics in the Smart Grid ecosystem, which is one of the potential application fields of Industry 4.0. Specifically, we conceptualize main components and their relations, and describe how knowledge-based activities are embedded in the multi-feedback loop and multi-layer network of Internet of Things and Services. We exemplarily outline a use case – a Smart Grid program of CLP Power Hong Kong Limited, the largest supplier of electricity in Hong Kong – as an example of how value is co-created through knowledge dynamics within such ecosystems. Furthermore, we discuss the

theoretical and practical implications of the emerging knowledge dynamics model for the design of knowledge management systems.

**Keywords:** knowledge dynamics, big data, tacit knowledge, Industry 4.0, internet of things, internet of services, smart grid, knowledge management systems

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## Organizational Values Fostering Secure Knowledge Sharing

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**Abstract:** The loss or misuse of organizational knowledge is among the top adverse consequences of security breaches committed by organizational members with a trusted access to organizational data and systems. Technical, administrative, and managerial controls are therefore embedded in the IT-environment to steer employees' knowledge sharing activities towards secure practices. By drawing on the organizational culture framework, this study investigates organizational values and their influence on employees' use of knowledge systems. Promoting acceptable security-related behaviour through organizational values has been shown to be more effective than regulations. If an organization espouses a set of values fostering secure knowledge sharing practices, employees could be less tempted to put the organization at risk. So what organizational values might influence employees to use secure knowledge sharing practices and what are the potential dynamics among these values? To answer this question, interviews were conducted with fourteen security professionals from different organizations. Using an analytic induction strategy (Patton, 2002), the findings exposed eight organizational values fostering the use of secure knowledge sharing practices. These values include emphasis on HR development, intra-organizational collaboration especially among security experts, and a set of values conducive to knowledge sharing and secure practices (ethical predispositions, positive attitude towards compliance, positive attitude towards change, constructive reaction to security incidents, accountability, and long-term planning). The findings also uncovered an intertwined network of values, supporting each other and creating synergistic forces. Although other secure knowledge sharing values might exist, the eight values found in this study underline core organizational values necessary to support secure knowledge sharing practices. Thus, they represent a starting point for practitioners' and researchers' discussions about minimizing insider threats. Insider threats will not cease to exist but, with a more appropriate set of values, organizations can put forward a better defence.

**Keywords:** knowledge sharing, information security, organizational values, qualitative study

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## **Facilitating Knowledge Sharing Environment Within Bureaucracies by Cultivating Communities of Practice: A Case Study**

**Meri Duryan and Hedley Smyth**

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**Abstract:** Hierarchical structures and processes in organisations that manage large infrastructure programmes are designed to better control their implementation. Bureaucratic rigidities of the organisations do not allow them to deal with increasing complexity as they lack environments that encourage the knowledge flow, risk taking and flexibility on which adaptation thrives. The centralised power structure generates defensive mechanisms and discourages individuals to learn and to share knowledge. To remain flexible and adaptive the bureaucracies need to sustain their competitive advantage by capitalising on knowledge and experience of their experts. The leadership needs to think holistically about combining conditions of hierarchy and discipline with other forms of cooperation. Communities of practice can become the spaces of explicit and especially tacit knowledge exchange outside the usual organisational constraints and can foster environment of learning and collaboration internally and externally. However, there are many examples of failure to evolve them into a sustainable entity. This paper explores the process of cultivating communities of practice within a hierarchical organisation that manages large infrastructure programmes. It aims at studying how application of problem structuring techniques can assist the organisation under scrutiny in understanding the key sponsors' perceptions regarding communities of practice and how that can contribute to reducing a tension between a need to capitalise on expert knowledge and the individuals who are discouraged to learn by control structure of a hierarchical organisation.

**Keywords:** knowledge management, communities of practice, organisational learning, hierarchical organisations, cognitive mapping

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# A Critical Knowledge Mapping Approach for Moroccan Handicrafts

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**Abstract:** Knowledge mapping methods stemming from the fields of Engineering and Knowledge Management are mostly derived from the industrial world and do not easily apply to the world of traditional crafts. The world of business is generally governed by an organization or hierarchical management system and is therefore completely different from the field of handicrafts where informal systems are the norm. In the craft world, most craftsmen are independent and most likely do not meet the required prerequisites to benefit from the formal capitalization process or professional growth networks. The knowledge is largely tacit and deeply rooted in action. Trade secrets are transmitted from generation to generation through observation, imitation and practice, but without any formalization. Thus, in order to promote a sound transfer of knowledge, thereby fostering sustainability and innovation, it is essential to enhance the management of this knowledge, know-how and skills, in a structured manner. As is the first step in most knowledge retention programs, determining what knowledge is most at risk is of great importance to identify the most priority and effective knowledge management actions to be implemented. However, this is not a trivial exercise. Upon analysis, three questions must be addressed: What approach to mapping critical knowledge is most adapted to the craft industry: process-based approach or domain approach? How to conduct the knowledge elicitation process? And which mapping visualization tools fit best? To answer these questions, a systematic approach needs to be proposed and validated. For this purpose, a case study within the Moroccan zellige craft has studied and interviewed the sector and several master craftsmen. While conducting this study, many on-the-ground challenges were identified such as cultural barriers to improving knowledge sharing and the lack of specific documentation making it difficult to identify worker's knowledge scope. However, the study results made it possible to elaborate an action plan for Moroccan zellige handicraft knowledge management in which the modelling of certain highly critical knowledge, mainly related to the design phase, are a must and the subject of ongoing work.

**Keywords:** knowledge mapping, critical knowledge, Moroccan handicraft, Moroccan zellige, knowledge transfer, knowledge management, knowledge engineering

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# Digital Media and Relational Capital

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**Abstract:** Assessing the impact of knowledge management across multiple firms has long been an issue in the field. Although we possess multiple measures for doing so, all have their strengths and weaknesses. As a result, multi-firm studies tend to be rare and undertaken only with great care. Here, we use new data and analytical tools to assess knowledge about and relationships with customers, part of the relational capital of the firm. While relational capital is not only about customers, those relationships are often a major part of it. Further, we know that firms with big brands (high brand equity) would be expected to have high relational capital levels. We identified several industries characterized by high levels of explicit knowledge (based on other studies) and strong brands. Using webcrawling software, we collected and analyzed social media mentions and other digital aspects of the brand leader(s) and brand challenger(s), grouping by sentiment. As expected, the brand leaders tend to have more mentions. Less expected was a clear tendency for the brand leaders to have less variation in their brand sentiment: the more powerful brands were more stable. These results provide a context for using big data and analytics methodologies together with knowledge management and intellectual capital studies. Initially, digital media is a growing means of establishing closer relationships with customers, enhancing relational capital. But the visibility of social media, in particular, also provides a way for marketers to track their customer relationships in real time, assessing the growth or decline of relational capital as it happens.

**Keywords:** knowledge management, intellectual capital, explicit knowledge, relational capital, social media, digital media

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# Knowledge Generation for Regional Competitive Advantage

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**Abstract:** Management of intangible assets to generate new synergies emerge as an important factor for knowledge activities (Connell and Voola, 2007; Heavin and Adam, 2012). Corporate social responsibility activities (CSR) are accepted as a way



of managing intangible assets and aligning organizational values to knowledge management (Pandey and Dutta, 2013). CSR can involve bringing together social responsibility projects and innovation and using social engagement as a strategic instrument for knowledge generation (Maxfield, 2008). In this paper, the authors argue that investing in a regional strategic CSR project and combining it with innovative elements may enable new interactions across sectors for the generation of new knowledge. A case study is conducted focusing on the software giant SAP and a model is proposed to analyze SAP's corporate culture, its emergence and its effect on the type of CSR activities for knowledge generation and the formation of human capital with an emphasis to the future.

**Keywords:** knowledge economy, CSR, knowledge generation, tacit knowledge

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## **Improving SMEs: A Study on Knowledge Transfer Between Norway and Poland**

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**Abstract:** This paper is connected to a project called "Polish Norwegian cooperation for environmental friendly and innovative solutions in SMEs". Energy efficiency and sustainable resources management are success factors of competitive industries in Europe. Poland is still facing challenges in that aspect and Polish SMEs do require of the system approach allowing to introduce good practice and solutions implementing sustainable energy management in the companies. Apart from political targets set up by European Union, energy efficiency is a vivid and important topic for many of small medium size businesses all over Poland. Based on this research project, this will look at transfer of knowledge and technology between Norway and Poland. Goals of the project that this paper is based on are: (1) to strengthen Norwegian-Polish cooperation and the exchange of knowhow and technologies (2) to increase the energy efficiency of SME and more effective management of recourses (3) to develop sustainable solutions in energy efficiency for participating SME (4) to share the bilateral knowledge and experience in organization of companies support (5) to share and promote best practices in energy efficiency both in Poland and in Norway. Knowledge transfer between two countries have both opportunities and challenges. Since knowledge is shared/ transferred between two (national and organizational) contexts, the knowledge has to be transformed first. That is, the

knowledge has to be de-contextualized from its source and then re-contextualized to fit suitably to the transferred context. This paper addresses the cultural challenges of the knowledge transferring process between the two countries. There can be several cultural factors that can affect the knowledge transferring process. These factors can be seen from various perspectives. This paper considers systems thinking as an underlying theory to address the theme of this paper along with the description of explicit and tacit knowledge. This paper describes differences in individuals' understanding of the reality due to their own cultural contexts, and discusses some underlying mechanisms that lead individuals to understand their reality differently. Understanding of these mechanisms can serve as a guiding framework for the project to devise actions and strategies to improve the knowledge transferring process. Case studies will be applied as a research method.

**Keywords:** knowledge transfer, small and medium sized enterprises (SMEs), collaboration between Poland and Norway, business development

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## **Non-Routine Knowledge Sharing in Elderly Care-Facility for Better Services**

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**Abstract:** Documentation is a huge issue in elderly care and KM has big potential in supporting this service industry. A Social Networking Service (SNS) like handover support system for elderly care facilities was installed in a facility and has replaced the conventional hand-written handovers and is in real operation in care facilities for more than 3 years. The authors have conducted quantitative/qualitative analysis, depth interview to the employees and managers to assess the effect of adopting ICT system for knowledge management of non-routine information with high stickiness. The contribution of this study is as follows. In this case study, we confirmed that socio-technological approach is one of the CSFs for adopting KM in SMEs. It was also observed when properly embedded into the business process, ICT has positive effect on employee education.

**Keywords:** critical success factors, knowledge management, tacit knowledge, small to medium-sized enterprises, health care, knowledge sharing, social network services

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# Co-Creation of Knowledge by University Research Projects in low Density Regions

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**Abstract:** This study aimed to understand the role of three universities in low density territories in the co - creation of knowledge as well as the mechanisms used in their transfer to the business fabric. Interviews were made with the heads of three universities in low density regions and the Industrial Liaison Manager that support the research. For the treatment of the interviews, a content analysis and a data codification were performed through the NVIVO software. All the three Universities studied has strong links to the business environment, with more and more knowledge sharing among the different stakeholders. However, this knowledge sharing also ends up being a cost sharing since the vast majority of research carried out in partnership depends on funding both National and Community. This co-creation of knowledge between universities and companies is undoubtedly one of the sources of development of the regions where they are inserted, the former being the main source of innovation of companies, most of which do not have the personal or economic capacity to develop solutions Fundamental innovations. This study contribute to the empirical knowledge of how the universities in low density areas promote the co-creation of knowledge through research projects with business fabric.

**Keywords:** knowledge creation, transfer of knowledge / technology, universities, business, low density territory

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# Knowledge Visualization as a new Discipline: Swiss Bias

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**Abstract:** Knowledge visualization (KV) has drawn the attention of the research community in recent years because of its significant potential in assisting managers to reduce complexity and information overload. The paper intends to identify and characterize the merits of knowledge visualization study as well as its drawbacks, it also suggests directions for the future research development. This aim is achieved by systematic literature review of the visualization studies, which has identified the pioneer research group from the University of St. Gallen in

Switzerland. These researchers proclaimed a birth of KV as a new discipline at early 2000-ies by their systemic impact on information science research. Our paper presents the structured analysis of twenty two selected papers of these Swiss researchers indexed in Scopus and Web of Science databases. Analysis was conducted from the standpoints of collected theoretical knowledge, practice of application, contemporary trends and problems in the knowledge visualization domain. Swiss bias, discussed in the present paper, is related to the fact that only one research group is studying the subject. Problems considered are related to the applied research methods, lack of systematization and weak differentiation of knowledge and data visualization concepts. Works of St. Gallen School significantly contributed to the study of knowledge visualization and revealed perspective directions for future research. Theoretical contribution includes classification of visualization methods, description of visualization's application in business practice, development of boundary objects theory and detailed account for the experiments conducted. Practical contribution in the business includes training projects and creation of new visual models. The papers discuss visual modeling, diagrams classifications, and basics of the proposed approach. Some limitations of the theoretical foundation are revealed in the current paper. Our study gives a clear understanding of further steps to be taken to develop knowledge visualization into an independent discipline. It suggests strengthening the theoretical basis with a structured systemic approach which develops the foundations proposed by the Swiss researchers.

**Keywords:** visualization, knowledge modeling, business diagrams, University of St. Gallen

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## **A Semantic Approach to Knowledge-Driven Geographical Information Systems**

**Ana-Maria Ghiran, Cristina Claudia Osman and Robert Andrei Buchmann**

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**Abstract:** The paper advocates a semantic integration between geo-mapping services and domain-specific enterprise modelling languages, thus leveraging knowledge that can be externalised in diagrammatic model form, towards the benefit of semantically enriching the geographical information made available to end-user apps. Geo-mapping services have grown to be essential data providers for geographical information systems and geo-mapping client apps, by ensuring convenient reusability through Web APIs. Google Maps, Yahoo Maps, Apple Maps are some of the more prominent services in the field and the information made

available through their APIs is increasingly complex, the more popular assets including highly interactive graphical maps, geocoding of locations and routing. In the work at hand, such popular technological enablers are complemented by a valuable source of semantics – i.e., enterprise modelling languages that can be customized for domain-specific purposes in order to facilitate knowledge acquisition through diagrammatic representations. This is typically performed with the help of modelling tools that allow stakeholders to articulate enterprise knowledge in a controlled dialect by using a vocabulary of meaningful graphical shapes whose semantics are relevant for the application domain and for targeted modelling scenarios. The underlying technology of such modelling tools commonly employs graph-based abstractions in order to store, process and operate with model contents. The work at hand investigates the opportunities of interplay between modelling languages and geo-mapping services, by resorting to machine-readable knowledge graphs as an integration medium. More specifically, the underlying graph structure of diagrammatic models is extracted and exposed with the help of the Resource Description Framework (RDF) and the interoperability mechanisms of RDF are further used to semantically connect model contents with geo-data, consequently enriching the geographical information made available to arbitrary client apps. Thus, the proposal is a particular (technology-focused) instantiation of the Externalisation and Combination phases from Nonaka's SECI model for knowledge conversion, whose feasibility is evaluated through an early stage proof-of-concept implementation.

**Keywords:** diagrammatic conceptual modelling, knowledge combination, geographical information systems, resource description framework

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## **Meme Lifecycle Semantics and Organizational Knowledge Creation**

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**Abstract:** The paper proposes and describes an application model for managing meme life cycle semantics, enveloped in a control system for monitoring and adjusting the output of the proposed model. Although Richard Dawkins' meme theory is an informal speculation with some empirical background rather than a mature, rigorous scientific theory, several endeavours in the literature are trying to define formalization and methodologies for it, one of those being the meme life cycle or meme mapping. We are investigating how we can formalize memes' lifecycle by considering Nonaka's SECI model for knowledge creation in business environment. We consider that the Semantic Social Web provides the

environment for meme manifestation and a formalization context for what is more rigorously named “emergent knowledge”, with evolution patterns that may prove beneficial for social networking marketing strategies acting as control leverage. By analogy, memes and organizational knowledge can benefit from each other: 1) memes can take advantage of the proven theories and already formalized models given by the knowledge management field 2) knowledge creation discipline can employ ready to use case studies that could lead to conceptualizing a particular situation to a general concept. Therefore, another important issue that is analyzed in this paper is regarding how memes contribute to the creation of organizational knowledge such that will enable businesses to obtain the required competitive advantage. Marketing strategies may profit from timely identifying and predicting meme channels and incorporate them with their advertising systems. Social networking information systems can supply particular situations concerning marketing campaigns and their outcome. Circulation and life cycle of concepts can be tractable in social networking applications thus providing an empirical base for experiments and research both in the field of memetics and organizational knowledge creation for sustainability of the business. Our application model makes use of a control system therefore not only that we can monitor the memes life cycle and their spreading process but also we can influence meme/knowledge assimilations because of the recommendations made.

**Keywords:** organizational knowledge creation, social networking, meme lifecycle, Semantic Web

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## **Does Knowledge Management Enhance Decision-Making Speed?**

**Daniele Giampaoli and Massimo Ciambotti**

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**Abstract:** Every manager has to make daily decisions the efficacy of which will affect firm performance and so decision-making (DM) and problem-solving (PS) are very important skills able to make the difference between the success and the failure of a firm. At the same time markets have reached such a level of complexity that uncertainty and risk connected to decisions are higher than ever before while market turbulence forces firms to make faster and faster decisions in order to quickly adapt to the changing environment. For this reason time and knowledge are strictly connected resources. Speedy decisions in fact allow firms to adopt new technology or to take advantage of new market opportunities before competitors do so. According to several scholars knowledge management

(KM) seems very useful to improve DM and PS processes. However, to date, few studies have investigated the impact that KM practices have on decision speed and efficacy. Therefore the present paper aims to empirically prove the impact that KM has on the organizational decision-making process and how this, in turn, impacts on firm performance. We collected survey data from 113 leading Italian companies and tested the structural model with Partial Least Square (PLS) method. Results, suggest that some KM practices significantly impact on the firm's ability to make speedy and effective decisions and also on firm performance. A very interesting result is the fact that the firm's ability to make speedy and effective decisions does not impact on firm performance. The main limitations of the present paper concern the fact that it has not been possible to stratify problem solving skills by hierarchical levels (i.e., strategic, tactical, operational) and the generalizability of results, considering that the data was collected from one single European country.

**Keywords:** knowledge management, decision-making speed, problem-solving speed, performance

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## **The Role of Knowledge in the Intuitive Decision-Making of Managers**

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**Abstract:** The study focuses on the new possibilities in exploration and understanding of intuitive decision-making of managers, a topic that is more and more often discussed in management theory. Managers make their decisions in an organisation that, in relation to changes in society, has also significantly changed during the last years. There are many power means available to them, among others also decision-making power that makes them able to decide about key issues in firm direction. Decision-making of managers in organisations is still understood as a mostly purely rational activity. We suppose that manager is able to deliberately calculate inputs and outputs, or the outcomes of their actions, and always does so in order to reach set goals. However, managers are currently expected to decide quickly, which implies a risk of more errors. Intuition stemming from knowledge, experience as well as emotions thus leaves rationality behind. Though, how should one examine this phenomenon? This is the central concern of this study and research of which the results are described here. I was firstly interested in the transformation of the perspective on rationality in relation to decision-making of managers in an organisation, and with regard to the

characteristics of the transformation and the introduction of intuition to the decision-making process, I looked for a tool suitable for the examination of the current character of decision-making of managers. From the perspective of cognitive linguistics, language appears to be a suitable means for exploring human thinking, and it is namely a metaphorical system used by managers when rationalising their decisions that is a source of data for expanding the base of knowledge about decision-making of managers.

**Keywords:** intuitive decision-making of managers, tacit knowledge, explicit knowledge, metaphors, bounded rationality

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## **Why Knowledge Transfer Fails? A Failure Story About Timing and Other Factors**

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**Abstract:** Failure is a necessary by-product of experimentation and being able to identify early failures is important for recognizing where opportunities are, and are not, and for allowing a quick release of resources for more promising projects. This is particularly important for small enterprises suffering from resource limitations but examining own failures is emotionally unpleasant and entrepreneurs usually show aversion to reflect on their unsuccessful experiences. Overall, organizations that are able to learn from failure are extraordinarily rare despite their commitment to do so and, due to the tendency of researchers to focus on successful cases, the possibilities to learn from failure are diminished. This paper takes a look at a failure case of knowledge transfer in the context of a product development process and analyzes the factors that had a negative influence on it. In order to explore this phenomenon, a single case was used and both actors involved, a graphic designer working in the field of creative industries and his client, were interviewed. Secondary data comprising written documents, references and other relevant material, were also collected for data triangulation. We found that keeping time, external opinions and the feeling of ownership in mind, is critical to avoid mistakes during the knowledge transfer process. More specifically, the investigated case seemed to fail mainly due to the propensity of the designer to push the project forward without allowing enough time for the client to process and make sense of information. In this regard, we see how designers face a paradox as they pursue effective knowledge transfer. Ambiguity and contradictions make the development process longer but they are necessary for effective knowledge creation. From a managerial perspective, the identified



factors point some of the areas in which freelancers and their clients must concentrate as they try to avoid unsuccessful knowledge transfer.

**Keywords:** knowledge transfer, freelancers, cultural and creative industries, failure case

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## **The Influence of HRM Practices on KM Capacities in the Indian IT Industry**

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**Abstract:** Successful businesses demand high-performing Human Resource Management Practices (HRMP) and effective Knowledge Management Capacities (KMC) in order to enhance the overall organizational performance. HRMP represent a system that attracts, develops, motivates, and retains employees to ensure the effective implementation and the survival of the organization and its members, whereas KMC are the key factors for gaining and sustaining a competitive advantage by leveraging on knowledge acquisition and knowledge sharing processes. This study intends to investigate the influence of HRMP on KMC, with the final aim to find out the logical connections through which these two concepts meet each other. More specifically, the objective of this article is to identify specific HRMP supporting the development of KMC, with a focus on Indian Information Technology (IT) industry, which is a sector not deeply studied from this perspective. Based on the existing research contributions in this field, five key HRMP (i.e. recruitment and selection, training and development, compensation and reward, employee retention, and career development) and two crucial KMC (i.e. knowledge acquisition, and knowledge sharing) have been selected for this study. The article adopts a qualitative research method based on a single case study of an Indian IT company and uses primary and secondary data collected through desk research and field interviews. Results show how HRMP enhance the individual learning, motivation, and retention for knowledge acquisition and knowledge sharing, with the aim to improve organizational performance. This study provides a twofold contribution: from a research perspective, it contributes to deepening the analysis of the relation between HRMP and KMC, with a specific focus and an applicative case into the Indian IT industry; from a practitioner point of view, the results could be helpful to HR managers for motivating the employees to undertake learning processes, as well as to acquire and share knowledge resources useful for the organization to remain innovative and stay competitive.

**Keywords:** human resource management, knowledge management, human resource management practices, knowledge management capacities, qualitative case study, Indian IT industry

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## **National Knowledge Management: Developing a Comprehensive Model**

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**Abstract:** Knowledge Management (KM) has been widely studied in organizational level, and several approaches have been explored for it. In large-scale and national level, in contrast, only key aspects are briefly addressed, and few models have been presented. This study is to bridge this wide gap. A quantitative research method is employed to collect and analyze data in order to enable fulfillment of the paper's objectives. Fuzzy DEMATEL method is used to achieve causal relations and their extent. General results of the research were positive, leading to excitation of 8 concepts in a large-scale level and one model. Causal relations and the extent of component interrelations were also obtained. Obtained concepts and KM model may be presented as a roadmap to the countries which intend to implement KM in a large-scale mode and exploit its numerous advantages in national level. This research can be served as a milestone for the countries which are currently involved in implementation of KM projects and is possibly one of the first studies that focus on KM model in national level.

**Keywords:** knowledge management (KM), critical success factors (CSF), Fuzzy DEMATEL method, national level

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# Knowledge Management in the Succession Process: The Case of North Portuguese Family Business

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**Abstract:** The aim of this work is to understand the Knowledge Management (KM) in Succession Processes (SP) of Family Business (FB) in the North of Portugal. We propose a theoretical model, which argues that the KM, in the SP, is explained by the interrelationship between the features of the predecessor, the successor and the organization. We focus on the perception of the current manager in relation to the choice of successor, on planning the company's SP, on the successor's skills, on the family's involvement degree in the succession planning and in the company's management. We also focus on the expectations of the continuation of the company in the Transfer of Knowledge (TK) during the referred process. We used a survey with current managers of FB. The collected data by 291 questionnaires was analyzed by multivariate statistical techniques as Confirmatory Factorial Analysis (CFA) and Structural Equation Modeling (SEM), to establish and explain the interrelationships between the predecessor, successor and organization's characteristics that influence the TK and the management of information systems in the succession of the FB. It is verified that the successor's choice, the successor's skill and the family are important antecedents in the explanation of the SP, which, in turn, influence the Knowledge Management Transfer (KMT) and the Knowledge Management Systems (KMS).

**Keywords:** knowledge management, knowledge management transfer, knowledge management systems, overall succession process, family business

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# Intellectual Capital Management Practices: The Case of Malaysian Private Hospitals

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**Abstract:** Intellectual capital has emerged as an indispensable element for enhanced productivity and sustained victory of organizations in this knowledge-based economy. In the healthcare industry, intellectual capital forms the basis for continuing innovation and subsequent performance. Hence, the management of

hospitals needs a sound intellectual capital management in order to ensure their sustainability in a long run. Moreover, the activities of hospitals are generally depend more on intangible resources such as clinical skills, knowledge, expertise, experiences, competencies, doctor-patient relation, doctors' and hospital's reputation rather than physical resources like physical assets. For this study, Malaysian private hospitals were selected to investigate how hospitals are extracting the value of their intangible capital in order to sustain and be competitive. This study aims at providing empirical evidence on the intellectual capital management practices in Malaysian private hospitals. Data was collected from a series of interviews of five private hospitals in Malaysia. Cross-case study analysis was carried out in analysing the data collected to develop patterns found in the evidence. The study reveals that the intellectual capital management in hospital industry is quite unique especially in the human capital management and the relational capital management. For human capital management, clinical staffs' competencies are crucial. Interestingly, physicians are often do not direct employees of the hospitals. This leads to a unique relationship between the hospital and the physicians. Meanwhile for the relational capital management, this study also reveals that there is a unique relationship between the physicians and patients. This relationship will lead to the structural capital of the hospitals. It carries the hospitals' reputations and good names.

**Keywords:** intellectual capital, intellectual capital management, hospitals, cross-case study analysis, interviews

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## **Individual Preference for a Personal Knowledge Management Strategy**

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**Abstract:** Starting from a contingency theoretical perspective, the purpose of this study was to empirically examine whether and how individual choices of a preferred personal knowledge management (PKM) strategy might depend upon the personal knowledge type and context. The investigation was carried by an online survey of software engineering (SE) professionals across a variety of software projects. The findings indicate that the people-orientated strategy was preferred over the document-orientated one irrespective of the project type. In addition, the preferential choices of people-orientated over document-orientated PKM more than doubled for fairly complex projects compared to fairly simple projects. This trend was more prominent for the process- and client-related than team-related knowledge. The findings contribute valuable insights into individual

preferences that contrast organisational efforts to capture and codify project knowledge for reuse and thus warrant further examination.

**Keywords:** personal knowledge management (PKM), document-orientated PKM strategy, people-orientated PKM strategy, personal knowledge, knowledge context or domain

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## Developing a Knowledge Management Strategy for Data Analytics

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**Abstract:** Strategic knowledge management of tacit as well as explicit knowledge is needed as companies attempt to leverage the explosion of data available from external sources, customers, the internet of things and internal business processes directed toward the external environment. Both structured data (explicit knowledge) and unstructured data (tacit knowledge) are increasingly used to provide both tacit and explicit knowledge through data analytics. With the explosion of data has come the realization that knowledge management strategy fulfils a key role in the development of information from data and from information, knowledge. Data analytics is uncovering tacit knowledge that before data analysis techniques of big data had been the reserved for human analysts. From this data and information-derived knowledge the internal company store of intellectual capital flows. This conceptual paper builds on current IT and Big Data strategies to develop an overall *Knowledge Management Strategy* (KMS) that can applied to focus the IT and processing decision resources of the firm on the elements of business and product value creation through Big Data analytics. Big Data analytics creates new connections and uses statistics to gain insights into what decisions are made and what the relationships are to each of a variables or set of variables. The key is access to variables and a question that needs answered with a strategic focus. The research in this paper uses case examples and defines the various terms to avoid confusion over what Big Data is and is not and to enable the concepts to be developed and presented in an overall knowledge management strategic model. Many firms and academic institutions are starting programs using data analytics without also considering the ethical and legal aspects of the intrusion into a customer's data. The model presented also includes the summary of the state of privacy in the USA and Europe as well as listing and describing several companies that ascribe to a code of data conduct. From credit reporting to health of the population, Big Data managed as a knowledge management strategy-expressly stated by the company or organization- is a two

edged sword which may be beneficial or detrimental to the company's operations in the long term. This research describes both aspects from a knowledge management perspective.

**Keywords:** data analytics, big data, strategy, knowledge management, intellectual capital

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## **Invisible Work, Making Visible Differences: Facilitating Transformative Learning Circles**

**Åse Storhaug Hole, Hanne Haave and Inge Hermanrud**

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**Abstract:** The paper addresses the facilitation of experience based knowledge sharing through inter-organizational networking and dialog across the Nordic countries. Organizations nowadays look for ways to facilitate new thinking and innovation to develop their organizations. To stay competitive they need leaders and employees who assimilate, develop and share knowledge (Senge, 2006, Filstad & Gottschalk, 2011). Strategies on Knowledge Management therefore seem more important than ever. The Nordic Council of Ministers has initiated several development programs to meet both global, Nordic and national challenges concerning sustainability, citizenship, inclusion, togetherness and democracy. One of the projects connected to these programs is "Transformative learning circles". This paper focuses on the role of the facilitator in transformative learning processes in this network. Facilitators can apply different roles to activate groups of people to learn through dialogue. This include elaborating existing frames of reference to learning new frames and moreover transforming habits of mind and transforming points of view (Mezirow, 2000, Kitchenham, 2008). We examine how facilitators understand their roles as facilitators and what competences they consider as important for facilitating. A facilitator's role includes both attitudes, knowledge and skills. Our empirical investigation uncovers that there is a delicate balance between leading the discussions and letting the participants run the discussions. The facilitator's work is a kind of invisible when things work out well, but it becomes more obvious if they fail. Research methods were individual interviews, focus group interviews, observation of physical meetings and net meetings. By triangulating different qualitative methods, we consider the validity of the data to be satisfactory (Lincoln & Guba, 1994)

**Keywords:** transformative learning, facilitator role, adult learning, transformative entrepreneurship, knowledge creation

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# Developing a Knowledge Management Roadmap to Assist the User Support Function in Organizations

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**Abstract.** This paper reports from an action case study conducted in a large public organization in Norway. Two stages of an action research cycle were performed comprising (1) diagnosing the current knowledge management (KM) situation in the organization and (2) action planning initiatives for further improvement of KM, particularly for developing the user support function. The study has identified challenges in terms of the diversity of KM systems in use and the help desk staff's voluntary approach to the selection of systems, which have resulted in knowledge redundancy and problems with effective information retrieval and reuse of the right knowledge. Based on previous KM literature and empirical findings, a KM roadmap has been developed. The roadmap includes suggested guidelines and activities to be undertaken across the five stages of the action research cycle when implementing KM initiatives to assist user support in practice. The roadmap utilizes a socio-technical perspective that takes humans, processes, technology, systems, structures, and culture into account when implementing KM. The action planning stage provides several recommendations for how to proceed when implementing the KM measures. Examples are creating awareness of KM among employees, exploring new trends in KM, identifying and formalizing knowledge brokers and communities of practice, developing clear guidelines for using KM systems for specific purposes, and implementing a shared knowledge reservoir to increase the performance of the user support function. The KM roadmap has interesting implications for practice. The study has some transfer value because its findings provide rich insights into KM implementation in a user support context. Experiences from this study can therefore serve as useful examples for similar organizations struggling with KM implementation to improve user support efficiency.

**Keywords:** knowledge management roadmap, KM in user support, knowledge reservoir

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# Knowledge Management Towards a Digitalization era: Systematic Review of Past Research and Future Directions

**Eli Hustad, Polyxeni Vassilakopoulou, Mirza Cirikovic and Endre Koekebakker**

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**Abstract:** This paper presents a systematic analysis of knowledge management (KM) research spanning the last four decades. The analysis is tracing the research paradigms, the theoretical premises and the objects of study of extant research building on the accomplishments of the past to map the key dimensions of KM as a research domain. Furthermore, a number of directions for future research are identified. The review provides a conceptual basis for synthesizing and extending KM research. During the past four decades, KM matured as a domain and its popularity increased for both academics and practitioners. The interest in KM is fueled by digitalization and the turn to a knowledge economy. The systematic analysis of research output over the years reveals the sociotechnical character of KM as shifts in the study of technology and organizations that are closely related to the domain's evolution. A systematic analysis of overarching review papers was chosen as a method that allows to thoroughly delve in the content without compromising coverage. Specifically, the findings reveal the plurality of research paradigms in extant KM research and the diversity of theoretical conceptualizations. Overall, there is a shift from the individual-knowledge focus towards a group-knowledge focus, which is more compatible with networking rather than repository approaches to KM. The objects of study also vary significantly covering technologies, the interplay between technologies and organizations and knowledge trajectories including creation, elicitation, codification, conversion, accumulation, transfer, application, valorization and obsolescence. Future research can be developed to cover underexplored areas and underrepresented theoretical and methodological approaches in extant research and to respond to needs for research on emerging topics related to digitalization. However, returning to the roots of the KM field when practitioners made substantial contributions to KM research may be useful, especially because of the opportunities that new KM technologies offer.

**Keywords:** KM trends, future KM research, KM research paradigms, KM theory

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# The Chicken or the egg: The Relationship Between Knowledge and Business Model Innovation

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**Abstract:** A firm's intellectual capital (IC) is a key resource of organizational creativity and innovativeness whereas knowledge management (KM) comprises organizational and managerial processes and practices that are implemented to leverage IC to innovate and create competitive advantage. Previous research has provided a basic understanding on the relationship between IC, KM and corporate innovativeness as well as performance, but several research gaps still remain. One of the identified gaps is the lack of understanding related to the association between IC, KM and business model innovation (BMI). While this identified gap remains, managers are left without solid understanding and efficient tools to leverage the firm's IC to create competitive advantage through BMI. Previous research has initially identified the main streams that deal with the relationship of IC and BMI and provided an overview on these as well as some major issues that should be addressed by future research in this context (Steinhöfel and Inkinen, 2016). Since KM and IC are closely linked and the importance of KM for corporate innovativeness and competitiveness is acknowledged widely, the consideration of this additional concept in the light of the before mentioned relationship of BMI and IC appears to be promising. Building on this previous research this study expands the scope of the latter contribution by including extant literature that simultaneously addresses the concepts of KM and BMI. This study identifies the findings on the relationship of KM and BMI within extant literature. By combining these with the findings of the previous study on the relationship between IC and BMI, the objective of this study is to provide academics and managers with a framework that combines the specific qualities of IC (e.g. intangibility, social embeddedness), management activities that are tailored to leverage IC (i.e. KM) and several steps of the BMI process to create and capture value. The framework additionally allows the compilation of streams for future research on the intersection of the three concepts, which provide the basis to develop approaches that are useful and expedient in practice. This study demonstrates that there are untapped intra-organizational and extra-organizational IC resources, which should be capitalized within the BMI process. We argue that KM consists of necessary practices and activities to attain the valuable hidden resources, as well as to

manage the IC required and developed within BMI process. The significance of KM and IC in the frame of BMI relates to how capable a company is in coming up with a business model (BM) based on its IC and knowledge competencies and what sort of IC and KM competencies can be gained throughout the BMI process.

**Keywords:** business model innovation, intellectual capital, knowledge management, literature review

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## **A Case Study: The Knowledge Contribution Model and Incentive Mechanism of CALT**

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**Abstract:** Knowledge contribution can be considered as voluntary knowledge accumulation and innovation. Effective appraisal of knowledge contribution can greatly improve the staffs' share will, and boost the circulation and reuse of knowledge assets. As knowledge-intensive enterprise, the China Academy of Launch Vehicle Technology (CALT) has strong and urgent knowledge demand, but because of the lack in knowledge contribution appraisal and incentive mechanism, the "hitchhike" ideas generally exist. This psychology causes low sharing motivation, insufficient knowledge circulation and inadequate knowledge reuse, which inevitably hinders the implementation effect of KM. This paper carried out massive literature review and enterprise survey, analyzed the influential factors, and proposed a knowledge contribution model. This model contains three super dimensions: knowledge creation, knowledge transmission, knowledge application. On the basis, eight sub-factors are subdivided, each of which can be evaluated quantitatively. This paper also researched the incentive mechanism, By learning current researches and practices, this paper builds a suit of incentive mechanism including four dimensions: task target, material incentives, spiritual incentives and organizational environment. The result may be helpful for the form of positive knowledge sharing culture in state-owned enterprises.

**Keywords:** knowledge management, knowledge contribution, appraisal model, incentives

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# Research on the Construction of Knowledge Base Oriented to Aerospace Knowledge Management

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**Abstract:** Knowledge base can store, organize and process knowledge and also is the foundation to provide knowledge services. The construction and applications of knowledge base are essential for the knowledge-intensive enterprises to carry out knowledge management (KM), which can greatly boost the accumulation of knowledge assets and improve the innovation ability of researchers. Due to the difference in knowledge structure and actual demand, each enterprise has its own focus on the design of knowledge base. In consideration of the particularity of aerospace enterprises, this paper puts forward the thoughts of constructing knowledge base for aerospace enterprises from three levels: knowledge acquisition, knowledge processing and knowledge application. In order to achieve the effective acquisition and organization of the first-hand resources, different solutions are adopted to deal with the internal and external resources respectively. On the one hand, for the resources within enterprise, unified templates are used to extract the internal knowledge, which can promote the mutual conversion between tacit knowledge and explicit knowledge. On the other hand, to realize effective and accurate information collection, external resources are collected based on theme crawler. We further put forward the knowledge processing architecture, including text processing system and data processing system, to extract useful knowledge from the first-hand resources. The knowledge processing architecture is studied in this paper based on big data technologies, such as text similarity measure algorithm, word segmentation technology, feature engineering and machine learning, etc. Finally, this paper discusses the possible applications of knowledge base in the field of aerospace through the association mapping of text knowledge and data knowledge. This research may also provide a reference for other military enterprises to carry out the construction of knowledge base.

**Keywords:** knowledge base, knowledge extraction, big data, aerospace enterprises

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# Developing a Knowledge Based Vision for a City

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**Abstract:** An inspiring and compelling vision can help cities and regions to develop knowledge-based capabilities; it can guide future policy making, and it can set a city apart from other cities. In this article, we will apply the theoretical framework of the 'Theory Wave' to suggest how cities can develop a vision that is (1) *participative* as it involves persons from all relevant stakeholder groups, and (2) *future-oriented* as it considers how people imagine their ideal city to be in the year 2030. To illustrate how such a knowledge-based vision development looks like in practice, we present a case study where we worked with around 300 citizens of a small city in Germany to develop a new vision for the city. Given that there is a recent interest in how knowledge management can support regional development processes, we will reflect on the types of knowledge that are involved in such a process.

**Keywords:** organizational learning, vision development, learning from an envisioned future, regional knowledge management, case study

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## Tacit Knowledge for Strategic Advantage: Social Media use of Employees in the Financial Sector

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**Abstract:** The tacit dimension of knowledge is an important area to research due to its complexity. The financial sector as a service provider is characteristically described by the intensity of knowledge its employees carry, which can take different forms and can be communicated from the uncoded to the coded dimension (Rooney et al., 2012). Tacit knowledge in the financial sector needs to be protected, since it forms the competitive base of a firm that is active in the financial sector. Determining how the tacit knowledge is absorbed and transferred will therefore be effective for companies. Removing knowledge

impediments increases the adaptation/absorption of knowledge. Particularly due to the increased use of social media, the risk of knowledge leakage has increased dramatically in recent years (Sarigianni et al., 2016). This task has become more challenging, since tacit knowledge that needs to be protected from leakages also needs to be a part of the inter-employee knowledge sharing system within a financial sector firm in order to become shared knowledge (Serenko & Bontis, 2016). Based on these challenges, the present study focuses on the social media use of employees in the financial sector. The authors conducted a survey with financial sector employees within Cyprus to contribute to the ongoing debate over capturing tacit knowledge for competitive advantage and recognizing potential threats due to the intensive use of social media.

**Keywords:** tacit knowledge, tacit knowledge transfer, tacit knowledge accumulation, social media, financial sector

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## **Company Culture, Knowledge Sharing and Organizational Performance: The Employee's Perspective**

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**Abstract:** Knowledge sharing, as a basic prerequisite for knowledge creation, is a dynamic social process characterized by profound human interactions. The process of knowledge sharing can be supported by organizational culture which is a set of values and norms giving identity to each enterprise. As a valuable element of intellectual capital, organizational culture contributes to achieving strategic business goals. The purpose of this article is to explore the impact of organizational culture, and its axiological, and behavioral dimensions, on knowledge sharing and company performance from the employee's perspective. Human resources are the most critical assets for organizational performance. Their utility under the conditions of network organization depends on to a very high degree of the organizational culture that enhances loyalty, commitment and job satisfaction of employees, encourages knowledge sharing, and as a result, improves the overall organizational performance. The article aims at better understanding the relation between organizational culture dimensions and knowledge sharing and company performance from the employee point of view. For this purpose, the authors conducted a study among Polish employees with different roles and experiences across different industries. The data collected during the study has been analyzed using the equal structural modelling method.

**Keywords:** knowledge sharing, company culture, organizational performance, Hofstede's culture dimensions

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## **Trust, Tacit Knowledge Sharing, Project Performance and Their Managerial Implications**

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**Abstract:** Tacit Knowledge Sharing is increasingly attracting attention of scientists and managers intrigued by their potential application for creating innovative solutions. Project management as a set of methodologies and best practices needs to be charged by knowledge. The research problem tackled in this article refers to a current managerial problem regarding tacit knowledge sharing execution in project based organizations. The objective of the article is to examine the structure of relations between variables such as: Trust, Collaborative Culture, Creativity, Personal Branding, and Tacit Knowledge Sharing. This will allow us to investigate the mechanism of dependencies between the listed variables and diagnose factors which determine Tacit Knowledge Sharing. There are numerous scientific papers indirectly pointing to the relationship between these constructs; however, there isn't a work which would present the above relationship directly in one model. For this purpose, authors conducted a study of 514 Polish professionals with different functions and experience in managing projects in the construction industry. The data collected during the study has been analyzed with an equal structural modelling method. The results indicate that the total effect of Tacit Knowledge Sharing on Project Performance is strongly mediated by Personal Branding and Creativity, and influenced by Trust and Collaborative Culture.

**Keywords:** trust, creativity, collaborative culture, knowledge management, project management, personal branding

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## **Knowledge eXchange (KX): The way of Hybridity in Man-System Symbiosis**

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**Abstract:** The world that opens up to us is made of sensors and big data, making the question of the transformation of data into knowledge a matter of interest for

the entire KM community. A few years ago, the concept of UX was coined to designate "User eXperience", as a way to indicate the capability for machines to take user's expectation into account. Thus, the way to directly connect human to machines is open and the "language" for accessing machines is now more intuitive and personalized. Of note, the user cannot easily communicate about this interaction, as he/she has no words to express what he/she is doing and what he/she is thinking of doing. The problem is even compounded in the case of multi-users interfaces (such as control rooms, crisis situations, decision making process when under severe stress). In these cases, the concept of KX (Knowledge eXchange) is one answer to the question of how to elaborate Knowledge from Data. KX is related to the smallest net of concepts, which is essential to ensure a correct communication between humans in action. Knowledge Management methodologies are the natural base point for exploring KX. French approach to KM considers Knowledge as an object, a commodity that can be described and managed. It is the case for methodologies such as Knowledge Oriented Design (KOD), Methodology for Analyzing and Structuring Knowledge (MASK), or Acquire scientific Knowledge (AsK). Furthermore, semantic networks and the way to acquire, organize, develop and transfer them are also explored. But the story shouldn't end there, and concepts including human communication, the role of the receiver and the idea of Otherness must be taken into account. To illustrate the KX concept, we present here one of its most particularly relevant application domains, i.e. the Command and Control (C2) situation. For the coordination of Military Forces, operations are prepared (commanded) and actions are followed/adapted (controlled). It needs to transform heterogeneous data in collective knowledge. As complementary concepts, UX is indeed appropriate for manipulating physical objects; KX offers a promising perspective for manipulating "mental objects".

**Keywords:** big data, knowledge management (KM), knowledge exchange (KX), theory of communication, command and control (C2)

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# Knowledge Sharing and (in)Security: Towards a Comprehensive View of Managerial Aspects

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**Abstract:** The present study characterizes the global dynamics of academic publications about Knowledge Sharing and Information Security through a research restricted to articles and conference proceedings present in Thomson Reuters Web of Science. It is an exploratory and descriptive study for which techniques recommended by Bibliometrics were used. Thus, during the period established for this study, a total of 78 authors contributed to 28 publications, distributed by 17 titles of journals and 19 conferences proceedings, with almost 60% of these authors contributing with three or more publications. About 60% of the scientific output was the responsibility of Malaysia, Sweden, Iran, Greece and England whose research reaches respectively 18%, 11%, 11%, 11%, 11% of total productivity, showing a great geographical dispersion. However, there is some concentration in terms of scientific journals and research areas, being identified, mostly, the Computer Science, Information Sciences and Engineering areas. Due to this confluence and constant interaction with other disciplines, apparently the field of Knowledge Sharing has not yet crystallized as a theoretical territory. The articles identified related to Knowledge Sharing and Information Security were submitted to a bibliometric analysis using VOSviewer software. This method was applied in two phases, primarily, a descriptive analysis was conducted and then a co-citation analysis was performed recurring to VOSviewer software. The results obtained from co-citation analysis include two clusters, namely: cluster 1 - Information Security and sharing of knowledge under the user's perspective and cluster 2 - Knowledge Sharing and Information Security under the organisation's perspective and translate a gap in terms of research about Knowledge Sharing and Information Security, thus pointing to a path to be explored. There is also the need to foster new research and strengthen the networks of researchers, in order to broaden the framework and theoretical crystallization as an autonomous scientific discipline.

**Keywords:** knowledge sharing, information security, bibliometrics, co-citation analysis

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# Assessment of Human Resources Management Knowledge Workers' Perceptions of Corporate Social Responsibility

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**Abstract:** Employees as knowledge workers play a critical role in planning and implementing corporate social responsibility programmes. Literature indicates knowledge workers' behaviour and attitudes are influenced by their perceptions of their organisation's social responsibility initiatives. Despite its cross-disciplinary nature and potential relevance for human resource and knowledge management practices, corporate social responsibilities have been under investigated in these fields. Hence there is lack of theoretical consolidation and synthesis on the effect of corporate social responsibility on knowledge workers' attitudes and behaviour. The objective of this article was to assess human resource management knowledge workers' perceptions of corporate social responsibility initiatives; using a cross-sectional survey. Corporate Social Responsibility Scale (CSRS) was administered to a convenient sample (n= 171) of knowledge workers in the Human Resources Department of a retail organisation. Descriptive and inferential analyses of the data were conducted. Findings indicate knowledge workers have positive perceptions of social responsibility initiatives in this retail organisation; that are focussing on social and non-social stakeholders, government, employees and consumers. The paper contributes to human resources and knowledge management academic theory. It provides insight for leaders and practitioners in these fields to develop corporate social responsibility policies and practices that positively influence the knowledge workers' behaviour and attitudes.

**Keywords:** knowledge worker, corporate social responsibility, ethical, human resources management, legal, philanthropic, social and non-social stakeholders

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## Creation of Collective Knowledge From Peer Groups in South Korea's Cultural Context

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**Abstract:** The research questions for the study are as follows: (1) Is collective knowledge the sum of that of the individuals who comprise a peer group? (2) Considering the power distance of the state and culture or the in-group consciousness in collectivism, what elements in a peer group affect the collective

knowledge? (3) Do the heterogeneous properties (age, sex, major) among the group members in the context of collectivism work negatively towards collective knowledge? The analysis of the survey results revealed that there was a correlation between the sum of the individuals' knowledge and the total amount of collective knowledge, particularly a positive correlation between the group members' age and specialty (major or the level of individual knowledge) and collective knowledge. On the other hand, the heterogeneous majors of study among the group members showed a negative correlation with the collective knowledge.

**Keywords:** individual knowledge, collective knowledge, peer relationships, national culture

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## **Crowdsourcing and Organisational Learning in Public Organisations: A Conceptual Model**

**Regina Lenart-Gansiniec**

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**Abstract:** In the literature on organisation and management the significance of the citizens' growing expectations and the need for openness of public organisations to their voices are emphasised. Particularly, in recent years one observes demands to treat citizens as clients who are interested in participation in decision making. These tendencies are the aftermath of the ongoing public administration reforms but also the interest of public organisations related to including citizens in creating of new products, solutions, and improvement processes. What is more, there are demands mentioning the need to seek knowledge from various sources since it is pointed out that public organisations should treat organisational learning as priority. It leads to improving, adapting to changing conditions and interested parties' expectations, and creating new solutions. In this approach, crowdsourcing seems to gain significance, particularly considering its potential in the scope of facilitating acquisition of new ideas, contents, data, ways of solving problems, and access to human knowledge resources, which are located outside the organisation. It is suggested in literature that public organisations should also reach for such benefits. Despite the ascertainment in the literature that crowdsourcing contributes to acquiring and sharing knowledge, furthermore constitutes support for the processes of managing knowledge, enables access to it, and allows the organisation to learn - still little is known about the dependency between crowdsourcing and organisational learning. An analysis of previous theoretical articles and performed empirical research suggests that there are still not enough studies on the

significance of crowdsourcing for organisational learning. Furthermore, there is an attempt to combine crowdsourcing with organisational openness to new external knowledge. The aim of the article is proposing a conceptual model, which combines the notion of crowdsourcing and organisational learning. Its assumption is ascertaining of a connection between the crowdsourcing processes and organisational learning processes. A conceptual model is presented, based on a comprehensive review of relevant literature. It may also constitute an introduction to further research on the importance of crowdsourcing for knowledge management processes.

**Keywords:** crowdsourcing, external knowledge, organisational learning, public organisation, conceptual model

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## **Blended learning: How Teachers Best Combine Different Ways to Interact Online**

**Monica Lervik, Hanne Haave, Tone Vold, Ole Jørgen Ranglund and Stig Holen**

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**Abstract:** Students learn best when they are active and engaged. Even when we combine asynchronous and synchronous communication, it is challenging to get the optimal levels of engagement and communication. A number of different ways of creating engagement and interactivity have been tested out including mandatory on-campus seminars, small size groups of students, different types of media and teaching in real time. This paper presents a holistic approach to increase communication and engagement in online teaching by using the blended learning concept. The paper presents different ways of combining on-campus and online teaching. The methodological approach is mainly qualitative. The empirical data is mainly observations, interviews, group interviews and surveys. The respondents are students and lectures. The theory this research rests on is theory on theory on communication and engagement and blended learning. Findings and results are a part of Lervik's PhD work. The preliminary results show that the combination of on-campus and online teaching is preferred and recommended. For some students a blend that also include online learning is what makes taking the course or study possible. Some students have a work and/or family situation that does not allow them to move away to go to a university. A critical factor is to conduct on-campus seminars at the start of the education as this enables the teacher and students to get to know each other and develop the trust required to have the required involvement, engagement and communication. A high level of involvement and engagement will increase the learning outcome from the

subsequent online teaching. The threshold for contacting peer students seems lower for students that have had a personal meeting entering the course or study. The forming of these “communities” is important for their study as learning with and from peers is an important contributor towards an enhanced learning outcome. The blend of learning opportunities provides the students with different approaches that can support different learning styles.

**Keywords:** blended learning, communication, engagement, interactivity, asynchronous and synchronous communication

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## The Importance of Trust and Information Sharing for Integrative Negotiations

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**Abstract:** In the increasingly global and interconnected economy, negotiation processes became a vital part in the political, social, economic, and particularly business spheres, and have evolved over time. Building integrative negotiations relies on trust among the parties, affecting the process of information and knowledge sharing during the negotiation meetings. Trust has emerged as an increasingly important intangible asset in and between organizations, as an intellectual relational asset developed and sustained in interaction between people, forming a foundation for collaboration and co-operation in and between organizations. Through building and sustaining trust (avoiding distrust), organizational intellectual capital and overall business competitiveness can be enhanced. This paper discusses trust as a foundation for integrative negotiations, where strategy and information sharing play a critical role. The research questions are: what role does trust/distrust play in integrative negotiations, and how trust/distrust manifest during the negotiation meetings. Moreover, how trust and strategy affect information sharing in integrative negotiations to reach a mutually beneficial agreement. Empirical findings are presented based on qualitative data from two case studies, covering different contexts - international trade, and contract negotiation within an organisation - and four countries in Latin America, Asia and Europe. The purpose of the paper is to provide insights for further research by empirical findings and practical implications for negotiators and professionals in general.

**Keywords:** culture, information sharing, integrative negotiation, knowledge, meetings, mutually beneficial agreement, negotiation, psychological capital, strategy, trust

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## **Informal Communication in Organisational Management as Motivation for Workers**

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**Abstract:** When we try to understand an organisation, one of the most common mistakes is to consider that the communication flows presented in the official organisation chart represent the communicational life of the organisation. In fact, the understanding of communicational phenomena in organisations is not limited to interpersonal communication, not even to official communication flows and structures. Communication in organisations is composed of formal and informal communication flows and networks. Therefore, the objective of this research is to demonstrate that organisational reality can only be understood if, in addition to official/ formal circuits, we consider the informal communication networks that workers establish. Based upon the available theory on organisational communication, the problem of knowledge that was behind this research was: “Do workers recognise the importance of informal communication networks and do they consider them as a source of motivation?” To answer these questions, we have set the following objectives: (1) to analyse the differences between formal and informal communication (2) to verify the importance of informal communication networks in organisational life; (3) to assess whether informal communication networks contribute to the satisfaction and motivation of workers. It is an exploratory study, carried out through questionnaires applied to workers of small and medium-sized enterprises, through which workers are asked to reflect on the importance of informal communication networks in their organisational day-to-day. In terms of findings, these results are significant as it regards the recognition by workers of the importance of informal communication networks for the proper functioning of the organisational structure and for their motivation and job satisfaction. These results reinforce the importance of informal communication in organisational life, and it is recommended that managers be aware of its importance for the organisation and for the workers.

**Keywords:** informal communication, organisations, management, motivation

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# Overcoming Emotional Barriers for Tacit Knowledge Sharing

**Viktoria Magyar-Stifter**

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**Abstract:** I concluded from previous exploratory research that there is currently no company in Hungary that has not heard of knowledge management. In fact, many are able to isolate tacit and explicit knowledge, while consciously seeking to share only the latter. Answers to questions regarding objections to sharing tacit knowledge are that there is no time for it, not enough money for it, or the classic "the employees are all just gossip, if there are more of them" response. There are a wide range of barriers to knowledge transfer in the literature as explanations as to why the transfer of tacit knowledge is not encouraged, in addition to "our organisation is not ready for knowledge sharing". However, what is overlooked is that one of the conditions for success during knowledge sharing is a human factor: staff attitude. After all, the sharing of tacit knowledge is voluntary in most cases and thus stems from the intrinsic motivation of participants. The organisation is able to influence employees to have a positive attitude about knowledge transfer and motivate them to satisfy higher order needs. If an organisation intends to increase employee satisfaction, they can promote cooperation and team tasks and communicate a clear vision, that is, emotional intelligence. In this paper, I deal only with the latter in detail. What kind of individual and group capabilities should companies have to build their competitive advantage based on the knowledge of individuals? What is more, I wish to project that companies need to operate more successfully. How can company's employees' satisfaction, positive attitude, and work efficiency be increased for better performance. How can emotional intelligence be improved for more success? To answer these questions, I intend to examine the emotional competences of companies in North Transdanubia with empiric, quantitative and qualitative methods, a basket of typical competences that are characteristic of emotionally intelligent companies, and its effect on a company's knowledge transfer processes. I intend to prove the relationship of factors involved in the design of corporate emotional intelligence by investigating hypotheses and then placing the established model within the known family of emotional intelligence models. Finally, I will also investigate the knowledge transfer processes of emotionally intelligent companies.

**Keywords:** emotionally intelligent organisation, tacit knowledge sharing, organizational culture

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# Creating or Using Various Knowledge Representation Models and Notations

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**Abstract:** There are many knowledge representation (KR) languages (KRLs), i.e., many KRL notations and KRL abstract structure models. They suit different needs. E.g., knowledge modeling and sharing require expressive and concise KRLs to support and ease the entering of precise knowledge. Many KRLs are more suited to knowledge exploitation with computational tractability constraints. Current KR-based tools – including KR translators – allow the use of only one or few KRLs, and hardly allow their end-users to *adapt* these KRLs to their needs, e.g., the need to exploit even ad hoc KRs. Indeed, some *systematic* ad hoc usages can be automatically interpreted. Finally, it is difficult to compare KRLs and KRs according to criteria or KRL related best practices. The approach presented in this article addresses these problems by answering an *original* research question: “can KR import or export methods be specified in a *generic* way and, if so, how can they and their resources be specified?”. The approach is based on an *ontology of KRLs*, hence on KRs about KRLs. It is here named KRLO. It has three original features: i) it represents very different KRL abstract models in a uniform way, ii) it represents KRL notations, and iii) it specifies methods for importing and exporting KRs, and hence also translating them. This article presents principles and uses for this approach. We have built Javascript functions and tools that import and export KRs by exploiting KRLO and a parser generator. For these tools to use new KRLs or KRL presentations, their end-users can add or adapt specifications in KRLO. Other tools can use these tools or functions as Web services or modules. No translator between each pair of KRLs needs to be written. At least for export purposes, KRLO can *also* be exploited via inference engines for OWL2 or Datalog, or via simple path retrieval mechanisms, e.g., via SPARQL queries.

**Keywords:** knowledge representation, importing, translation, exporting and sharing

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# A Long-Term View of Knowledge Agents as key Enablers of Environmental Knowledge

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**Abstract:** Knowledge agents are individuals who contribute to the transformation and exchange of knowledge and who make active use of the knowledge derived from relevant information. From a hotel perspective, knowledge agents are individuals who can provide external and internal information to deal with environmental issues. In this paper, customers, managers, employees and tour operators/travel agents who are responsible for hotel operations are referred as 'knowledge agents'. These agents develop and enhance their own knowledge and that of the organization in order to ensure that appropriate actions are taken to deal with environmental issues and potentially enhance the environmental knowledge of the firm. This study examines the role played by knowledge agents as key enablers of the processes of creating and updating the environmental knowledge of an organisation. The paper also examines the relationship between environmental knowledge and business performance. These relationships are examined through an empirical study of 87 companies in the Spanish hospitality sector. The results of the study indicate that the role played by knowledge agents at any given time (T) not only is significant in predicting environmental knowledge at that time but they also play a significant role in updating environmental knowledge at a later point in time (in this study T+6 years).

**Keywords:** knowledge agents, environmental knowledge, hospitality industry, performances and time

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## Exploring Service Design as an Emerging Organizational Capability

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**Abstract:** This empirical paper examines a process, starting with the managerial decision to make service design an organizational capability, and following it as it unfolds over time within one organization. Service design has become a well-



established business practice of how firms create new products and services to promote differentiation in an increasingly uncertain business landscape. Implicit in the literature on service design are assumptions about strategic implications of adopting the prescribed innovation methods and tools. However, little is known about how service design evolves into an organizational capability enabling firms to transform their existing businesses and sustain competitiveness. Through a longitudinal, exploratory case study of service design practices in one of the world's largest telecommunications companies, we explicate mechanisms through which service design evolves into an organizational capability by addressing the research question: *what are the mechanisms through which service design develops into an organizational capability?* Our study reveals the effect of an initial introduction of service design tools, identification of boundary-spanning actors and co-alignment of dedicated resources between internal functions as well as through co-creation with customers. Over time, these activities lead to adoption of service design practices, and subsequently these practices spark incremental learning throughout the organization, alter managerial decisions and influence multiple paths for development of new capabilities. Reporting on this process, we are able to describe how service design practices were disseminated and institutionalized within the organization we observed. This study thus contributes by informing how service design can evolve into an organizational capability as well as by bridging the emerging literature on service design and design thinking with established strategy theory. Further research will have to be conducted to confirm if the same mechanisms are observable across contexts and in other firms, and several future research directions are identified. In addition, the study also has implications for practice as it demonstrates how service design methodology can be implemented and have strategic implications for organizations.

**Keywords:** capability development, design thinking, organizational capabilities, service design practices, strategy-innovation link

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## Knowledge Management and Labour Retention: An Empirical Study

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**Abstract:** This study focuses on exploring how knowledge management topic is linked with labour retention. Thus, the main objective of this research is to

understand how knowledge management (KM) influence the retention decision of expatriates after an international assignment (i.e. repatriates) within the organisation. Although the knowledge management literature has started to emphasize the role of knowledge management on employees' retention, remains unaddressed the relationship between the knowledge management and repatriates' retention. This concern is increasingly present on the agenda of Portuguese organisations given their recent need of growing internationalisation. Related with this issue, it is important to pay attention to employees involved in international assignments, especially in the period after returning to their home organisation (i.e. repatriates). However, empirical evidence in literature of this relationship is scarce. Therefore, this study was conducted with nine organisations aiming to understand why repatriates remain within home organisation upon their international assignment, underlining what factors associated with knowledge management increase the willingness to stay. Data were gathered from organisations of different business sectors operating in Portugal, in a set of 42 repatriates and 18 human resource managers through semi-structured interviews. The results show that in general repatriates remain after returning to their home organisation. Although, (i) when organisations value the knowledge acquisition (i.e. experience, knowledge and skills acquired) upon the return, the repatriates remain satisfied. In contrast, (ii) when their home organisation does not value the knowledge acquired the repatriates also stay but dissatisfied. Furthermore, the results also suggest that the type of knowledge acquired or transferred plays a central role in promoting the willingness in remaining satisfied after repatriation. Thus, the repatriates' retention will remain a problem and the satisfaction of repatriates will be the key challenge for organisations. Finally, this study suggests further research possibilities in this area and provides guidelines to managers in order to potentiate the retention of their repatriates within the organisation.

**Keywords:** knowledge management, retention, repatriates, employee satisfaction, Portuguese organisations, qualitative study

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# Intellectual Capital Management as an Indicator of Sustainability

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**Abstract:** Given pressing economic and environmental challenges, organizations and governments need to undertake efforts to achieve sustainable development. In this context, intangible assets management and, specifically, Intellectual Capital (IC) and Knowledge Management (KM), became generally acknowledged Innovation factors. Assuming the existence of a cause-effect relationship between IC management and innovation (the most innovative countries are also those with a better IC management and vice versa) the purpose of this exploratory study is to search for empirical evidence of a possible relationship between Intellectual Capital (IC) management, competitiveness and sustainability. In other words: Does the countries with the best intellectual capital indicators show also better indices of competitiveness and sustainability? Having this target in mind we built an exploratory model for those relations and estimated it using data from National Intellectual Capital (NIC) and Sustainable Society Index using a multivariate time series covering years 2006 to 2016 for variables Human Wellbeing, Environmental Wellbeing and Economic Wellbeing using descriptive multivariate data analysis techniques and PLS path modelling as the main supporting methodology. In terms of originality, this empirical study aims to contribute and stimulate data driven discussions about the factors that determine the sustainability of these countries, aiming the formulation of policies and strategic planning.

**Keywords:** intellectual capital, innovation, competitiveness, sustainability

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## Analysis of Information Security in *Cloud Computing* Contexts among Portuguese University Users

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**Abstract:** The interconnection between information systems is a way of promoting communication and sharing of information and knowledge of any order, which the careless sharing forms a real danger to the well-being and

citizens personal safety as well as the organizations economic and financial security. In this sense, our purpose is to verify, among university students, if the sharing of information and/or knowledge in the cloud computing services (CCS) is careless and clueless of possible personal consequences. Methodology: Based upon the available theory, we present some key propositions. First, do students rely on the security of information stored in the cloud? Based on this our objectives are (1) to analyze the problem of individual behavior around sharing knowledge and information in the cloud; (2) assessing the users confidence in the provided CCS; and (3) to define an information security index of different CCS from university students perspective. It is an exploratory study, held in the university context, with a sample of 284 students. The questionnaires were applied into different groups of graduate students (bachelor, master and doctorate) in order to significantly increase the radiographic perspective of the phenomenon of information security culture in CCS. We found significant support to our initial expectations, e.g., although individual behaviors of sharing data is very similar, we have observed variations in confidence in CCS according to students gender, age and academic background. The results reinforce the need for continuous awareness of the youngest to some risk behaviors that should be avoided with regard to sharing of knowledge and information showing that IT are useful and reliable since applied carefully and consciously. This empirical study appears to be the first to examine the interface between trust, cybersecurity and knowledge management among Portuguese university students.

**Keywords:** cybersecurity, information, information security, knowledge management, trust and cloud computing services

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## **Knowledge Management for the Co-Creation of Resources for High Ability Students**

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**Abstract:** By implementing different processes and drawing on experiences, organizations generate knowledge with which to gain benefits. In educational organizations such processes seek to transmit knowledge to students so that they can then apply this to different fields such as science, art, music, human relationships, etc. These processes, along with any previously accumulated experience, need guidelines as to how to store them so that the organization can benefit from this knowledge at a later date when it, for example, creates content. Thus, Knowledge Management allows an organization to learn from its previous

mistakes by generating so-called lessons learned. The use of these lessons helps to determine which tools or resources to choose or what decisions to make when engaged in an activity that will have real value for the organization. This paper analyses KM in educational organizations in a specific context: the co-creation of learning resources for high ability students. While these students give brilliant answers and their cognitive, creative and artistic capabilities are more advanced than those of their peers, in many cases they often experience problems with their motivation in learning. At the same time, the educational organizations have difficulties in being able to take advantage of the data and information they have about their students and their learning process in order to help them to be more motivated and to develop their abilities. To identify how KM can help these students we first evaluate the relationship between KM, education and co-creation and then describe how Information Communication Technologies (ICT) can support knowledge management in an educational organization. Next, we characterize high ability students and look at how they learn and act in different situations to identify how KM can facilitate their education. Finally, we present a Knowledge Management System (KMS) designed to support the co-creation process with high ability students based on managing specific roles, developing Personal Learning Environments (PLE) and using the Human Computer Interface (HCI).

**Keywords:** knowledge management, high ability students, co-creation, learning resources

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## **Reconsidering the Knowledge Ecology in Fashion Industry: A Metaphorical Approach**

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**Abstract:** Creative industries have seen a growing academic, in which the vast majority of the literature has concentrated on the physicality of the environment and their locational accumulations. Recent studies have intended to describe the existence of creative industry structures through economic and political perspectives, and physical planning. In contrast, there is much being interest in the question of how the inner dynamics and nature of creative industries operate and respond to the given knowledge environment. Nevertheless, the nature of their organizational structure is equally worth studying. In the present study, the ecosystem of creative industry structure is considered as being the creative-based and knowledge-intense activities of the fashion industry. The study aims at investigating how the fashion industry operates as an ecosystem.

Methodologically, the present study engages significant ecological characteristics widely used in the theoretical and applied fields of business ecosystems, ecosystem management and creative ecology, and attempts to integrate some of these perspectives into the fashion industry, through a formulation of an innovative metaphoric approach. The ecology approach is here based on the application of appropriate scientific methodologies, focused on levels of biological metaphor of organization that encompasses the essential processes and interactions among organizations, and their environment. In such a metaphorical approach, factors in changing ecological concepts, diversity, interaction, competition and evolution are employed and evaluated with insights from the particular ecosystem of fashion industry.

**Keywords:** creative industries, fashion industry, knowledge ecology, business ecosystem, ecosystem management

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## **Inter-Organizational Knowledge Sharing Barriers Within an SME Network: A Case Study**

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**Abstract:** SMEs often seek to supplement their scarce resources and limited knowledge base by networking. This calls for efficient knowledge sharing within the network, which is, however, often complicated by the existence of knowledge barriers. This paper seeks answers to the question “what are the knowledge barriers that hinder inter-organizational knowledge sharing in SME networks?” The issue is empirically examined through a case study that was carried out by the participative observation research method. The case is a network consisting of SMEs whose joint objective was to increase the companies’ capabilities in digitalization by sharing knowledge within the network. The paper concludes that companies’ ability in sharing knowledge within a network vary greatly due to, e.g. varying needs concerning the level of knowledge pursued from the network, imbalanced knowledge base, and cognitive proximity/shared interests of the network companies. Firstly, some companies’ goals may be acquiring highly specialized knowledge from the network, while others are potentially interested in harnessing rather general level knowledge. Secondly, those companies that have a broader/deeper knowledge base than others may protect their knowledge more carefully. Thirdly, the lack of understanding the value of knowledge may also lead to unwillingness of sharing knowledge with others, or, vice versa, not being able to utilize the valuable knowledge shared by others. Based on the

empirical findings we can conclude that companies that share the same information needs and do not settle for merely sharing knowledge with each other go beyond the typical knowledge sharing and proceed to develop the issues of mutual interest via deeper dialogue.

**Keywords:** inter-organizational knowledge sharing, knowledge barriers, SME network, case study

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## Learning Habits of Generation Z Students

**Ludmila Mládková**

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**Abstract:** The paper is dedicated to the learning habits of generation Z. This topic is a part of the research on specifics of generation Z students at the University of Economics in Prague. The paper discusses the type of media and materials students use to learn, the learning methods they prefer, their ideas on the academic environment and typical academic pedagogical processes. It also pays attention to questions of knowledge sharing between fellow students. Generation Z is the first generation that grew up in the world of developed ICT technologies and in the digitalised world. It is perceived that modern ICT means are natural tools for this group of young people and shape the way they understand world around them, how they learn, communicate and also influence their values and priorities. Due to their relationship with modern technologies, generation Z is perceived to be different from previous generations. These days, older representatives of generation Z attend universities and start their professional life. As academicians, we are in daily contact with students of generation Z and this everyday work with them indicates that their learning habits change. In other literature, representatives of generation Z are characterised as confident, of high self-esteem, aware of the latest trends, are tech savvy, early adaptors of technology, bright, and globally connected. They like to interact through media and the virtual world is a natural environment for them. They are used to short well structured text and videos. At school, we see that some students of generation Z have problems with reading longer and more complex text, their span of attention is short. They can collect information but often miss the context in which the information should be interpreted. In our research, we try to discover which of the generally shared ideas on generation Z are true and which are false. Part of our research focused on the learning habits of generation Z helps us to understand the specifics of our students of this generation and adjust our pedagogical methods to them.

**Keywords:** Generation Z, learning, generation Z specifics, stories

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## **Evaluating Factors Affecting Social Media Adoption as a Knowledge Sharing Instrument Amid #FeesMustFall campaign**

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**Abstract:** In the innovation-driven age, the use of social media technology has grown immensely, primarily for the purpose of social engagement between friends and acquaintances. Social media is amongst other key tools for knowledge sharing used by large companies to engage with their clients through public relations and marketing department. The researchers hypothesize that social media could have the same effect in the educational system as it does in the corporate level for the purpose of knowledge sharing amongst students. This study investigates factors that influence the adoption of social media technology by students from the two Durban-based Universities of Technology (UoT) in South Africa. This quest has been necessitated by the #FeesMustFall campaign which began in 2015 and 2016 by students from universities across the country. The university environment was at the peak of vulnerability in terms of security and safety and students could not attend lectures. Social media are hereby considered a safe platform to enable the teaching and learning process. Therefore, a questionnaire was administered to Marketing students in the two Durban-based UoT. A correlational analysis revealed that factors such as performance expectancy, educational background, economic status, social influence facilitating condition have multi-collinearity effect on the dependent variable, Facebook adoption. Therefore a combination of these factors should be manipulated and managed collectively by an instructional designer to enable knowledge sharing amongst students.

**Keywords:** technology adoption, #FeesMustFall, economic status, performance expectancy, instructional design, educational background

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# Open Knowledge-Aware Academic Management Systems

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**Abstract:** Knowledge Management (KM) has traditionally employed knowledge representation techniques dealing with rather coarse representational granularity, aimed at providing knowledge assets in the form of various types of human-readable contents typically distributed through Content Management Systems for which the "management" aspect takes priority over the "representation" aspect. However, the adequacy of knowledge representation for targeted KM use cases may limit or open possibilities regarding the deployment of KM systems. The technological space established by the Web 3.0 paradigm provides opportunities of interplay between the principles of Conceptual Modelling, the increasingly popular Open Knowledge graphs (as knowledge assets that are both machine-readable and easily distributable in a Web 3.0 environment), and use cases or requirements raised by KM practices. This paper is motivated by a common academic management case identified in a Romanian University, where isolated data silos and knowledge assets are redundantly multiplied in various representational forms due to non-integrated and incremental development of Academic KM systems. Consequently, the reporting of various academic KPIs and results (publications, projects, visibility) is redundantly performed over multiple systems that lack cross-checking and reuse mechanisms. On the other side, the Web 3.0 paradigm offers now increasingly popular knowledge assets such as open knowledge graphs (e.g., Google's Knowledge Graph, Facebook's Open Graph, DBPedia) and various actors in the academic publishing sector are already experimenting with opening public knowledge of machine-readable granularity for automated consumption and linking across what is informally named "the Giant Global Graph". Driven by such opportunities, we have investigated the case of Springer's LOD service and the possibilities of integrating an Academic Management System with the public knowledge to be made available through this service. From a representational and granularity standpoint, these knowledge assets are typically built with the help of the Resource Description Framework (RDF), its multiple distribution/retrieval mechanisms (e.g., SPARQL and HTTP) and representation formats (e.g., JSON-LD, Turtle). The paper will offer a brief introduction to the technical aspects underlying this framework, as well as details on deploying it to improve an Academic Management System towards a more efficient integration of knowledge assets.

**Keywords:** academic management systems, knowledge graphs, resource description framework

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## Managing Knowledge in High Technology Firms

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**Abstract:** In this paper, it is attempted to develop a better understanding of the challenges and strategies of knowledge management within the innovation process in high technology firms. The paper aims to explore knowledge management processes and practices in firms that are engaged in the new product /service development programs. Consistent with the exploratory character of the study, the research question is: How is knowledge integrated, sourced and recombined from internal and external sources for innovation and new product development? The research took an exploratory case study approach and developed a theoretical framework to investigate the knowledge situation of knowledge-intensive technology firms. Equipped with the conceptual foundation, the research adopted a multiple case study method investigating four diverse Australian technology firms from IT, biotechnology, nanotechnology and biochemistry industries. Overall, findings indicate that building effective and adaptive IT systems to manage and share knowledge in the firm is one of the biggest challenges for these small firms. Also, there is little explicit strategy in small knowledge-intensive firms that is targeted at systematic KM either at the strategic or operational level. Therefore, a strategic approach to managing knowledge for innovation as well as leadership and management are essential to achieving effective KM. In particular, research findings demonstrate that gathering tacit knowledge, internal and external to the organization, and applying processes to ensure the availability of knowledge for innovation teams, drives down the risks and cost of innovation.

**Keywords:** knowledge management and strategy, high technology firms, tacit knowledge, innovation and knowledge

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# An Academic Knowledge Management Model: Multiple Case Studies in Peruvian Universities

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**Abstract:** Universities' knowledge management processes are critical to accomplishing their role of integrating individuals and countries in the competitive global knowledge economy through teaching, research and technology transfer (Sam and Van der Sijde, 2014; Welch, 2011). This role is particularly critical for universities in emerging economies, like Peru, that seek to integrate into this knowledge economy by diversifying their economies and reducing dependence on raw materials exports (Ministerio de la Producción del Perú, 2014). To do so, the article proposes an academic knowledge management model for Peruvian universities that integrates their processes and key actors. The authors analyzed current academic knowledge management models at five Peruvian universities using multiple case study methodology. The universities are among the highest ranked Peruvian universities in the QS University Rankings: Latin America (2016), such that the resulting model is applicable to universities in Peru and other emerging economies. The data collection protocol was validated by experts using the Delphi method and pilot tested at a sixth university. The results indicate that knowledge at these universities is managed intuitively or by tradition, not in a way that systematically integrates processes and participants. The critical success factors to managing academic knowledge effectively were identified as qualified staff, responsible and committed to research; engagement and commitment from senior management; an organizational culture that encourages knowledge creation, sharing and use; and staff attitude and learning ability. The research also identified criteria that measure the model impact in terms of its stages (creation, exchange and use) and university processes (teaching and learning, research, and transfer of services to society). The article concludes that the model is applicable to the current knowledge management practices identified in the case study and includes basic components (planning, management processes, principles, methods, technologies, etc.) in a system whose indicators fulfill the university mission and goals

**Keywords:** knowledge management models universities, case study, Delphi methodology, Peru

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# Knowledge Management System for Governance: Transformational Approach Creating Knowledge as Product for Governance

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**Abstract:** Knowledge is power, when managed efficiently generates optimum outcomes. Knowledge Management is an established phenomenon, applied across various disciplines for transformational growth. In the year 2015, the Government of India launched Digital India Programme with the vision to “transform India into a digitally empowered society and knowledge economy”. The Programme aims to benefit every section and sector of the country by creating an ecosystem for delivery of user centric and qualitative digital services. It weaves together a large number of ideas and thoughts into a single, comprehensive vision so that each of them is seen as part of a larger goal. This shift needs considerable enhancement of capacities for visualizing, conceiving and delivering projects aimed at transforming existing systems. This demands knowledge of domain as well as technical and techno-commercial-legal capabilities in different levels of Government officials. Above all, it requires a basic change in the outlook and functioning of Government, so that it becomes citizen-centric rather than process-centric. Moreover, the implementation of numerous e-Governance projects in the country requires specialized professionals who have requisite skills and knowledge in the respective areas. With over 40 Mission Mode Projects (MMPs) in different stages of planning and implementation, various levels of Government officials are involved in different e-Governance projects and they require a deeper understanding of several components to enable them perform effectively. To foster such knowledge economy, Capacity Building Scheme Phase II (CB- II Scheme) has been approved under Digital India Programme with one of the key components being ‘Knowledge Management (KM) in the area of e-Governance. The National e-Governance Division (NeGD) is the central agency for implementation of Capacity Building Scheme which is aimed at providing technical and professional support to Government at policy and decision making level and to develop specialized skills under e-Governance programme. This paper highlights the multi-dimensional aspects of deploying KM for e-Governance such as the need for KM in a Federal Government system, along with its key objectives, core features moving on to framework and implementation structure.

**Keywords:** knowledge management, Digital India, e-Governance, capacity building, public sector, collaboration

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# 10 Years After: An Update on the Role of Knowledge Management in Logistics Companies

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**Abstract:** In today's society, it is widely considered that knowledge is the main tool for economic success. Knowledge Management (KM) is the science and activity that analyses and develops that success. However, the level of implementation of KM in order to unlock the developmental potential of knowledge in companies is widely varying between industrial sectors. A decade ago we investigated KM implementation in logistics companies relating investments into knowledge and returns from those investments by means of multivariate regression. Results from this empirical impact study showed a contradiction between the role of knowledge and the implementation of KM in this sector. Since then, society, global economies and companies have developed further; the logistics sector is facing a lot of new challenges. Therefore, we think it is time to repeat the study. Against this background, the paper presents a methodology to be implemented in a multi-national and cross-cultural study addressing the implementation of knowledge management in the logistic sector. Based upon a review on literature and statistics the paper puts together ideas from different fields (KM, logistics and Human Resource Development) to build a new framework of analysis. The scientific interest and importance of the paper is twofold: first it develops the concept of national, cross cultural and comparative KM; second, it presents a methodology ready to be used and tested. Main focus is put on comparing KM situation in logistics companies ten years ago and now, identifying changes and their drivers, and understanding influences like country, culture or state of economic development.

**Keywords:** knowledge management, comparative national evaluation, investment, impact, logistics

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# A Knowledge Management Perspective on Emergency Plan Management

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**Abstract:** Emergency plan management concerns organizations and communities worldwide that need to respond to emergency situations efficiently. Several models have already been proposed to represent knowledge in the emergency domain, but in practice planners still base emergency plans on their own technical background and experience and taking into account the legal requirements of the country concerned. Current frameworks for plan development do not integrate emergency knowledge and the emergency planning process in order to generate better emergency plans. In this context, we developed the QuEP framework for the assessment and improvement of emergency plans and their management in organizations. Following the QuEP maturity levels, the ability of planners to build better plans is continuously improved, as is the performance of the activities involved in the emergency plan management. In this paper, we propose a knowledge model for emergency plan management based on the QuEP framework. The inclusion of a knowledge model in QuEP that combines contextual and non-contextual knowledge in an emergency allows organizations to improve their emergency plan management. On one hand, we obtain a (semi)automatic assessment of emergency plan management using the knowledge included in the emergency plan. On the other hand, our proposal provides more knowledge to the decision-making process during an emergency. A more detailed study on different activities related to the lifecycle of emergency plan management can be carried out to provide more information on the actions to be performed by the different stakeholders involved (organization, planners, workers, responders, and citizen). Finally, including knowledge management also has other benefits, such as improving context-sensitiveness, information dissemination and contextual information in decision-making, as well as increasing stakeholders' awareness, updating and maintaining current emergency plans, and improving audit processes. Knowledge management therefore adds value to the creation of emergency plans and their management and improves an organization's emergency management maturity level.

**Keywords:** emergency plans management, knowledge management, contextual knowledge, maturity levels

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# Framing the Externalisation Phase of Knowledge Creation in an Organisational Setting

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**Abstract:** Organisational knowledge can be defined as specific knowledge that a firm possesses and uses to add value to the incoming factors of production in a unique manner, while organisational knowledge creation can be described as the process of eliciting, harnessing and amplifying knowledge created within the individual and linking this newly codified knowledge to an organisation's existing knowledge system. The strategic use of this newly codified knowledge can provide an impetus for innovation and, if difficult to replicate, a firm can lever its use to gain competitive advantage. This paper explores the externalisation phase of knowledge creation, with specific focus on the articulation of tacit knowledge into explicit form in an organisational setting. Acknowledging how the process of converting tacit knowledge to explicit knowledge can be difficult, studies have shown how externalisation significantly increases perceived organisational knowledge satisfaction and suggest that this is an area where improvements in the conversion process are required. Based on the foregoing call for research, the aim of this paper is to contemplate the ways in which organisations manage the externalisation phase of knowledge creation in order to harness organisational knowledge. The paper identifies both articulation enabling conditions and externalisation enabling conditions based on the extant literature. Guided by the literature review, the researchers present an externalisation phase framework for organisational knowledge creation, representing the flow of tacit knowledge through the articulation process that leads to explication of said knowledge in an organisational setting. Next steps are proposed in relation to the exploration of the proposed framework in the production sector.

**Keywords:** knowledge transfer, organisational knowledge creation, externalisation of knowledge

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# The Influence of Individual and Organisational Factors on Knowledge Sharing Behaviour

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**Abstract:** As economies shift from industrial to knowledge-based economies, the importance of effective knowledge management is arising. Nowadays organisations no longer compete on the basis of financial capital and strength. Organisations have to cope with continuous changing, thus focusing on innovation and revolution seems to be inevitable. One basic objective of knowledge management is to support organisations' value-creating activity and to increase efficiency. The significant part of the knowledge - possessed by an organisation - belongs to the knowledge workers. Thus, it is important to understand what encourages - and what holds them back from - sharing their knowledge. Employees' willingness to share knowledge can be influenced by several factors like people behaviours, motives and characteristics or position, time spent at the organisation, size of the organisation, etc. The aim of the research is to better understand the factors that affect decrease or increase participation of employees in the process of knowledge sharing within organisations. This paper analyses various individual and organisational factors that affect knowledge sharing behaviour and its factors: Altruism, Reciprocity, Reputation, Loss of knowledge power and Organisational reward. Individual factors involve general demographic characteristics i.e. gender, age/generation, position, education. Organisational factors that are examined regarding knowledge sharing behaviour are industry, size (number of employees) and tenure (time spent at the organisation). The research has been carried out among 238 Hungarian employees (top managers, middle managers, white-collar workers and blue-collar workers). Results show that among individual factors, differences can be identified regarding generation and position, while gender and education do not seem to influence knowledge sharing behaviour. Regarding organisational factors, differences can be detected according to the size of the organisation. Results have practical implications for the design of managerial and organisational measures that would provide knowledge sharing in a more efficient manner and in accordance with the long-term strategic goals of the organisation.

**Keywords:** knowledge sharing behaviour, individual and organisational factors, altruism, reciprocity, reputation, loss of knowledge power and organisational reward

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# The Dynamics of Business Knowledge as Societal Meaning for Creativity in Teams

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**Abstract:** The purpose of this paper is to investigate how tacit and explicit knowledge is developing and transferred in a team setting. The research question is: How do we transfer individual and collective tacit knowledge into collective actionable knowledge in a project team? The methodological approach is a longitude study of two teams. The teams are from a Norwegian and a Swedish furniture manufacturer. The purpose is to come up with a complete design of innovative and functional new furniture. Each team has seven members. Designers, production engineers and sales people. We conducted 28 interviews 6 and 18 months after the work started. We summed up our results for the teams and had a one-day session after they completed their task. They started out as an ordinary team but decided for the rest of the time to rotate all professional roles and also to mix the roles in such a way that an insider in the position had to work together with an outsider. The transfer between the knowing modes worked the first year slowly but worked fast the nest year. The switching between the knowing modes back and forth worked giving the possibility to share and transfer tacit knowledge into explicit knowledge. The mechanism of rotation was the driving force for the transfer and sharing of the knowing modes making them into working collective knowing. The teams ended up as high-performance teams delivering complete design specs two and four months before the time limit. The rotating role mechanism and the team socialization were the main reasons for this fast track delivery. We found that the socialization process represents mostly tacit knowing. It cannot be planned and designed. The team members have to make it their way in their pace to get the sharing and transfer of knowledge needed. The theoretical implication of this study is that we have found a workable way of moving individual and collective knowing into explicit knowledge. The practical implication of this study is that rotating professional roles within a team works if the team gets the required time to develop their socialization process. We have to allow experimentation to get creativity and innovation.

**Keywords:** knowing modes, tacit knowledge, knowledge sharing, innovation, teams

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# A Framework for Evaluating Social Media and its Practical Application

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**Abstract:** Social media use inside enterprises has become a hot topic. However, it seems that the role that social media plays in organizational life is still not very well understood. An examination of the current state of enterprise social media (ESM) reveals two rather opposing phenomena: On the one hand, usage of ESM increases steadily. On the other hand, however, their penetration is still low. This can be partly attributed to the fact that still no consensus exists on how to evaluate ESM. Despite the existence of some evaluation frameworks, there is a lack of practical experience in their application. The current paper presents a framework for evaluating ESM. It is based on a mixed-method approach that combines logfile analysis with online questionnaires, interviews, and content analysis. The framework is applied to a real-world case. In February 2013, Festo, a leading company in the field of automation technology that employs around 18,700 people worldwide, started a project called Connect! whose main objective has been to determine the effects of introducing an enterprise social network (ESN) at Festo. Two surveys (with a total of 130 participants), 10 semi-structured interviews, log file analysis, and an examination of individual contributions that are of (theoretical) interest yielded the data on which the subsequent evaluation was based. Noteworthy findings are: People are willing to address (potentially) controversial topics and to engage in longer discussions. Being able to share information quickly is a key asset. In contrast, information overflow seems to be hardly an issue. Instead, the biggest concern is that the use of ESM in addition to existing tools will decrease their productivity. This case study contributes to the existing literature on enterprise social media not only by presenting a framework for evaluating ESM but also by demonstrating its actual application, thus advancing current understandings on the role that ESM play in organisational life.

**Keywords:** enterprise social media, enterprise social network, evaluation, framework, case study

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# Institutions of Scientific Knowledge Generation in Regional Economic Systems

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**Abstract:** The institution of the university comprises one of the most important actors within national, regional or metropolitan economic systems. Typically, metropolitan universities are seen in terms of components of the respective national economic system. However, the object of our research is the institution of the regional university, which is defined in terms of a regional economic actor. There are various models for analysing the impact of universities on the regional economies. Several studies have studied this phenomenon in terms of providing employment, increasing expenditures and exporting educational services to other regions. However, in emphasising the role of universities in regional economies within the knowledge economy, most contemporary researchers consider the university as a major producer of scientific knowledge. Different "helix" models and models of university engagement are constructed in the context of this position. In order to overcome problems concerning terminological and methodological diversity, we propose to employ an institutional approach to the analysis of economic phenomena. Institutions are understood as comprising a set of formal and informal norms, as well as the mechanisms required to implement their conformance with these norms. The aim of our study is the development of a typology of institutions of scientific knowledge generation according to the different phases and stages of scientific production. In order to avoid an artificial gap in the subject-object relation, we analyse the problem on the basis of the methodological unity of actors, stakeholders and institutions, as well as their interactions with the environment (natural, political, social, economic and cultural). For the classification of institutions, several dimensions were referred to: the stages of knowledge generation (production, exchange, dissemination and consumption); management functions (planning, organisation, control and motivation). The model of circulation of explicit / tacit knowledge SECI developed by Nonaka and Takeuchi for the corporate sector is also thought to be relevant in this connection. On the basis of this model, we have identified the institutions of socialisation, externalisation, combination and internalisation of knowledge. The

results of the study will be used in the further analysis of case studies of universities, both in Russia and elsewhere.

**Keywords:** Russia, knowledge generation, higher education, economic institutions, institutional configuration, classification, SECI, explicit knowledge, tacit knowledge

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## **Influence of Ethno-Social Processes on the Innovative Development**

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**Abstract:** The article is devoted to identifying interdependencies between ethno - social processes and innovation development formation in the regions of the Russian federation. The object of the research is the innovation development processes. The subject of the research is the innovation development of the regions formed under the influence of ethno – social processes. Authors look into correlation dependencies between the innovation development indicators and social – ethnic processes. Authors defined that title population of the Russian Federation is more prone to official economic activities. At the same time minor peoples with their traditional lifestyle frequently limit themselves to households and natural exchange. They are not ready to accept changes dictated by academic and technical progress and coming globalization which makes ethnic regions “outsiders” in terms of economic and innovative development.

**Keywords:** ethno – social processes, innovation development, influence of ethnos on innovations

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## **Effectiveness of Knowledge Economy Determinants: Case of Selected EU Members**

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**Abstract:** Developed countries have gradually become more dependent on the production and spread of knowledge in connection with technological

advancement. This has resulted in a shift from materially-based prosperity to knowledge-based prosperity and in better recognition of the role that knowledge and technology play within economic growth. Nowadays, economic actors more frequently force to seek new sources of competitive advantage – usually knowledge, to help to build the competitive advantage and sufficiently set them apart from the competition. Therefore, we can see a shift from traditional resources, such as work, land, and capital towards knowledge and its use, especially from hard factors (e.g., infrastructure) towards soft (intangible) factors such as local atmosphere, synergetic effects, human capital, and knowledge assets. However, most countries fail in their attempt to become knowledge or knowledge-based economies and they are not effective during the processes of knowledge creation, use, dissemination and commercialization. We can see a lack of studies analysing and comparing countries' efficiency during this processes at EU 28 level. We fill this gap and evaluate the efficiency of these processes by using determinants of knowledge economy within EU 28 countries. These determinants are divided into four drivers (pillars) such as: (i) economic incentive and institutional regime, (ii) educated and qualified workers, (iii) an effective innovation system, and (iv) information infrastructure. For our analyses, we used Data Envelopment Analysis which is commonly used for evaluating the effectiveness and productivity of comparable production units based on the size of inputs and outputs. Results show that most of European countries are not effective in the processes of using determinants of knowledge economy (mainly financing of research and development). The main advantage of our research is that, the Data Envelopment Analysis provides practical implications (for each country) on how to improve and how to change inputs and outputs to become efficient. As a data source, we use data from Eurostat databases.

**Keywords:** knowledge economy, competitiveness, determinants, EU members, effectiveness, innovation, public funding

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## **The use of Knowledge Sources to Create Absorptive Capacity: A Case Study**

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**Abstract:** Since the seminal work of Cohen and Levinthal (1990) the absorptive capacity (ACAP) construct has received wide attention. Despite that, research progress has been disappointing. Few studies examine how ACAP relates to organizational practice. Processes and mechanisms for creating ACAP in firms has even been called a black box. This paper opens this black box by generating

empirical based knowledge on how firms behave. We are guided by two questions: -How can we categorize and structure the internal and external knowledge sources used to create ACAP? -What are the central organizational activities to create ACAP from these knowledge sources? This research was accomplished as an in-depth, single-case, qualitative study with ethnographical elements. We found three internal sources of adequate knowledge that can be categorized along a scale from codified to tacit knowledge. Four external sources are categorized from public industrial knowledge to personal knowledge accessed through social ties. Recognition and assimilation of knowledge from these sources rests on a stable workforce that constitutes a cumulative ACAP quality. The ability to apply it to commercial ends is fuelled by a concentration of decision power based on experience, knowledge, position and ownership. These results add to ACAP knowledge by offering an insight into topics that previously have just been touched on at an aggregated level.

**Keywords:** absorptive capacity, knowledge sources, strategic knowledge

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## **Network for Knowledge Sharing: An Empirical Investigation Within SMEs**

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**Abstract:** Previous literature has highlighted that SMEs face particular knowledge sharing challenges (Zieba *et al.*, 2016). Frequently the knowledge is kept in the minds of some key employees (Valkokari and Helander, 2007) and the unstructured ways towards knowledge management (Durst and Edvardsson, 2012) jointly with the motivations that impede knowledge sharing (Vuori and Okkonen, 2012) can lead to the risk of losing important information. Despite such risk is partially prevented by the slow staff turnover (Durst and Wilhelm, 2011) it leads managers to limit the outflow of knowledge from the company (McAdam and Reid, 2001; Bozbura, 2007; Hutchinson and Quintas, 2008). As a consequence, the knowledge sharing is inhibited both inside the company, since SMEs usually have no explicit policy towards knowledge management and outside the company, given that managers in SMEs tend to block it. Considering that networks are seen as tools that allow SMEs to gain new knowledge, the literature call for empirical evidences (Valkokari and Helander, 2007) to investigate such phenomena. This paper contributes to address these calls providing an empirical analysis of whether and how networks enhance the knowledge sharing in SMEs. To this aim the following research question is investigated: how and in what extent networks can enhance knowledge sharing in the SMEs context? The

empirical investigation is based on a survey questionnaire submitted to a sample of Italian SMEs. The findings firstly show that network is perceived by the investigated SMEs as an effective tool assisting them in knowledge sharing in several ways. Secondly, network appears to be a tool that fosters knowledge sharing, not only because it enhance the acquisition of new knowledge from outside the company, but also and more importantly because it helps in explicating tacit and latent knowledge to let it available to be shared inside and outside the company within the network. Empirical evidences about the benefits in term of knowledge sharing from network participation are provided.

**Keywords:** network, knowledge sharing, SMEs, survey

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## **Intelligence and Learning Organizations: Lessons for big Data and Knowledge Management**

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**Abstract:** This paper studies the place of knowledge assets in a wider conceptual framework, including not only explicit and tacit knowledge but also big data and analytics/intelligence. By managing that wider range of intangible inputs with a structure designed not only to exchange existing knowledge or data but also to create new learning and insights, decision-makers can accomplish several things. Initially, the range of potentially valuable inputs is increased, bringing in a more diverse set of intangibles that might have more relevance in specific industries or companies. Secondly, the structures can be designed not only to exchange knowledge or big data but to bring it all together, along with all other available intangibles, for analysis. As a result, new learning can take place as cross-functional teams derive insights from the inputs. Finally, such a structure can work not only within a single enterprise but across its wider network of collaborators. The resulting intelligence learning ecosystems bring an even wider range of inputs, diverse perspectives, and opportunities for new learning to all the partners. By looking more widely at these possibilities, knowledge assets can be employed even more productively than when considered only in traditional knowledge management systems.

**Keywords:** knowledge management, big data, intelligence, learning organizations, intelligent learning ecosystem

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# Knowledge Sharing in Context: The Case of Volunteer Development at a Heritage Site

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**Abstract:** This paper offers insights into the role and processes associated with knowledge sharing, as part of the development of volunteers at a substantial heritage site. The marked growth in the numbers and importance of volunteers in the heritage sector in the UK has fuelled interest and research in volunteer management, but researchers have paid little attention to the important area of the processes through which volunteers develop the skills and knowledge that they need to deliver their role. In order to contribute to addressing this gap, this paper reports on research conducted at a major heritage site in the UK. Data was gathered through onsite interviews with management and focus groups with volunteers. Questions explored the sources of knowledge utilised by volunteers, the knowledge sharing processes involved and how this contributed to their development. Whilst some managers are more committed to embedding learning opportunities in the everyday volunteering experience than others, and volunteers vary in their interest in developing new skills or transferring their existing knowledge and skills into their role as a volunteer, there is a general acknowledgement that knowledge sharing is pivotal to volunteer development. Informal learning was found to be the principal vehicle for the acquisition of knowledge by volunteers. This took place in many situations such as shared breaks, mentoring and community of practice situations, although the nature of volunteer roles determined the extent of social contact. Managers were fully aware of their critical role in knowledge sharing and attempted to facilitate such informal learning through formal and informal mentoring whilst also instigating some formal training and cascading information. Volunteers also took the initiative in setting up a dropbox for knowledge sharing, and in managing a social club, both of which they regarded as a vehicle for networking, informal learning and benchmarking. However, volunteers were less enthusiastic about the introduction of an intranet specifically for volunteers.

**Keywords:** knowledge sharing, volunteer development, heritage sector, volunteers, learning

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# Knowledge-Based HRM Practices, Organizational Learning and Innovation Performance

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**Abstract:** This paper analyzes the mediating role of organizational learning (OL) in the relationship between knowledge-based HRM practices and innovation in a set of Spanish firms with more than 100 employees. We argue that innovation is enabled and powered first and foremost by knowledge-based HRM practices (e.g. how recruitment is handled, to what extent the training and development systems focus on knowledge-related aspects, and how the performance assessment and compensation systems support knowledge-based behavior). In particular, we suggest that all these facets of HRM impact the learning capability of the firm, which will in turn affect the innovation performance of the company. A structured questionnaire was used to gather information about the relevant variables under study and structural equation modelling (SEM) based on partial least squares (PLS) was then used to test the hypotheses put forward by the research. Our empirical findings demonstrate the relevance of knowledge-based HRM practices as predictors of innovation performance, and the role of organizational learning as a mediating factor between HRM and innovation. In particular, OL mediates this relationship in the case of training and development practices (partial mediation) and performance assessment (total mediation). Overall, the results extend existing understanding of the interrelationships between HRM, learning, and innovation in organizations and thereby contribute to the knowledge-based view of the firm as well as discussions on strategic HRM and innovation management.

**Keywords:** knowledge-based human resource management, organizational learning, innovation performance, Spain

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## Some Facilitators and Inhibitors of Knowledge-Based Socio-Technological Transformations

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Romania

**Abstract:** The reasons for long lasting technological change and, inevitably, the co-evolution of social change, are rarely self-evident. If the driving forces for such

change were finding solutions to clear-cut problems then tapping suitable financial inputs (into R&D, say) would suffice and the associated micro-dynamics would be explained by random influences like resource availability and historical events. However, such a description appears both naïve and is of very limited explanatory value. More interesting and useful is to look at the confluence of different technical ideas in some detail and to admit that feedback may come from co-evolving social processes. Indeed, difficult problems await innovative multi-domain solutions, e.g. selecting alternatives for future energy, finding breakthrough materials, employing big-data in conjunction with artificial-intelligence, coping with future of labor markets, to name a few. And, eventually, some trajectories of innovations may become utterly unsustainable or undesirable. Such trajectories are heavily influenced by forces, which may be themselves consequences of past innovations: (1) high levels of emerging income inequality and increasing societal stratification, (2) knowledge diversification and exchange leading to an over-abundance of shallow solution proposals, and (3) multi-tier labor markets with high levels of uncertainty concerning rewarding job qualifications. Addressing such influences would often require hard to justify long term commitment by stakeholders, including working against prevailing opinions and tendencies. We take the view that (1) - (3) are in fact delayed effects of past innovation, which cannot be modified over the short term. They may not hinder innovation per se, but they may well inhibit substantial non-shallow or non-marginal innovation. We propose to find knowledge filters for (2) in a regional setting. We hope that such filters may help to reduce the inhibitory effects on non-shallow innovation and hereby also to empower regional innovation facilitators.

**Keywords:** regional policies, innovation lines, societal force fields, big data, artificial intelligence

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## The Most Relevant KPIs of Intellectual Capital for Social Cooperative Enterprises

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**Abstract: Purpose** - The paper aims to identify the main value drivers of intellectual capital (i.e. human, relational and structural capital) which affect the value creation process by social cooperatives. **Design/methodology/approach** - A survey was conducted in 2016 involving 151 Italian social cooperatives which provide social, educational and health care services (A-type) or work integration

for disadvantage people (B-type). We have developed 22 Key performance indicators able to map the three components of IC for social cooperatives according to the extant literature about NPOs (Non-Profit Organizations) and IC (Intellectual Capital). The descriptive statistical analysis allows to assess the differences among the intellectual capital components according to the geographical localization and the belonging sector of social cooperatives. **Findings** – The cooperative enterprises which recorded an employment growth in 2015 represent 54% of sampled cooperatives and they are mainly located in the North of Italy. The A-type social cooperatives are characterized by the highest level of graduate employees and yearly training hours per employee. The social cooperatives belonging to a network represent 74.83% of the sample. The network allows to access to a wide range of services in support of the core activities. The A-type social cooperatives express a better judgement about the quality of their relationships with the customers, the community and institutions. These enterprises, especially if they are located in the North and Centre, allocate greater resources to the information and communication technology, they guarantee a greater access to the intranet network and they are more innovative and able to provide new services. One or more certifications are owned by 79.47% of sampled enterprises. The adoption of the quality certifications is more common among the A-type social cooperatives located in the South. **Originality/value** - We focus the attention on the Non-profit sector that is still scarcely studied with reference to the role of IC and its effect on the value creation process. The social cooperatives are knowledge-intensive enterprises, mission-driver organizations and characterized by human-capital intensive processes and they provide services with a high relational content. It is important to understand how the value of IC components varies depending on the geographical localization and the belonging sector of social cooperative enterprises.

**Keywords:** intellectual capital, social cooperative enterprises, intangibles

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# Online Recruitment for Organizational Knowledge Management: A Quantitative Study

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**Abstract:** The process of Recruitment and Selection of new employees has a growing influence on business results and, nowadays, the use of knowledge and information and communication technologies enables this process to be faster and more complete. The need to improve the existing resources in companies has conditioned the changes in the Recruitment and Selection process and, over time, we observe the transformation of this process. Thus, Recruitment and Selection became a strategic process in Human Resources Management improving the organization's competitiveness. The objective of the study is to understand the role of online recruitment for organizational knowledge management; and to characterize the most used social networks in Online Recruitment, identifying the main reasons to use online recruitment during the process of recruitment and selection. In this quantitative study, 112 companies fulfilled a questionnaire that evaluated the online recruitment process. The main results suggested that national companies and companies with more than 250 employees use more online recruitment. The fact that some companies have job openings available on multiple websites simultaneously, making information available 24 hours a day, reducing the time and process costs and streamline communication between candidates and the organization are some of the most listed reasons to use the Online Recruitment. Otherwise, the use of traditional methods of recruitment and the fact that the access to social networks are not allowed in some organisations are some of the reasons cited for not using this method of recruitment. Thus, it can be concluded that the Information and Communication Technologies are present in the process of recruitment and selection and that this is a reality existing in organizations as a tool to support of knowledge management.

**Keywords:** online recruitment, Portuguese companies, social media, knowledge management

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# The Social Context of Tacit Knowledge Management

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**Abstract:** Understanding the nature of social interactions and the context within which they occur is key to facilitating the flow and use of tacit knowledge. This paper presents a social-context framework based on the premise that diverse social science knowledge can be integrated, structured, and portrayed in a way that facilitates tacit knowledge management. The framework is based on patterns of terms found in a survey of the social-science literature related to social structures. Three framework dimensions (manageability, factors, and trust) are divided into ten components and 77 criteria. Manageability includes criteria, indicators, and actions that can enhance social context criteria. Factors are underlying characteristics - interaction, scale, and situation - that affect all aspects of the social structure. Trust classifies criteria at individual, group, organizational, and leadership levels. Understanding how the social context of an organization affects social interactions coupled with implementing actions that positively influence those interactions can enhance the flow and use of tacit knowledge contained in the minds of individuals across an organization.

**Keywords:** social structure, social interaction, social context, manageability, trust

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## Reflecting Factors of Urban Production: A Text Mining Approach

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**Abstract:** In the past, production sites left urban areas due to constraining factors like land costs, lack of space and emission restrictions. In addition, acceptance problems by the population (e.g. due to emissions and traffic) counteracted the settlement of industrial sites in urban areas. The emergence of new production techniques as well as the demand for more individualized and regionalized products may have changed that recently. New expectations towards sustainability, urban life quality and attractive work places by the population as well as politics advance an increasing (re-) integration of production in urban

areas (Fraunhofer IAO, 2015). For this reason characteristics of the paradigm shift towards urban production have to be examined. Previous publications described the development of a research design aiming at identifying key factors of urban production (Stiehm et al., 2016). The approach is based on an explorative mixed method design containing both qualitative and quantitative methods. This publication addresses the reflection of developed factors using text mining approaches. The aim is to review and classify the validated factors with respect to scientific publications. What can be determined concerning the development of the factors or rather the paradigm shift over the last decades? Different measures are used to address the development of the factor occurrences defining urban production. The results are intended to extrapolate future developments and provide a basis for recommendations.

**Keywords:** text mining, data analytics, urban production, mixed method, classification, trend analysis

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## **The Relationship Between Knowledge Management Maturity and the Quality Level of Services and Innovation**

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**Abstract:** The aim of conducting this research is to assess knowledge management maturity (KMM) and quality of services and innovation. For this purpose, we explored the relationship of eightfold dimensions of knowledge management maturity namely knowledge sharing, top-to-bottom secure information trajectory, measuring system, organizational learning, knowledge-based organization, process-oriented knowledge sharing, continuous improvement of process, and self-actualization of organization, to the variables of quality of services and dimensions of organizational innovation. This research is an applied research by purpose and a descriptive-survey study by nature and data collection. The study population consisted of all employees working in Aghajari Oil and Gas Exploitation located in the county of Omidieh situated in the southwest of Iran. Sampling method is stratified. For data analysis, statistical software programs LISREL and SPSS were used. The results show that knowledge

management maturity is significantly associated with quality of services and innovation.

**Keywords:** knowledge management maturity, service quality, knowledge management, organizational innovation

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## **A Knowledge Management Model for Improving the Software Test Process**

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**Abstract:** Knowledge management is a transversal discipline and with an adequate implementation generates value in organizations. Implementations of knowledge management strategies produce a significant improvement in business processes. However, there are different studies that evidence that the adoption of management practices in organizations are costly and are carried out over long periods of time, and in some cases, the unsuccessful result the effort invested. In the software development cycle, testing is an activity that largely ensures product quality and software testing organizations are characterized by being knowledge intensive. According to several researches developed in this field, the main difficulties of implementing knowledge management programs are: sharing and reusing knowledge. For the implementation of knowledge management, it is necessary to understand organizations, teams and individuals as a multilayer system. But focusing primarily on the individual, who must incorporate the practices within his process. Consequently, by focusing the management of knowledge on people, and on the teams that integrate it, the progressive form of the organizational context is addressed. In this sense, the integration of knowledge management discipline in the software testing process, leads to improved process. Thus, a model applied to software testing has been developed that involves the structure and intentionality of process improvement based on the set of good practices called PSP and TSP, to implement an organizational knowledge management system. In the proposed model, implement the basic practices and principles of knowledge management from individual knowledge to collective knowledge. The model was validated in the academic context achieving the effectiveness and improvement of the process.

**Keywords:** software testing, knowledge management, software quality, test management and process improvement

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## **The Method of Designing Reference Models of Workstations**

**Małgorzata Spychała, Maciej Szafrąński, Magdalena Graczyk-Kucharska and Marek Goliński**

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**Abstract:** Labour market creates a demand for new competencies and qualifications of employees. In order to cope with these demands, they should be first recognized, and then managed. It will help people to prepare future employees for the tasks to be realised at the workstation. The reference models of workstation are the tool helping in managing those competencies, which are a set of knowledge and skills of employees needed for the fulfilment of tasks. A reliable identification of entrepreneurs' needs and dissemination of this information, e.g. to potential employees on the stage of vocational level, have a big impact on improvement of the teaching process and efficiency of matching candidates with the demand on the labour market. The identification of entrepreneurs' needs through creating reference models of workstations has a relevant influence on the cost and effectiveness of the recruitment and training process of new employees who perform their job in the workstation. Reference models of workstations are designed within the scope of the project "Time for Professionals BIS – Professional Great Poland" realised in Partnership with Regional Government of Wielkopolska Voivodeship and Poznan University of Technology. The first stage of designing the model was the choice of tools to measure the competencies of employees. A questionnaire and a structured interview with immediate superiors were used. Self-assessment of knowledge and competencies were also carried out in this research. When the tools and methods were insufficient, snapshot observation method of the employees in a workstation was used. The competency profile was designed based on results of the above research. Based on the competency profiles drawn up in minimum three companies in the same workstations, the reference models of chosen workstations were designed. The purpose of this article is to present a useful statement of the principal stages of designing the reference models of workstations. An example of the use of the presented method is shown in the empiric part of this publication that allows the examination of competency expectations of entrepreneurs in chosen workstations. An objective identification of the competency demand is the basis for competency management of future employees.



**Keywords:** reference model of workstation, competency management, knowledge, skills, examination of competency, competency demand

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## **Evaluating the Impact of Knowledge Sharing Initiatives in International Organizations: Case Studies**

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**Abstract:** No one disputes that knowledge is the lifeblood of international organizations and especially specialized agencies of the United Nations (U.N.). However, there has been little consensus on the best methods to share knowledge, leverage the extensive international expertise and make it available to the constituents and partners of these organizations. What is their strategy for managing knowledge? Do they have one? What impact does it have? What is the role of senior management in championing knowledge sharing in these international organizations? These are the questions this paper addresses through the lenses of evaluations of current knowledge sharing practices in two institutions located in Geneva, Switzerland, both part of the United Nations system. A recent U.N Joint Inspection Unit report (Dumitriu. 2016) provides a comprehensive overview of knowledge management strategies and practices in the United Nations system and its specialized agencies. In order to take a closer look at what these entail and their impact, this paper highlights recent evaluations of knowledge sharing in two specialized agencies of the United Nations system: the International Labour Organization (ILO) and the World Intellectual Property Organization (WIPO), as examples only. Although they have very different mandates, both institutions are recognized for their role as knowledge leaders in their specific areas of expertise: social and labour issues for the ILO and international copyright, patents and trademarks for WIPO. In the last few years, both have reviewed their knowledge sharing capacities: the ILO, the study carried out an audit of knowledge sharing; while WIPO conducted an evaluation. The methodology used to carry out these reviews covering the different objectives and approaches is described, as well as the outcomes and recommendations of the studies. The author of this paper was involved in undertaking these reviews. The paper will be of particular interest to individuals in not-for-profit organizations and government agencies. It discusses an approach to carrying out a review of knowledge sharing initiatives, focusing on a framework of four core areas.

**Keywords:** knowledge sharing, knowledge strategy, evaluations, knowledge audit, international organizations

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# Forgetting-Relearning Cycles in Organizational Downsizing Strategies

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**Abstract:** When firms seek to reduce costs and increase productivity, they often view downsizing as a viable strategy. However, research on downsizing outcomes is not conclusive. Recent studies describe several counterproductive consequences of downsizing, which include, among others, loss of motivation, decreased innovation capacity, the appearance of a short-term mind set, the rise of organizational conflicts, and the loss of product or service quality. From the knowledge-based-view of the firm, downsizing strategies may involve critical loss of organizational knowledge. Given the social complexity of firms, downsizing practices may damage the organizational knowledge base in ways that go beyond simply losing the individual knowledge of people leaving the organization. In this sense, firms reducing staff may do so in a way that involves the loss of organizational knowledge and skills. The aim of this study is to understand the impact that downsizing strategies have on the knowledge base of firms and its consequences for firm performance. To do so, this paper develops a longitudinal study using quasi-experimental analysis. Our results show that changes in firm size affect the knowledge base and labour performance. However, the effects of downsizing on a firm's knowledge base might not become evident in the short term. Negative effects appear in the mid- and long term when firms aim to develop new growing strategies but are not able to perform as they did in the past unless they undertake relearning processes.

**Keywords:** downsizing, organizational forgetting, organizational learning, organizational knowledge, knowledge based view

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## Knowledge Sharing in Knowledge Collectivity: Case Digitalization in Industrial Network

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**Abstract:** Knowledge sharing (KS) in the inter-organizational setting is not widely researched area. However, in temporary organizations such as projects, sharing expert knowledge is essential and may take place in knowledge collectivities, i.e., Collectivities of Practices (CIP). Due to CIPs' often temporary nature, time and

socialization are lacking, thus efficient KS practices are required. The complexity of projects may also necessitate CIPs to cross organization boundaries, forming inter-organizational CIPs, IO-CIPs. Therefore, a better understanding of intra-organizational practices overlapping inter-organizational KS is called for. This paper contemplates on who should participate and how the process of boundary spanning KS should be put into practice in IO-CIP context. We present a case of a network-dependent focal company aiming to form a new digitalization strategy, which requires boundary-spanning knowledge management (KM) approaches. We concentrate both on intra- and inter-organizational steps needed for developing a digitalization roadmap eventually encompassing the whole network. Based on case observations we conclude that KS in industrial IO-CIP context involves multiple internal and external stakeholders, which also play facilitating roles in KS process. The results also reveal that it is possible to achieve KS in a larger group with a stepwise, well-facilitated and goal-oriented approach that involves experts into practices gradually. Additionally, complex phenomena in industrial networks, such as digitalization, requires other processes of KM besides KS: knowledge transfer for explicit knowledge and knowledge creation at the network level, too. Thus, in IO-CIP setting, KM processes of the company and network should be approached holistically, aiming at an overall view. The results shed light on KS in inter-organizational setting, particularly the overlap between intra-organizational practices and inter-organizational KS within knowledge collectivities. We contribute to boundary spanning inter-organizational KS by adding a description of the KS practices in CIPs, which is based on the theory of social constructivism of knowledge, and expand the viewpoint of the CIP-concept also towards inter-organizational setting.

**Keywords:** inter-organizational knowledge sharing, knowledge collectivity, collectivity-of-practice, knowledge management, boundary spanning, digitalization

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## Identifying Specifics Affecting the Remuneration of Employee Inventions

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**Abstract:** Under current economic conditions knowledge is a key competitive advantage, which makes knowledge management an important business activity. Within various explicit knowledge, intangible assets like patented inventions, know-how or trademarks are the most discussed. Underlying ideas behind the intangible assets origin from the creativity of individual employees and their

inventive activities, however, the owners of such assets are usually employers, because the major part of innovations are conceived as a part of employment duties and employers claim these ideas through the intellectual property law. Most of the European countries reward inventive employees by a specific reward regulated usually by the patent law. There is a controversy what amount should such a reward reach. Trying to answer this question, we use the Grounded Theory approach. In this exploratory paper, we concentrate on the main categories emerged, when searching for specifics and circumstances relevant for the level of remuneration for an employee inventor. We gathered primary data through focused groups of respondents with professional background in the intellectual property law, including judges of Czech higher court instances. We present and discuss several key ideas supporting and explaining various aspects of the remuneration process specifics – the nature of the legal tradition, the need of system effectiveness, imbalanced employee-employer relations, stage of the inventive idea being remunerated, employee’s working duties and overall responsibility for success. The discussion of our respondents is based on Czech and Slovak legal framework, however, the results are general in nature and can have implications in other countries, as well.

**Keywords:** knowledge creation, innovation, employee inventions, remuneration, reward, intellectual property

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## **Getting Better at Knowledge Management: Integrating Individual Skills and Organisational Capability**

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**Abstract:** This paper arises from a work in progress academia/industry collaborative research project to develop a Knowledge Management (KM) maturity model as a component (critical capability) of the IT Capability Maturity Framework (IT-CMF). KM is understood as an organisational capability i.e. the effective mobilising of the resources of people, processes, and technology to support the achievement of an organisation’s objectives. The research questions addressed are as follows: what are the challenges for organisations in developing an effective KM capability?; what are the respective roles of individual skills and organisational capability in developing a KM capability?; how can individual skills and organisational KM capability be integrated to help organisations get better at

doing KM? The key finding is that a pivotal challenge for KM in terms of developing capability is the potential for processes and technology to both enable and block effective KM through people. The role of learning is important and the link between individual learning and organisational capability is key, but challenging to manage. Initial data suggest that combining a skills-based approach with an organisational capability approach might be a helpful practice for organisations and some suggestions are provided on how to synthesise these approaches into tools and guidelines that practitioners can use.

**Keywords:** organisational capabilities, competences, learning, skills, maturity models, knowledge management, human resource management, human capital management, IT-CMF, SFIA

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## **Transformation of a Knowledge Management System in the Process of Educational Institutions' Merger**

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**Abstract.** University knowledge management development has an impact on different aspects of universities' activities, such as education, management, innovation and research. Research in the field of university knowledge management systems reveals that the competitiveness of a university depends directly on the level and the maturity of a knowledge management system. The socio-cultural environment which has been developed at the university defines methods and tools for the identification, assessment and transfer of new knowledge. The sustainable functioning of this system becomes more problematic when several independent universities merge. Each participant in this process of integration is the driver of a unique corporate culture, unique system of human capital development, has its own system for the training and professional development of faculty staff, scientific and innovative infrastructure and technology transfer capacities. The St. Petersburg Economic University (UNECON) was formed as a result of the merger of two large economic universities – FINEC and ENGECON – in 2012. In 2013, the new university acquired the University of Service and Economics. This case is of special interest because the merger has affected two scientific and teaching schools that had previously been in the state of irreconcilable competition and opposition to each other. The problem of the merger of these two institutions in an environment of rigid resistance to change has required new solutions in knowledge management systems.

## **Knowledge as a Basis for Sustainable Tourism in Terms of V4 Countries**

**Zuzana Tučková<sup>1</sup>, Zuzana Jurigová<sup>1</sup> and Martina Kuncová<sup>2</sup>**

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**Abstract:** Tourism, as a globally important sector, is comprised of various service activities. Within all these tourism sub-sectors, being a number one tourist destination is closely associated with high level of knowledge transfer. Even though tourism belongs to low-tech service, its importance for a service sector is high due to its economic contribution for a state. Due to the fact, that tourism is considered to be service oriented, its connection to knowledge-based service economy can be further examined. This is emphasized by Jensen (2003) who applies knowledge innovation in the tourism industry and explains the important role promotion and knowledge sharing plays in the sustainability of the tourism industry. The European Network for Sustainable Tourism Development claims that the connection between education and knowledge networking, destination management, transport and travel, natural and cultural heritage and climate change creates the structure for a more viable development. The development and sustainability of quality in this field is heavily dependent on the capabilities of management to proficiently respond to changes in the global environment. This is a key element in the future success of these organisations and therefore important for future generations. The sustainability of this sector is particularly important since the a requires special attention in the service sector as the very essence is dependent on the human factor. It is imperative for a prosperous hospitality business to be represented by professional and qualified employees with the knowledge and skills conforming to a successful, innovative business. The introductory part is focused on a critical literature review affecting their relationships and linkages between tourism and knowledge based services. In the following section, is using mathematical methods like TOPSIS method or DEA model for compose said indicators in the Czech Republic in comparison V4. In conclusion, there are different findings generalized and formulated into the conclusions and the application of the knowledge contained in the publication is defined.

**Keywords:** DEA model, human capital, knowledge, tourism, TOPSIS, sustainability, Visegrad Four

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# Cross-Cultural Customer Knowledge Management and Service Improvement in Japanese Hospitality Industries

**Jiro Usugami**

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**Abstract:** This study has four purposes related to the growing importance of Big-Data as a factor of cross-cultural Customer Knowledge Management (CKM). The first is to identify the priority of using Big-Data as a factor of cross-cultural CKM in tourism service of Japanese organizations. The second purpose is to specify the external environmental factors influencing cross-cultural CKM based on utilization of Big-Data insights. The third purpose is to examine the awareness of importance of capturing, sharing, disseminating and implementing international customer knowledge. The fourth purpose is to observe whether cross-cultural CKM using Big-Data results in actual service improvements. This research is based on a questionnaire survey, March, 2017. The survey results revealed that, over a two-year period, Big-Data has emerged as a high or very high priority in the field of cross-cultural CKM in local governments and Japanese hospitality organizations. From five external environmental factors, driving three forces of cross-cultural CKM using Big-Data are identified: increase in the number of inbound international tourists, improvement of IT infrastructure, and preparation for the Tokyo Olympics and Paralympics in 2020. Increase in financial support by central and local governments, additional budget funding, does not seem to be a major environmental factor among respondents to this survey. Awareness of the importance was examined, focusing on four categories such as capturing, sharing, disseminating and implementing international customer knowledge in CKM using Big-Data related to inbound international tourists. Tourism service organizations indicated high awareness of the increasing importance of all four categories over the next two to three years. There is a significant gap between level of awareness and perceived performance gains. In all four categories, Knowledge capturing, Knowledge sharing, Knowledge dissemination and Knowledge implementation, the level of perceived performance gains is not as high as the level of awareness. Only Knowledge capturing, compared to the other three categories, shows a relatively higher correlation between awareness of the importance and perceived performance gains. In tourism service of Japanese organizations, CKM based on utilization of Big-Data insights has, at a limited level, resulted in actual service improvement or new service development related to IT, language or transportation. Transforming international customer knowledge into actual service improvement is occurring, but is not yet a major trend connected with Big-Data insights.

**Keywords:** customer knowledge management, Big-Data, inbound international tourists, service improvement

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## Utilizing Knowledge Networks in Virtual or Augmented Reality Solution Creation

**Joel Vanhalakka, Ilona Ilvonen and Heli Väättäjä**

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**Abstract:** Contemporary digital transformation brings new opportunities for companies, lately especially in the form of virtual and augmented reality solutions (VR/AR). While the technologies are developing fast, knowledge about them and their possibilities is difficult to locate and reach. Cross-organizational knowledge networks that share knowledge about technology and its applications are needed. This paper analyzes cross-organizational knowledge sharing networks that operate behind the scenes of virtual and augmented reality. To understand the knowledge networking processes, this paper presents a case study of a regional VR/AR community. The aim of the paper is to understand how knowledge sharing networks naturally operate in the VR/AR context and what kind of processes and tools organizations harness. The paper presents a description on how the interviewed organizations and individuals utilize their knowledge network in VR/AR knowledge acquisition and creation. The distinct characteristics of the VR/AR field are discussed in light of existing literature on knowledge sharing and knowledge networks. In the findings, the need for a more systematic way of utilizing the network is identified. Knowledge networks provide the best value for their members when the network is actively harnessed, and there are network actors who focus on systematically spreading knowledge across the network. While the case study shows that the network members feel that they gain knowledge from the network, the use of the network varies between organizations and individuals. The network shows signs of movement toward more systematic knowledge sharing, and the knowledge network literature suggests that this development will improve the benefits of network participation for all actors in the network. Further studies on a larger scale in similar types of networks are suggested to allow better understanding of knowledge sharing in knowledge networks, and the challenges and benefits that are connected to it. VR/AR development as a rapidly evolving field lends itself to be an interesting context for studying knowledge networks.

**Keywords:** knowledge networks, knowledge sharing, knowledge creation, virtual reality, augmented reality.

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# Perception of the Learning Organization Concept: The Case of Professional College in Russia

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**Abstract:** The main purpose of this research was to evaluate the difference in staff's and students' perception of the dimensions of a learning organization in a professional college in Russia. A pre-test/ post-test research design was used in a case of a typical college in St. Petersburg, Russia. About 40 employees and 300 students participated in the research during two phases (2015 & 2017). The expanded version of Watkins' and Marsick's learning organization questionnaire was used to measure the dimensions of the learning organization. The differences in perception were analyzed using a T-test. The results showed that the students indicated lower levels of the dimensions of a learning organization than did staff. The data gathered from the case demonstrated knowledge sharing activities were not enough to significantly change staff's perception of college as a learning organization. Students' opinion, on the contrary, changed. At the post-test phase, students rated continuous learning dimension, inquiry and dialogue, team learning and strategic practices dimensions higher than before. There is a probability that the consistent implementation of knowledge sharing practices changes the perception of a college as a learning organization for its' customers – students. This study contributes empirical findings on learning organization in primary professional education institutions because of the latter lack conceptual and empirical studies.

**Keywords:** learning organizations, college education, professional education, knowledge sharing, organization learning

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# Risks of Knowledge Increase Strategy

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**Abstract:** Introducing new knowledge into production processes implies a lengthy process with significant time costs and uncertain future implementation context which creates risks. Therefore, risk management processes research within the framework of knowledge generation strategy formation is of great academic interest. New knowledge generation processes are mostly related to time periods between taking a decision on organizing production and introduction of new knowledge into economic activities. Significant time costs predetermine the appearance of future new knowledge implementation context leading to appearance of different generation types. Therefore, the risk of new knowledge generation is a notion reflecting the degree of reality of undesirable development of economic actor's activities aimed at new knowledge generation in this decision – making context. We can mark several types of new knowledge generation risks: obtaining a negative result; absence of results at deadline time; an appearance of analogous knowledge at the market; impossibility of practical application; uncompetitiveness of new knowledge; results not matching planned ones. The aim of the research is to develop theory and practice of managing risks in the process of generating new knowledge, in particular, identifying patterns of knowledge generation risks spread depending new knowledge cost structure. During the research, the authors observed the following pattern: the larger the costs for research are, the less the risk of functional knowledge generation is and the higher the risk of generating operational knowledge is. If research costs take 8-10% of overall company costs, knowledge generation risks structure becomes stable and looks as follows: functional knowledge generation risk is 15-18%; structural - 28-30%; operational - 53-55%. Therefore the conducted research demonstrates interdependence between the level of knowledge increase risk and costs structure for different types of knowledge. It has been defined that at minimal costs for research the risk of functional knowledge increase is the highest whereas operational and structural knowledge increase is relatively low. As the level of research costs grows functional knowledge generation risk decreases, but the risk of generating operational and structural knowledge grows.

**Keywords:** knowledge generation, managing risks, knowledge cost structure, increase strategies

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# Formation of Organization Development Strategy on the Basis of new Knowledge

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**Abstract:** American and European researchers started emphasizing the role and meaning not only of information but knowledge which gave rise to a whole set of new definitions for modern society, including «knowledge society», «knowledgeable society», etc. Modern market conditions require businesses to find new approaches to corporate management, planning and control. The right choice of direction in introducing new knowledge largely predetermines efficacy of achieving stated objectives. We often see how insufficient evaluation of initial economic opportunities leads to a halt of many perspective innovation and investment projects and programs because of the lack of financial and economic resources for their completion. It is possible to avoid such situations if at the stage of practical implementation strategy formulation, we exclude “unreachable” projects based on low initial innovative activity of the company. The aim of this research is to formulate methodological approaches to selecting innovative projects based on widespread investment design methods considering peculiarities of investment development strategy. The author offers methodological approaches to selection of results of new knowledge generation based on widespread methods of investment design and considering features of innovative development strategy. New methodological approach includes the following stages: company economic opportunities analysis; innovative ideas generation; preliminary innovation selection; presentation of innovation idea in the form of innovation project; innovation project efficacy evaluation from the point of view of investment perspectives; evaluation of innovation project efficacy from company economics point of view; multidimensional analysis of obtained quantitative evaluation with the aim of choosing the most perspective innovation projects. Theoretical importance of obtained results is in the development of methodological approaches to innovation project selection based on widespread methods of investment design considering peculiar features of innovation development strategy. These methodological approaches can be the basis for designing company activities on new knowledge generation. Practical importance of obtained results is in increased transparency of activities on new knowledge generation results application in the work of a company by means of improving managerial decisions on developing innovation activities and implementation of innovations.

**Keywords:** knowledge generation, innovative development, investment design

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## **A Method for Documenting Agile Software Projects**

**Stefan Voigt**

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**Abstract:** Agile methods play a major role in software development. Such methods as Scrum or XP rely heavily on managing tacit knowledge through direct communication. The success of this approach has virtually eliminated documentation in agile projects. This can potentially result in a loss of experience when developers leave a team or even an organization. Documentation and agile methods are not necessarily antithetical. A number of studies address documentation in agile projects but fail to provide any holistic methods. Taking our empirical study of German software companies as our point of departure, we derived a set of requirements for our method and toolset. We used these requirements to develop an integrated concept for documentation in agile software projects. The method we developed enables developers to document their findings, software architecture and requirements in conformance to agile values. Since agile methods have often been criticized for only being appropriate for small projects, we designed our method to be scalable. A morphology based on characteristics of a project is used to select the optimal level of documentation. Our method addresses the following questions: Why document the project? Who is the target audience? What is the content? What documents will be produced? How much has to be written? Whence does the information come? What form does documentation take? Who is responsible for documentation? When should information be documented? We integrated our method in a structured wiki to facilitate documentation and information searches. This paper presents the central concept of our agile documentation method in detail. Our findings indicate that the method enables software developers to externalize their knowledge in a structured manner and provides guidance within documentation.

**Keywords:** agile documentation method, explicit knowledge management, information management

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# Exploiting Knowledge to Generate Target Group-Specific Music of Video ads

**Oliver Wiesener and Sophia Christmann**

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**Abstract:** Since users often use a second screen while watching TV and videos the importance of the audio channel seems to grow. A quantitative survey (n=242) revealed that 93% of the participants use a second screen. Furthermore, the attention of the participants can be returned to a video in 83% of the cases. That implicates a target group-specific music creation. Marketing specialists typically select the music for video ads. Thus, the selection happens mainly on a subjective basis. Subsequently, using knowledge in regard to the target groups appears to be of importance to objectify the music selection. Based on music-related market knowledge marketers could get the information about the preference of genres depending on products and target groups. For instance, the survey in regard to promote a car to persons in the age of 16 to 30 years resulted in 41% Electronic Dance music. Rock, Pop and Classical music was chosen in around 20% of the cases. From a knowledge-based view the question arises how to exploit that kind of knowledge in order to gain competitive advantages. Since the survey delivers information about genre preferences the knowledge exploitation is about combining different genres. From a musicological view the combination of different genres is often called crossover that is typically based on two genres. To combine genres it seems useful to categorize music into characteristics. As a conclusion, different characteristics can represent specific genre elements. For instance, music can be differed by the melody, the rhythm, the dynamics, the formal structure and the instrumentation. The rhythm could base on the most frequently mentioned genre and the instrumentation on another one, for example. To exploit the external knowledge different musical characteristics will be evaluated and aligned with the genre-specific findings of the survey. As a result, the target-group specific genre combination enables a higher involvement and attention from a recipient view.

**Keywords:** music knowledge, music selection, genre combination, target-group advertising

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# Empowering Civic Minded Citizens in Knowledge-Based Society

**Adriana Zait, Andreia Gabriela Andrei, Claudia Stoian Bobalca and Oana Tugulea**

Alexandru Ioan Cuza University of Iasi, Romania

**Abstract:** Focusing on civic engagement, as a driving force of sustainability in knowledge-based economy, the present study seeks to understand how social trust, on one hand, and conspiracy mentality, on the other hand, are influencing online (versus offline) civic actions, as well as their impact on the overall civic engagement seen as a cumulus of both attitudes and behaviours. Following literature indications, research hypotheses are developed and analysed using a questionnaire-based survey and a convenience sample for data collection. The investigation is placed in the context of an Eastern European country, and SPSS statistics package and regression analysis are used for assumptions testing and results reporting. The results indicate social trust has significant positive effects on both online and offline civic actions, while the conspiracy mentality influences mainly the online ones. The result highlights the important role of online networking in spreading and strengthening positive attitudes, but also conspiracy ideas, a higher increase in conspiracy mentality being related with participants preference for the online (versus offline) forms of involvement in civic related activities. The main contribution of the study refers to conspiracy related forms of online civic engagement, and it shows that such online actions are more related with conspiracy mentality than the offline ones, highlighting that nowadays society, which provides and consume mainly online content, is much more exposed to conspiratorial thinking than it used to be in the past. Therefore, our study indicates that although the effects of online engagement on civic participation are mostly positive, the negative influence of conspiracy believers in the online area should be addressed applying adapted knowledge management instruments that would provide the actors with adequate frames of reference, insights and knowledge about events. Since a positive civic engagement represents an indisputable social desideratum, our results might indicate an important direction of action for enabling citizens to get relevant information from their social networks and for developing effective public policies directed towards supporting civic minded citizenship and NGOs ability to provide relevant and time-ready information through social networks.

**Keywords:** civic engagement, online civic engagement, social trust, conspiracy mentality, civism supportive public policies, quadruple helix

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# Parents Know Best! How Knowledge Transfer Influences Subsidiary Strategy (and Performance)

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**Abstract:** A company's knowledge assets are considered to be the most important determinant of both expansion and success, which is even more pronounced in foreign markets. A parent company's knowledge assets provide competitive advantages to subsidiaries. While the idea that MNCs can improve the performance of their foreign subsidiaries by utilising MNE knowledge is not new, this paper goes beyond the existing literature by exploring if and how the knowledge transfer from HQ to subsidiary can affect the choice of the subsidiary's strategy, and subsequently, performance. To be able to understand how knowledge transfer influences performance in subsidiaries, it is crucial to understand how the transferred knowledge is used in the subsidiary to affect performance. This article aims to examine the effect of MNE knowledge transfer (from HQ to subsidiary) on subsidiary strategy, and subsequently, on performance. It uses logistic regression to examine a sample of 355 MNE subsidiaries to reveal the relation between the knowledge transfer from headquarters to subsidiary and the strategy pursued by the subsidiary. Subsequently, using ANNOVA and linear regression analysis, strategy-performance relationship is examined to show the moderating effect of knowledge transfer on subsidiary performance. The results show that knowledge transfer is a significant determinant of subsidiary strategy, and, subsequently, performance.

**Keywords:** knowledge transfer, subsidiary, strategy, performance, MNE

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## The use of Science to Support Decision Making: Knowledge Absorptive Capacity Perspective

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**Abstract:** Even today, we notice that scientific research remains little consulted and used by policy decision-makers when supporting decisional processes linked to public policies. Indeed, considerable research shows that the integration of evidence faces major well-known and well-documented barriers. Significant

research identified several factors to facilitate the evidence-based decision-making process. Isolated, they only paint a partial portrait of the reality of conditions that research designates as essential to Evidence-Informed Decision Making (EIDM). The purpose of our study is to document the skills of policy decision-making that facilitates the use of research to develop and design policies. This study includes a systematic review of literature on evidence-based decision making among policy decision-makers. Based on the absorptive capacity theory (Cohen and Levinthal 1990), this research aims to shed light on two aspects of the EIDM condition that have been less explored so far: 1) identify the skills that public health decision-makers must have to use scientific research in the decision process and the formulation of public health policies and 2) explain their role and tasks in the process leading to the use of science.

**Keywords:** systematic review, skills, evidence-based decision-making process, knowledge absorptive capacity theory

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## **Client Co-Production in Knowledge-Intensive Business Services (KIBS): Case Study Analysis**

**Małgorzata Zieba and Paweł Kończyński**

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**Abstract:** Purpose: This paper aims to explore the topic of client co-production in knowledge-intensive business services (KIBS). The paper first sketches a theoretical background and reviews previous studies on factors affecting successful client co-production in such companies and then examines these factors via case study research among a small KIBS company and its five customers. Methodology: The paper is based on an in-depth analysis of literature devoted to client co-production in KIBS firms and on the results of case studies analysis. The authors explore theoretically and empirically the perception of factors behind a successful client co-production process of a KIBS company from the point of view of both customers and service provider. The examination resulted in the clarification of what a successful client-KIBS firm cooperation should look like and what kind of actions KIBS firms should undertake to provide it. Findings: As the analysis shows, to perceive client-KIBS firm cooperation as successful, customers on one hand expect immediate effects that would justify and compensate their time and money investments (e.g. new clients or brand recognition) and on the other hand, some of them anticipate positive changes in the long term, which tangible form is associated with the newly obtained knowledge and, more importantly, a developed and written strategy. Among the factors that influence the co-production process one can list teamwork, trust,



communication and knowledge flows. Research limitations: Research results are limited to one KIBS company operating in Poland and its five customers. As such, they are not conclusive for the whole KIBS sector and for KIBS firms functioning in other countries. Research implications: The findings of both literature review and case study analysis indicate that there are several outcomes that are expected from the point of view of a KIBS customer when selecting the service of a KIBS company. Practical implications: The paper examines the relation between a client and a KIBS company and explores the factors influencing the successful outcome of this relation. The paper provides guidelines how this type of relation should be handled by managers or owners of KIBS firms. Originality/value: The paper contributes to the literature on KIBS firms, especially in the scarce area of their cooperation with customers. The paper also suggests further research possibilities in this area.

**Keywords:** service co-production, KIBS firms, case study, Poland

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## Utilization of Consumers' Knowledge in Organizations

**Ewa Ziemia and Monika Eisenhardt**

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**Abstract:** Consumers' knowledge is increasingly becoming an integral and important element of business and public activities. A major challenge for organizations involves acquiring consumers' knowledge and using it for improving their performance. Hence, this research focuses on the utilization of consumers' knowledge in business and public organizations. The main purpose of this paper is to find how business and public organizations can utilize consumers' knowledge for improving their activities. Therefore, this study identifies and explores: ways of consumers' knowledge sharing, incentives encouraging consumers to knowledge sharing, information and communication technologies (ICT) supporting consumers in knowledge sharing as well as business processes in which consumers' knowledge can be used. In order to achieve the research goals on-line observations were used. 90 case studies related to the utilization of consumer knowledge in various public and business organizations was analyzed. The results indicate that consumers create/design products and evaluate them with comments and scoring, intangible and tangible incentives encourage consumers to engage in knowledge sharing, own organizations' websites and Facebook fanpages support customers in knowledge sharing, and consumers' knowledge is used for creating or designing new products. The results obtained may prove to be helpful for organizations interested in using consumer knowledge.

**Keywords:** consumer knowledge, knowledge sharing, knowledge utilization, ICT, incentives, business processes

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**PHD**  
**Research**  
**Papers**



# Generic Innovation Designing -GenID- Framework: Towards a More Systematic Approach to Innovation Management

**Lamyaa El Bassiti, Maria El Haiba and Rachida Ajhoun**

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**Abstract:** To achieve sustainable success in the global market, modern organizations need to be flexible and fast in their reaction to change, which depends on their ability to innovate, not just occasionally but systematically. Despite countless efforts and spending, many organizations feel they are not making the most of their innovation potential and resources and don't generate desirable profit. This problem does not lie in a lack of ideas, but more in a structured approach to innovation. Believing that most pressing problems organizations face today are characterized by unprecedented levels of complexity and interdependence leads to breakdown the conventional problem-solving paradigm. However, a structured approach to innovation management could be criticized as it may lead to rigidity and hamper creativity. Thus, there is a need to allow a trade-off between granting conditions for creativity, so new ideas can flourish, and at the same time keeping a systematic approach to smooth social cohesion, facilitate the pool of resources and promote the creation of a collaborative community. From the exploration of the distinguishing characteristics of the new economy and the new millenary, this paper provides the foundation of a systematic framework to innovation management. Based on the complexity and structuration theories, the concept "Innovation" has been formalized in two generic models: (1) Innovation Activities Model providing an integrated view of interactions involved within an innovation context, (2) Innovation Lifecycle Model portraying the major milestones over an innovation journey. These constructs has been assessed through an online survey designed to gather qualitative data.

**Keywords:** innovation structuration, innovation designing, innovation management, systematic management, conceptual constructs, complexity theory, structuration theory, innovation activities, innovation lifecycle

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# Healthcare Analytics in Oncology: A Framework to Improve Competitive Advantage on Healthcare

**Marisol Hurtado and Jose María Viedma**

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**Abstract:** Digitization is a reality that is transforming society and creates new challenges. Consequently businesses are forced to rethink their strategies and business models to explore new opportunities based on synergy with information technologies (IT). The research addresses a real problem of global concern and provides a high practical value for healthcare business and chronic patients. In healthcare management, the key to build healthcare delivery system for the twenty-first century is to evolve towards personal health management that applies the full power of IT to improve patient care. We propose to build a methodology and a framework to personal health management for chronic patients with oncologic diseases. Resulting from this advancement, healthcare organization will be capable to offer innovative services with holistic patient-centered orientation, and patients will receive tools to take active responsibility for healthcare self-management. The framework is based on intellectual capital and knowledge management concepts. A review of literature shows the role of IT alignment to obtain competitive advantages. Next, we studied the patients' responses as co-creator of service innovation in healthcare. Finally, we applied concepts of personal health management and healthcare analytics. The methodology and framework has been tested through qualitative methods applied to various case studies of cancer patients. To design the framework and healthcare services, we interviewed experts on healthcare. The first case of study is in progress revealing interesting results for healthcare services and exhibits an excellent experience for patients. The model permits strategical healthcare management on personalized perspective, and will be of particular interest for expert specialists, portfolio of healthcare services and their resolving capacity. This approach fulfils an identified need in healthcare towards a user-centered attention, quality management and continuity in healthcare management, improvement of use of material, as well as human resources and optimization in use of them.

**Keywords:** personal health management, healthcare analytics, Intellectual capital management, strategic healthcare management, digital health, patient-centered care

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# The Influence of Diversity Among Board Members on a Company's Financial Health

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**Abstract:** This paper presents the area of sharing and creating knowledge in management as well as on the boards of Czech stock companies in the context of long-term financial health. In particular, it tries to discover if there is any relationship between higher demographic diversity and a firm's ability to remain in good financial health. Based on a review of the literature, there is an assumption that higher diversity among board members supports sharing and creating knowledge, since different people can provide their own experience, professional background and opinions. That should lead to better corporate management, which is inseparable from good financial health. One of the ways we can assess financial health is by bankruptcy models. They make use of selected financial data and then divide companies by a final score into numerous groups (depending on the particular model we choose). Each group shows specific characteristics, which let us know how good a firm's financial health is. The main aim of this paper is to examine the possible relationship between age and gender composition of executive board members in selected Czech stock companies operating in the IT industry. Our initial sample included 364 companies based in the Czech Republic (all of the companies operating in this industry), from which we randomly chose 70 firms. However, not all of the requested data was available for this sample, so we were forced to reduce our final sample to 56. We were able to gain the basic data describing the number of board members, their age, gender as well as current financial indicators published in financial statements. Based on these numbers, we calculated selected bankruptcy models (Altman index, Index IN01). Afterwards we used basic statistical and mathematical methods to observe if companies with higher diversity showed better financial health indicators. Based on our results, age and gender diversity could potentially have an influence on corporate performance, especially considering age diversity, where we discovered a relatively strong negative correlation of -0.32 between ROE and average age. We cannot state the direction of the relationship, but it could be examined in further research using detailed statistical tests.

**Keywords:** age diversity, gender diversity, bankruptcy models, financial health, IT industry

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# The Missing Puzzle in Knowledge Management: Personal Knowledge Registration (PKR)

**Ragna Kemp Haraldsdottir**

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**Abstract:** This research seeks to demonstrate current status, access and use of personal knowledge registration (PKR) in Icelandic organizations for the purpose of knowledge sharing, the creation of interdisciplinary teams and in-house training. Furthermore, it evaluates how records professionals and HR professionals collaborate on PKR. The purpose is to understand the reasons that lie behind perceived lack of success in personal knowledge registration and the limited participation of records professionals in the process. The research aims to raise awareness of the role and responsibility of records professionals in registration of information, such as personal knowledge. This paper provides an understanding of how records professionals and human resource (HR) and training professionals collaborate on the registration and use of personal knowledge for in-house educational programmes. It pays attention to organizations as educational places where personal knowledge registration matters for personal, professional and quality reasons. Additionally, the impact of the Icelandic Standard of Equal Pay no. 85:2012 and a parliamentary bill for the legislation of Equal Pay in Iceland are partly covered. There is a lack of studies that explore the purpose of personal knowledge registration. The originality of this research lies in how it approaches various professions, using a triangular approach, and sheds a light on their role in PKR. This kind of research has neither been previously carried out in Iceland nor fully examined in other countries. Finally, it provides a significant contribution to a rapidly growing interdisciplinary field of knowledge management and information management.

**Keywords:** knowledge management, personal knowledge registration, records professionals, education and training, collaboration

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# Integrating Risk and Knowledge Management in Human Space Flight Programs

**David Lengyel**

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**Abstract:** The National Aeronautics and Space Administration (NASA) established the Exploration Systems Mission Directorate (ESMD) in the 2004 timeframe to manage a new portfolio of programs and projects aimed at lunar return. To



ensure an effective transfer of knowledge from NASA legacy programs, such as Apollo, International Space Station, and Space Shuttle, ESMD took an integrated approach towards managing risk and knowledge. An important and novel aspect of ESMD's integrated risk and knowledge management (IRKM) approach was using risk records to identify knowledge gaps and support the creation and transfer of both tacit and explicit knowledge. This case study focuses on how integrated knowledge management practices improved risk management and what can be learned from NASA's IRKM implementation that is extensible to other organizations.

**Keywords:** risk management, knowledge management, integrated, NASA, space flight

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## **Institutional and Structural Transformation of Society for the Formation of a Knowledge Economy in Ukraine**

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**Abstract:** The regularities of the origins and evolution of national economic systems constantly face adaptability problems. The structural approach proposes to consider all existing society institutions as a specific institutional field with structurally interconnected institutions which are the elements of the institutional structure model (of the system). It is of major importance that there is a synthesis of national and regional trends to ensure preparedness for the transition to the new paradigm, principles, mechanisms and instruments of socio-humanitarian development of the information society and the knowledge economy. They are built on the cooperation of key partners of socio-economic policies at different levels of the hierarchy of the state. The transition from an industrial to a creative economy, is characterized by the change of socio-economic formations, the basis of which are intellectual potential, knowledge and creativity. That is why the proposed model shows the structure of the information society as the core of creative economy. At the core of the developed model of the creative paradigm of the knowledge economy is the cognitive creative, as an imperative. It is proved that the conceptual model of the institutional structure of the socio-economic system of the information society requires the organic combination of mechanisms of innovation and technological development and social policy.

**Keywords:** knowledge economy, creative economy, institutional structure, information society, cognitive creative

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## **A Gold Standard-Based Approach for Arabic Ontology Evaluation**

**Imen Bouaziz Mezghanni and Faiez Gargouri**

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**Abstract:** Ontologies often guarantee semantic interoperability in modern Web. The exponential growing of information on the Web coupled with the extensive need for ontologies in the Semantic Web made ontology learning from text a very active research area. In fact, a crucial aspect of ontology learning is to evaluate how good the learned ontologies actually are. We proposed, in this paper, gold standard based on the evaluation of ontology learning using ad-hoc ontology of the Arabic legal domain, in particular the criminal matter.

**Keywords:** legal ontology, ontology evaluation, Arabic legal domain

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## **Communication in Communities of Practice: Literature Review**

**Katharina Nowak**

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**Abstract:** In today's knowledge-based economy, Communities of Practice (CoPs) have gained great attention and became a key success factor for global competitiveness of organizations. CoPs are considered as a valuable source for knowledge sharing and knowledge preservation. Collective communication-processes enable members to share and create new knowledge. Previous research has shown that some researchers have become interested in understanding how community-members contribute to knowledge creation and sharing as well as how these processes can be facilitated in order to gain advantage for three parties: the single community members, the community as an entity, and the surrounding organization. The purpose of this study is to provide a systematic literature review by analyzing how the literature describes and explains communication in CoPs and how this literature can be categorized. By applying a bibliometric analysis, I want to elaborate the current perspective of research on communication in CoPs. This study contributes to illustrating the actual scope of communication in CoPs, according to research publications.

Furthermore, it presents opportunities for future research on communication in CoPs. Initial findings indicate that this topic is discussed and cited quite often but a well-structured overview is missing.

**Keywords:** communities of practice, communication, literature review

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## **Agile Transformation in Project Organization: Knowledge Management Aspects and Challenges**

**Pawel Paterek**

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**Abstract:** The objective of the paper is to present knowledge management aspects of an Agile transformation as an organizational change resultant from introduction of a new Agile project management methodology in the context of the organizational learning theory. The research study was concentrated on Information Technology (IT) & Information and Communication Technology (ICT) projects which are considerably utilizing volatile knowledge resources. The paper responds to a research questions about potential knowledge management aspects, issues and challenges within Agile transformation process in terms of its pre-conditions and facilitators. Presented empirical research is based on a literature review and a quantitative analysis of multiple case studies of companies implementing new Agile project management methodology. The empirical research results were gathered with applying triangulation method of multiple case studies originated from document analysis, interviews and observation in order to reach higher reliability of research results. The detailed examination is focused on knowledge management aspects, issues and challenges within the Agile transformation process in large-sized project organizations. As shown by results of the research, the change in project management methodology significantly impacted the project organization as a whole. It was a source of comprehensive organizational changes in processes, technology, methodology, strategy, structure and organizational culture and it allowed for enhancing the competitive advantage of the organization. The key pre-condition and facilitator of an Agile transformation process is the knowledge management aspect. Project organizations and their senior executives have to address many knowledge management pre-requisites and challenges with a view to ensuring a successful transition process deployment. The research results revealed fundamental pre-conditions and demands in terms of: continuous training and workshops, coaching, mentoring, involvement of Agile coaches and champions, establishment of community of practice, rational support from executive team and learning organizational culture. However, the major Agile transition challenge to

enterprises is to initiate a continuous learning process as a part of the learning organizational culture.

**Keywords:** project management, knowledge management, Agile transformation, organizational change, organizational learning theory, Agile methodology

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## **Exploring Factors Influencing Knowledge Sharing Behaviour: The Moderating Effect of Transformational Leadership**

**Van Dong Phung and Igor Hawryszkiewicz**

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**Abstract:** The Vietnamese Government has been struggling to build a higher education system that is innovative to the requests of national knowledge-based development. It is essential to explore knowledge sharing behaviour (KSB) from environmental and personal perspectives which contribute to improve creativity and innovation in Vietnamese higher education institutions (HEIs). Social influences and individual factors are examined as critical factors on KSB. The literature suggests a complex relationship between these factors and KSB. However, the literature typically hypothesises and examines simple main-impacts model. Drawing upon the role of transformational leadership, we propose a contingent research model based on social cognitive theory that comprises environmental factors (subjective norms, trust), personal factors (knowledge self-efficacy, organisational rewards, reciprocal benefits, and psychological ownership of knowledge) and KSB. Our focus will be on the moderating effect of transformational leadership on the relationship between these factors and KSB. We advance to conduct a survey to examine our proposed conceptual model. It is expected that this research will contribute to the deeper understanding of the effects of personal and environmental factors and KSB moderated by transformational leadership within Vietnamese HEIs.

**Keywords:** knowledge sharing behaviour, social cognitive theory, transformational leadership, Vietnamese higher education

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# Knowledge Management for Model Based Design Software Products

**Sorina Plesa and Gabriela Prostean**

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**Abstract:** The development of software products, especially in the automotive industry has surged with the launch of new programs aiming to optimize software production through Model Based-Design (MBD). This paper emphasizes the utility of MATLAB® and Simulink® tools towards control systems for embedded software. Presented in particular is the Simulink® modelling tool, and also some extended tools, providing software code generation, without the need for human intervention. Although this approach is considered optimal for developing software products, conflicting opinions exist between model-based developers, project managers, customers and stakeholders. The conducted research presents a knowledge transfer model between all involved parties. The proposed model bring together the agile communication models and the last year's trends, being observed that the knowledge management in the IT domain is made more likely through networking, which determines exponentially for the knowledge to be transferred in a tacit way. Even if the way of transferring knowledge starts to change, it can be based on the primary elements of the Ackoff et al (1989) theory. This theory includes the elements that create the knowledge management - data, information, knowledge, understanding and wisdom. Based on this theory, the knowledge transfer model is put into practice by collecting data from the actors involved and after that, connections are established to understand the utility between them, so that in the end it is easier to get specific information. Patterns are created through information processing, which are then used to identify similar situations. In this way, knowledge is consolidated and future events are predicted. The last step is represented by wisdom, which filters the obtained knowledge through values and personal principles of every participant, in order to reach a decision. Finally, the model decodes the useful knowledge in real time and classifies it, taking into consideration the essential criteria, the difficulty of transmission and also the possible communication channels, training the model towards vast knowledge for real and problematic situations within model based software projects for all involved parties.

**Keywords:** model based design (MBD), Simulink, conflict, tacit knowledge, explicit knowledge

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# A Semantic Representation of the Knowledge Management Enablers Domain: The aKMEOnt Ontology

**Mohammad Sabri, Mohammed Odeh and Mohammed Saad**

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**Abstract:** Knowledge management is a significant driver for any enterprise development and evolution as it is engaged with planning, implementing, controlling, monitoring and improving enterprise's processes and systems. However, organisations are still at a disadvantage when applying knowledge management in a real environment. A resourced-based view of knowledge management stimulates the consideration of knowledge management enablers (KMEs) as factors that should be employed during the development and implementation of knowledge management systems. Using organisations' KMEs is critical for understanding how knowledge is created, shared, disseminated and upgraded in order to better respond to the dynamic environment. They are also essential to identify available assets and resources and clarify how an organisation's capabilities are created and utilised. Sustaining these KMEs and applying them in systematic modes and business processes requires a generic overview of these KMEs and the relationship between them. The semantic representation of the KMEs domain can be an attractive approach to meet this demand. Using ontologies facilitates the semantic representation of the KMEs and provides a shared understanding of knowledge among individuals in the organisation. This paper proposes the employment of an abstract KMEs ontology (aKMEOnt) that formally defines an essential pillar of the knowledge management domain. Organisation structure, culture, information technology, leadership, knowledge context and business repository have been selected as representatives to define the KMEs domain. Each of the selected KMEs has a set of concepts that characterises its domain. The whole concept map of these KMEs has been developed to depict the concepts and their relationships in the KMEs domain. Based on the concept map of the KMEs, the aKMEOnt, including its classes and properties is implemented using the Protégé tool and Ontology Web Language-Description Logic (OWL-DL). The aKMEOnt is important to explicitly manage and control the flow of knowledge in the organisation, and, in addition, it can be integrated with potential semantic representation of other related disciplines.

**Keywords:** knowledge management, knowledge management enablers, resource-based view, ontologies

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# Moving KM to the Next Generation: The Contribution of Critical Systems Thinking

**Sharon Simatwo, Gillian Ragsdell and Thomas Jackson**

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**Abstract:** Knowledge Management (KM) is multifaceted and grounded in various disciplines including psychology, strategy, organizational behavior, economics, and management. It is therefore not surprising that KM has developed rapidly as a field with a myriad of frameworks designed to address KM needs in organizations. The emphasis of studies tends to be on the application of KM with paucity in the discussion of its theory and underpinning philosophy. As a result, KM is varied in definition and application. The range of KM tools and practices has caused some concern with authors suggesting that there is need for KM to be applied in an integrated manner. Systems Thinking (ST) is the conceptual framework for problem solving that views situations holistically. Critical Systems Thinking (CST) is the latest movement in ST that was born from the need to appreciate the diversity in approaches so as to identify the most suitable methodology for a problem context. CST is described by the commitments of critical awareness, sociological awareness, pluralism, complementarity and human emancipation. The application of CST is said to have reformed ST through its commitments and brought synthesis through the provision of a rational approach of combining system methodologies. Activities that create, capture and utilize knowledge are inherent in systems methods thus indicating a similarity between ST and KM. Authors have as such, called for the use of CST to underpin KM theory and practice. This paper highlights the contribution of CST to the maturity of Systems Thinking as a discipline. Potential use of CST in developing more unified, systemic and holistic approaches to handling KM is put forward. The aim is to spark conversation on the need for a new generation of KM that is grounded theoretically and philosophically, and based on more than practical case studies.

**Keywords:** knowledge management, critical systems thinking, systems thinking, underpinning philosophy, theory

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# Towards Sustainable Knowledge Management in High-Performance Sport

**Divyata Sohal, Gillian Ragsdell and Donald Hislop**

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**Abstract:** For knowledge management initiatives to be successful and provide sustainable competitive advantage, it is imperative that they are rooted in the organisation's context. This paper presents a knowledge management audit methodology for conducting a systemic inquiry into the multiple factors within an organisational context that can impact on the success of the KM strategy. Drawing from the practice-based perspective, the KM audit is proposed to study the organisational objectives, identify the strengths and barriers in the context and highlight the existing knowledge resources and processes. As opposed to the existing audit methodologies in the literature that present a snapshot evaluation of the context, the present audit methodology will adopt the iterative approach of the action research process; the data collection and analysis phases will be conducted simultaneously, progressively developing insight and meaning. Further, the findings will be continuously fed back to the organisation and used directly to inform the KM strategy through forming a working relationship with the current Knowledge Manager in the organisation. The overall aim is to inform a KM strategy that will strategically align to the organisational context whilst utilising the available resources. It is expected that this approach will result in a KM strategy that will foster a long-term focus on KM in the organisation, provide sustainable competitive advantage and be robust in the face of dynamic organisational climates. This work-in-progress study is being conducted in a not-for-profit, knowledge intensive, high-performance sport organisation to illustrate the KM audit in practice. This paper presents the audit methodology and discusses the rationale and benefits of conducting a KM audit, along with preliminary findings and reflections from the audit process at the case study organisation.

**Keywords:** knowledge management audit, knowledge strategy, high-performance sport

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# Investment Decisions' Analysis in the Hotel Industry in Chosen Czech Regions

**Petr Svěrák and Zuzana Jurigová**

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**Abstract:** The aim of this work is to examine the differences between individual regions with regard to various macroeconomic aspects, indicators such as regional GDP or regional industry revenue, and in other areas so as to make clear what expectations an investor should realistically have when making an investment decision. Heeding other economic indicators can give an idea of where the economy is headed in order to plan long-term investments more effectively. Macroeconomic indicators are reflecting the economy's performance; however, changes in these types of indicators are only identifiable after an economic trend or pattern has already been established. Because these indicators have the potential to forecast where an economy is headed, fiscal policymakers and governments make use of them to implement or alter programmes in order to ward off a recession or other negative economic events. There also is a need to focus on the level of knowledge within a particular sector, as well as comparisons of sectors that may have a significant influence on decision-making. Therefore, the first part of the work deals with literature background on the importance of macroeconomic indicators on tourism concentrating more on the investment in accommodation sector. The aim of the comparison of selected regions is to accurately determine the greatest differences in the observed macroeconomic indicators with an emphasis on the regional construction industry and to determine their degree of influence on the average price of a product or service. This work focuses on a detailed analysis of individual variables and indicators, which in both regions report disparities. Thus, disaggregated indicators subjected to extra direct comparison best reflect the particular differences in the macroeconomic indicators, which are crucial for subsequent practical use. The research methods, and especially the variables of these methods, are based on the results of research available in domestic and foreign scientific literature. These were subjected to content-causal analysis and the results thus obtained are implicated in individual examined variables. The results of this paper show that it is possible to establish a set of macroeconomic indicators which demonstrably influence decision-making in investment decisions in the hotel industry

**Keywords:** macroeconomic indicators, regional growth, investment decisions, multi-criteria decision-making

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# **An International Perspective on Knowledge Management in SMEs: Implementation and Barriers to Success**

**Chayaruk Thanee Tikakul and Avril Thomson**

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Faculty of Engineering, University of Strathclyde, UK

**Abstract:** Knowledge Management provides the potential for organisations to improve their productivity and efficiency. Many existing studies of Knowledge Management focus on large organisations whilst significantly less consider Knowledge Management in SMEs. Studies which draw global comparisons of Knowledge Management in SME's are particularly rare. Therefore, the aim of this study is to identify and investigate similarities and differences in the current Knowledge Management Practices in SMEs in UK and Thailand within the manufacturing sector. A survey in the form of questionnaires was distributed to SMEs in the manufacturing Sector in Thailand and the United Kingdom via online survey software Qualtrics or paper based version depending on the participants' preference. In total there were 384 respondents from 36 manufacturing SME's across Thailand and the UK. Responses are from a range of business sectors including automotive, aerospace, packaging, food and beverages etc. The results shows that 78.1 percent of employees in Thai SMEs consider their organisation to have a formal Knowledge Management approach whilst less than half of UK employees consider this to be the case. Findings show similarities between UK and Thai SME's in terms of the biggest barrier of capturing knowledge, sharing knowledge and storage - these being lack of clear guidelines on the Knowledge Management approach and capturing knowledge and lack of time in both sharing and storing knowledge. One difference identified in barriers to Knowledge Management between the two countries is that in Thailand the biggest cultural barrier to knowledge sharing is extra workload whilst for the UK this is lack of awareness of other people's needs and requirements. Overall, this paper presents barriers to Knowledge Management in SMEs and considers the global perspective by highlighting similarities and differences between the UK and Thailand. By understanding these barriers, and transferring lessons internationally SMEs can work towards solutions to improve the performance of Knowledge Management activities in their organisation to achieve improved overall company efficiency. These results are part of wider study which aims to share best practice between the United Kingdom and Thailand through carrying out in depth case studies.

**Keywords:** knowledge management (KM), small and medium enterprises (SMEs), manufacturing, Thailand, The United Kingdom (UK)

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# **Masters Papers**



# The key Lies in the Process, not in the Innovation

**Luca Cozzolini and Jasmina Berbegal-Mirabent**

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**Abstract:** Big Data, Analytics, Cloud. These three concepts are surrounded by an incredible hype in the last years, but are they really the key to success in the years to come? Using the data from three of the world's largest studies on the priorities, strategies and careers of technology leaders we examine two specific issues: innovation practices and skill profile. Innovation is not an end in itself but a stepping stone to achieve superior business performance. If technologies—such as big data or cloud—are not connected to the core business and objectives of the company they are just information, not knowledge. In order to benefit of these technologies, CIOs should focus their attention on how to strategically align these technologies (and the underlying information they can provide) with the core business, in order to improve the business process. Concerning the second topic—skills profile development—, in the recent years we have witnessed an extremely dynamic setting. In a short span of time we have moved on from the era of mobile technologies to cloud/analytics databases. Consequently, specific skills of IT staff are constantly fluctuating, and professionals are struggling to catch up with the new demands. However, despite new trends demand the development of new skills, it seems that there are some “transversal” or “knowledgeable” skills that will always be needed and indispensable—e.g., project manager—. The overreaching conclusion is that even the foremost tools/innovations/technologies are ineffective if not properly supported with an appropriate knowledge management process.

Keywords: knowledge management, skill profile, analytics, business analyst, project management, hype cycle, big data, it objectives, efficiency, future technology trends

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## The Role of Knowledge Management in Enhancing the Organizational Productivity

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<sup>2</sup>Ahlia University, Kingdom of Bahrain

**Abstract:** The paper aims to analyze whether knowledge management tools are being utilized and its perceived success in enhancing organizational performance and productivity in a petrochemical industry in the Kingdom of Bahrain. A mixed

methodology method of quantitative and qualitative data gathering approaches was used. A questionnaire was distributed among fifty employees and four formal and informal semi-structured in depth interviews were conducted with the upper management. Analysis was done using SPSS for analysis of qualitative data and thematic categories for analysis of qualitative data. The study found that knowledge management tools were actually implemented in the organization for many years, but the employees were not aware that they were exercising it and that it was under the umbrella of a science called knowledge management. The success of knowledge management was perceived through better decision-making and better productivity by the concurrence of the two mixed methodologies used in the study. This is the first study that examines the impact of knowledge management tools on organizational performance and productivity in the oil and petrochemical industries, which are the main sources of income in Bahrain. It also provides an assessment tool that helps organizations to evaluate their knowledge management systems and suggest possible ways to enhance organizational productivity. The insight obtained from this study can contribute to the implementation, use, and practice of knowledge management in other organizations.

**Keywords:** knowledge management, Bahrain, petrochemical industry, organizational performance, productivity

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# **Non Academic Papers**





# A Journey Toward a More Networked Organisation and Improved Management of Knowledge

**Jasper Lavertu**

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**Abstract:** New and innovative organisational structures create opportunities to enhance employee motivation and involvement, resulting in higher-quality deliverables that are produced in less time. Improved knowledge management is paramount to ensure that knowledge-intensive organisations can add real value when shifting to a new organisational structure. Feadship is recognised as the global market leader in the field of pure custom superyachts. The comprehensive design and engineering of these unique vessels is carried out in-house at Feadship's technical office for design, naval architecture and engineering. For years the technical office was organised according to the matrix management principles in terms of both structure and physical orientation. Employees were clustered according to engineering discipline, each headed by a team leader. Projects with a multidisciplinary character, however, were managed by a core team that included representatives from every engineering discipline and reported to a project manager. One of the main drivers for the deployment of this matrix structure was the expectation of intensive knowledge sharing within each discipline and the attendant positive effects. As a matrix structure also has its drawbacks a study was conducted to find the most efficient and effective organisation for collaboration and knowledge sharing in the framework of projects and within engineering disciplines. This case study describes how teamwork in projects and disciplines can be optimised and controlled: on the one hand, by merging entire project teams physically in the office, and on the other by developing and implementing knowledge management initiatives to facilitate extensive knowledge sharing within engineering disciplines and across projects. The human factor is vital for the successful implementation of changes, which is why the changes required in terms of behaviour and attitude towards work and cooperation are a major focus of the study. This case describes a journey from a matrix to a more networked organisation and improved management of knowledge.

**Keywords:** organisational structure, matrix, network, engineering, projects, collaboration, teamwork, knowledge sharing, behaviour, case study

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# Organisational Systemic Change Using Action Learning in a Yin-Yang Perspective

**Zenith Law**

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**Abstract:** In a complex world, we face problems everyday in our personal lives and at work. Action Learning is known as a tool for solving critical and complex problems and also recognizes that only through questions can we build and gain an understanding of the problem, make sense of it, and develop breakthrough strategies and solutions (Marquardt, 2005). Reflection is key to learning. In an organisation that can be considered as a sociocultural system, different from individual learning, reflection is rooted in the social dynamics of people. Apart from reinforcing and institutionalizing changes in the corporate culture (Kanter et al. (1992); Kotter (1995)), what matters the most is about changing people's behaviours (Kotter and Cohen (2012)). Emotions, spirituality, feelings, and attributes of mindfulness, rather than the traditional ways of analysing and thinking, become key drivers for Organisational change (Antonacopoulou and Gabriel (2001); Bierly et al. (2000); Rego and Pina (2008); Bratianu (2015); Alavi and Gill, (2016)). In this paper, we firstly provide a conceptual contribution of using Action Learning in a Yin-Yang perspective to foster the body-mind-spirit balance that leads to a concept of organisational learning as a process of systems-based organisational change. Secondly, we also address the extent to which the Action Learning mixed with principles of Yin-Yang help the process of Organisational systemic change more congenial to innovation, more harmonious and more sustainable.

**Keywords:** learning, organisational learning, sustainability, systemic change, yin-yang

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# **Work in Progress Papers**



# Theoretical Foundations on Relationship Between KM and Territorial Planning

**Óscar Arias Londoño, David Londoño Vásquez, Alejandro Betancourt Durango and Jorge Restrepo Quirós**

Institución Universitaria de Envigado, Colombia

**Abstract:** This paper aims to present the progress of the theoretical foundations that articulate the concepts involved in a knowledge management model design for higher educational institutions. The research problem of this paper is based on this question: which are and how are the theoretical foundations articulated for a Knowledge Management Model (KMM) in order to be applied to higher educational institutions (HEI), and be focused on the Territorial Planning Approach (TPA)? The methodology used corresponds to a qualitative research of analytical type, which is supported on three work methods: data analysis, symbolic interactionism and hermeneutic interpretation. Due to the participative nature of this research, these methods were incorporated to facilitate the comprehension of the diversity of perspectives about the articulation between KMM-TPA. The partial findings are classified in three sections: a) TPA Reference variables selected; b) variables required for TPA design; and c) Theoretical articulation proposal between KMM-TPA variables. The conclusions show that the most relevant KMM design difficulty is the scarcity of the theoretical foundations about KM consolidated for HEI, which implied establishing procedures for supporting the analysis of organic functions, in order to line up conceptually the model with the institution and the context. Once this difficulty is solved, in the perspective of setting the bases for strengthening various HEI aspects: organizational culture, work in equipment, intellectual capital, strategic knowledge and knowledge transference.

**Keywords:** knowledge management, higher education institutions, territorial planning approach, KM model

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## Performance Impacts of Knowledge Management Practices Exploration and Exploitation

**Yousra Harb**

Yarmouk University, Jordan

**Abstract:** This research examines the impacts of knowledge management (KM) practices exploration and exploitation on employee's job performance in organizations. KM practices exploration represents the number of KM practices

employed by the organization, while KM practices exploitation represents the average years of experience with the use of these KM practices. This research is expected to have theoretical and practical contributions. Theoretically, it contributes to KM practices exploration and exploitation literature. Practically, our findings have significant implications for policy makers. The results provide empirical evidence on the impact of KM practices exploration and exploitation antecedents on employee's job performance.

**Keywords:** knowledge management, knowledge management practices, exploration, exploitation, job performance

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## **Methodological Framework Regarding Knowledge Innovation Matrix Development**

**Cristiana Istrate, Mirela Blaga and Ionut Viorel Herghiligiu**

Gheorghe Asachi Technical University of Iasi, Romania

**Abstract:** Worldwide economic current context change the organization's approach regarding "knowledge". Organizations realize that without an effective knowledge management cannot handle the change; that's why their new actual orientation is to knowledge based view approach. Therefore knowledge could be considered as the most valuable asset for organizations that can bring value and success; it can be seen as the foundation of all management processes. Likewise it must be mention that actual competitive environment boosts organizations orientations towards innovation – the engine of growth and organizations development. The organizational innovation process can be considered to be a very important competitive leverage that could bring many benefits. It's consequently necessary that organizations must possess various management tools that could improve the innovation process based on its required knowledge; so it can be observed the need for different innovation knowledge matrixes customized per various fields. This paper aims to present a developed methodological framework that could investigate the possibility to design a knowledge innovation matrix (KIM) for textile industry organizations. The development of such a matrix properly designed and properly understood can lead to a substantial improvement of the organizational innovation process. However this developed theoretical framework, which will present essentially different stages, objectives and a research model, have a broad spectrum, and therefore it can be used by any organizational managers, or by other researchers. Consequently this paper wishes to present a simple and effective managerial tool, which could bring a theoretical and practical contribution in the field of knowledge management and innovation management.

**Keywords:** knowledge matrix, innovation process, (research) methodological framework

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## **Causes of Team Members' Learning: An Individual-Level Analysis**

**Ghulam Mustafa and Richard Glavee-Geo**

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**Abstract:** This paper examines the influence of team orientation and perceived value congruence on individual learning and further explores the mediating role of satisfaction with the team in these relationships. The results reveal that team orientation positively influences individual learning directly and through satisfaction with the team. While value congruence predicts individual learning through satisfaction with the team, it impedes individual learning directly.

**Keywords:** team orientation, value congruence, satisfaction with team, individual learning, organizational learning

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## **Organic and Fundamental Functions: New Perspective on the Multidisciplinary Nature of Knowledge Management**

**Philip William Sisson and Thomas Mazzuchi**

George Washington University, USA

**Abstract:** The purpose of this paper is to introduce the concept of organic and fundamental functions for knowledge disciplines, and suggest functional differences between KM and the knowledge application disciplines such as management, engineering and development, finance, human resources, problem solving, etc., based on each set of organic functions and individual functions where possible. Mixed methods were used to identify and review published KM source words as a preliminary step in moving towards verification of a Unified Competency Theory of Knowledge Management's operationalized. Organic and fundamental functions help differentiate disciplines and what is multidisciplinary versus organic about KM. "Organizing" may be a fundamental KM function; "sharing" is not. The results of allocations in this paper are preliminary. Organic functions are often unique to a particular knowledge discipline; however, some organic functions are still allocated to multiple disciplines. Fundamental functions are used as one way to differentiate. All functions and core artifacts of presented disciplines have not been addressed. The organic/fundamental function idea will

permit the allocation of functional terms to KM's implementing, supporting, and specialty disciplines help differentiate KM.

**Keywords:** knowledge management, multidisciplinary, KM activities, knowledge disciplines, mixed methods

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## **The Cognitive Structure of Clusters: Conceptualizing the Knowledge-Based Cluster Theory**

**Eduardo Teixeira and Mírian Oliveira**

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**Abstract:** The knowledge-based cluster theory (KBCT) has been used to explain how clusters enable knowledge flows and innovation based on the physical and cognitive proximities of the agents. Physical proximity allows learning to occur in more flexible ways, while cognitive proximity suggests the similarity of the knowledge base, which is fundamental for mutual understanding among clustered agents. Those two factors are the basis of an 'industrial atmosphere' of contextual knowledge dispersed in the air, which is important to foster innovation. Although the theory has been applied in many fields of research, as yet, there is no framework that consolidates its main elements and can be used to guide its application in empirical studies. The research paper proposes a conceptual framework to investigate the cognitive structure of clusters and its effect on knowledge flows and innovation. The framework is designed to capture the influence of intentional and serendipitous knowledge flows on innovation, based on vertical (cooperative) and horizontal (competitive) cognitive ties. The originality of this paper lies in its attempt to capture the effect of intentional and unintentional knowledge flows on innovation. The paper contributes to multiple research fields by proposing a conceptual framework to operationalize the KBCT. Specifically, the paper should be of use to researchers, managers, and decision-makers who wish to investigate environments with high potential to foster innovations and innovative behavior in clustered firms.

**Keywords:** knowledge-based cluster theory, vertical ties, cooperative ties, horizontal ties, competitive ties, knowledge flows, innovation

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# Building the Evidence Base for Collaborating, Learning and Adapting

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**Abstract:** The United States Agency for International Development’s (USAID’s) Bureau for Policy, Planning, and Learning (PPL) is working to institutionalize collaborating, learning and adapting (CLA) into its program planning and implementation, as part of a broader effort to improve the effectiveness of its development assistance through organizational learning and adaptive management. USAID/PPL and its partner, LEARN, have initiated the Evidence Base for CLA (EB4CLA) workstream to answer key questions related to USAID’s “CLA” approach: *Does a systematic, intentional and resourced approach to collaborating, learning and adapting contribute to improved organizational effectiveness and development outcomes? If so, how and under what conditions? How do we measure the contribution?* The workstream addresses these questions through five activities: a regularly updated literature review, an internal, USAID learning “dojo,” a learning network of implementing partners, a CLA case analysis and additional studies. Findings from the literature review and initial quantitative and qualitative studies provide preliminary support for the link between CLA and improved organizational and development outcomes. They also describe how collaborating, learning and adapting work together in development contexts. The approach and early findings may be useful for a broad audience, including both academics and practitioners, interested in how an evidence base can be built and how methodological challenges are being addressed.

**Keywords:** international development, organizational learning, organizational development, USAID, CLA, adaptive management

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# **Abstracts Only**



# How to Study the Influence of Language on Knowledge Sharing in Multilingual Organizations: Insights From Sociolinguistics

**Farhan Ahmad**

Åbo Akademi University, Finland

**Abstract:** Background – Knowledge sharing is an important collaborative activity that plays a significant role in the success of an organization. As multilingual workplaces are becoming common, there has been some interest in analyzing the influence of language (diversity) on knowledge sharing in organizations. Most of the previous research adopts a macro perspective on language, which focuses on structural and social aspects of language, while studying knowledge sharing in multilingual organizations. For example, this research studies the effect of language competency in the corporate language, language distance between knowledge sharing employees and language-based socialization on knowledge sharing in multilingual organizations. Purpose - This conceptual paper proposes that the relationship between language and knowledge sharing is very complex, therefore, the macro perspective of language provides us only a limited understanding of this relationship. The main aim of this paper, therefore, is to present the micro perspective on language and to show how this perspective can be helpful in the development of our understanding of the influence of language on knowledge sharing between linguistically diverse employees. By grounding language in micro-macro frameworks, it is explained that the linguistic behavior (language practices) of the employees rather than their linguistic characteristics (capability to speak common corporate language) should be our main focus of analysis to understand the influence of language on knowledge sharing in multilingual organizations. Implications – A systematic approach should be adopted to handle language differences in knowledge sharing in multilingual organizations. This means that multinational organizations should look at problems specifically related to language behavior, devise rules and procedures to solve these problems, and implement these rules in knowledge-sharing interactions between linguistically diverse employees. Moreover, clear protocols describing the expected linguistic-behavior norms for different knowledge-sharing-rich domains such as meetings should be developed. Originality/value - Research on language and knowledge sharing is in its infancy. In this regard, this effort of proving an alternative conceptual framework to study the relationship between language and knowledge sharing is a beneficial addition in the knowledge management research.

**Keywords:** knowledge sharing, language diversity, multilingual organization, multinational organization

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## **The Tricky Baseline of Enterprise Social Networks in the Workplace: A First Approach**

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<sup>2</sup>IAE Business School, Argentina

**Abstract:** Engagement. The companies' Holy Grail. All companies try to do it. One of the "secret weapons" to do that is called "Enterprise social media platforms". These tools are used in organizations to give employees a virtual community where they can exchange information, knowledge and activities, among other tasks. Although internal social media could be an important issue for many big (and not so big ones) companies to date, there seems to be a very limited understanding of the usage and outcomes of it usage for work purposes: at a glance, it doesn't work as external social networking platforms do, or, at least patterns of private and corporate usage differ. Which is the difference between social networks in "regular life" and Enterprise social media platforms? Why this tool doesn't work in companies 'life? (At least, not as expected). In a first approach we could mention that employees could have different motivations and incentives to use them. In this paper, our goal is to shed a light (throughout quality research) about which are those incentives and motivations to use Enterprise social media platforms.

**Keywords:** corporate social networks, knowledge sharing, incentives, motivations

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## **Resource Integration and the Internet of Things: A Synergetic Combination?**

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**Abstract:** The Internet of Things is transforming the business ecosystem according to a "connected life" (Li & Li, 2017). The IoT enables a smart life as it allows people to manage different activities through their smartphones or notebook (Boulos & Al-Shorbaji, 2014) contributing in simplifying everyday life.

Furthermore, the IoT offers a lot of opportunity to manage the “big data”, affecting decisions and actions of firms (Michel, 2014). Companies are transforming themselves to extract value from traditional industrial sectors by delivering digital, data-rich service. Cisco predicts the IoT boosts global corporate profits by twenty-one percent and its market is to be \$19 trillion dollars (Kharif, 2014). The IoT influences the communication and decision making; Given this, the IoT seems even more essential within the B2B relationship context; specifically we argue that, according a broadened view of service innovation (Lusch & Nambisan, 2015; Akaka, Vargo, 2012), the IoT works as “service platform” that is “a modular structure that consists of tangible and intangible components (resources) and facilitates the interaction of actors and resources (or resource bundles)” through clear protocols of exchange (p.162): the service platform support the value co-creation process (Vargo & Lusch, 2004) enabling the resource integration by leveraging resource liquefaction and enhancing resource density (Lusch & Nambisan, 2015). The research unfolded considering a single case study, the Predix Platform of GE, as this approach was considered useful in gaining in-depth, holistic understanding of the phenomenon studied. The IoT offers opportunities for the development of new competitive business. The paper shows that the development of the IoT support firms in managing business relationships in new ways that they can drive increased levels of productivity and business impact. This paper witnesses that the IoT may support value co-creation. The Predix GE case study highlights that IoT works as infrastructure that enables the additional areas of support to value co-creation: i) facilitating interactions among actors; ii) internal processes and iii) adapting transparency of activities. The study contributes to advance knowledge about Resource Integration exploring for the first time the process within the challenging and becoming “Internet of Things” scenario.

**Keywords:** IoT; resource integration; ecosystem, B2B, service innovation

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## **Proposing a Model for the Impact of Knowledge Management on IT Projects**

**Farnaz Iravani and Mehdi Shami Zanjani**

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**Abstract:** With the rapid growth and expansion of knowledge and information technology, the structure of projects has become more complex. To make progress, organizations are compelled to use knowledge management to effectively manage resources and cost. Some researchers view the lack of knowledge management as the main reason projects fail to meet time, cost, and

quality targets. These researchers believe the primary reason projects fail is that project managers do not know what they should do and that this is a sign of a weak knowledge management in projects. It is evident that researches that link knowledge management to performance, in particular in information technology projects, are sporadic. In the past decade, managers of organizations have been seeking ways to improve the performance of projects and gain a competitive advantage to differentiate themselves from competitors. Knowledge management is one of the most important approaches that has been considered by organizations. The goal of this research is to investigate the effects of knowledge management and its processes (creating, applying, sharing, and storing knowledge) on the performance of information technology projects in Iran. Given that we analyze knowledge management processes in projects, we incorporate the team size, which is an important characteristic of a project, as a moderator variable to examine the effect of each knowledge management process on performance, both with and without the moderator variable. We collect data using a survey of managers and analysts in Iran who are responsible for information technology management projects and apply single and multiple regression models on the survey results to investigate the relationship between project performance and knowledge management processes. Our results show that all four knowledge management processes have a linear relationship with project performance. Also, team size has a moderating effect on the linear relationship between knowledge sharing and performance in IT projects, and it significantly increases the coefficient of determination. Finally, the ranking of the four processes within the data collected from questionnaires indicates that knowledge storage is accomplished more than other processes.

**Keywords:** knowledge management processes, IT projects, team size, regression analysis

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## **Images of Knowledge Workers: A Critical Review**

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**Abstract:** There is still little convergence among scholars as to how knowledge workers should be effectively led. The root cause of this divergence seems to be that a consensus on how to define knowledge workers and what distinguishes them from other classes of workers has not been reached. In this paper, we review and critically assess the concepts that have been proposed for effective leadership in a knowledge worker context. Synthesizing available evidence, we demonstrate that the foundation for proposed leadership structures is weak. We conclude that in order to move this field forward, a firmer theoretical background



for understanding knowledge workers is needed. We suggest that such a foundation can be developed from research in educational psychology, a field that partly has focused on the global effects of higher education on individuals.

**Keywords:** knowledge work, knowledge worker, leadership

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## **Knowledge Management, Skill Development and Work Accomplishment**

**Manoj Kumar Lal**

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**Abstract:** The compilation and sharing of knowledge in a structured way to build skills that positively impact our daily work - is an area of research for a long time. This paper proposes a new framework of knowledge management; with four knowledge levels and eight building blocks. These four levels represent varying degree of information abstraction and when nested within eight building blocks, it creates a structured knowledge capture model. This framework helps to build a structured knowledge base for the 'as is' state, where the information is unstructured and is in the form of prose, poetry, diagram or specification. The traditional knowledge management tools mainly deal with storing of documents and providing advanced search facilities for extraction of the relevant information. This framework allows a direct access to knowledge (as it is structured) enabling increased reuse and easier dissemination. This framework can be used for managing knowledge across subjects - from spirituality to entertainment, industrial to agriculture, with information abstraction at various levels – from an event of insurance claim to the detailed claim processing by the insurance company. It collates the information in a single repository, providing a single view of the truth, avoiding duplication. It is a significant improvement from 'as is' where the information is kept in individual silos, with many duplications that are sometimes even contradicting. The presentation explains the framework in a simple and structured way with various real life scenarios aided by schematic diagrams. Structured information collation can help significantly to facilitate skill development.

**Keywords:** knowledge building blocks, knowledge abstractions, knowledge model, knowledge reuse, knowledge digitisation

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# The Knowledge Creation and Organizational Effectiveness: Reality or Dream?

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**Abstract:** In the current knowledge-driven economy, it is crucial to understand how the knowledge is created within organizations and its link to organizational effectiveness. The most important source of a company's sustainable competitive advantage is the capability to create and use the knowledge. In this sense, our theoretical research framework is based on the organizational knowledge creation theory to explain the dynamic process of knowledge creation through the SECI process (Socialization, Externalization, Combination and Internalization) formulated by Nonaka in 1994. This relevant topic is generally devoted at addressing 'how' knowledge is converted within organizations. For that reason, the main aim of this research is twofold: (1) to adapt and validate a scale of knowledge creation (KMC), bringing the original Nonaka's model to the 21st century; and (2) assess the relationship between KMC and organizational effectiveness (OE). The proposed scale consists of 16 items in the four dimensions of knowledge creation process. The quantitative study was conducted in January 2017 using a survey of 231 employees. The data are limited to six Croatian companies from different industries. Exploratory factor analysis (EFA) and structural equation modeling (SEM) was performed to assess measurement scales and structural models using the questionnaire data through SPSS and EQS software. From the approach of knowledge creation theory, the four modes of the conversion between tacit and explicit knowledge are the basis from at individual level to inter-organizational level. The findings show that KMC is multifactorial, composed by the four original dimensions: socialization, externalization, combination and internalization. The four dimensions reflect in similar intensity the KMC construct. Additionally, a positive and significant impact of KMC on OE is found. This research makes a contribution to existing literature by updating and testing SECI scale of Nonaka and examines the relationship of knowledge creation and organizational effectiveness. Theoretical and practical implications are also suggested in the article. In order to promote innovation and competitive advantage in this complex environment, companies must pay attention to understand how the knowledge creation process is made in companies.

**Keywords:** creation knowledge management, organizational effectiveness, SECI model

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## **Narb-Based Alternative Analysis of Tweets Related to US Elections**

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**Abstract:** The use of narrative bits – narbs – has been discussed as an alternative means of looking at opinions of the those who are producing narbs, for instance, in the form of tweets. The 2016 US Presidential elections witnessed significant use of tweets at all levels of the political discourse. A large set of tweets are analyzed here using the narb-based analytic process to offer an alternative narrative related to the matter of “leaks” as witnessed through thousands of narbs based on a specific hashtag. The results suggest that different narratives were being created and circulated using narbs and in the future these narratives should become a part of the analysis of political discourse. In this case the narbs were composed of nearly 11,000 tweets that were collected when the hashtag “DNCLeaks2” was “trending” as a popular topic amongst the people using the micro-blogging system. The specific tweets were collected and analyzed to extract a narrative map. The narrative map shows the negative association between “dncleak2” and “Negative Opinion” reflects the acceptance of this hashtag as a symbol of political corruption. The emails that were selected and retweeted by Trump supporters indicate a strong understanding of the style Trump uses to critique the corrupt system. When Trump accuses the liberal media of being biased against him, his supporters produce the correspondence between CNN and the Clinton campaign on what questions the former entity ought to ask of Donald Trump. When Trump argues that the system is rigged, his followers show their support by retweeting the messages in which the desire to prevent Bernie Sanders from receiving the Democratic nomination was articulated. While Clinton also had a social media machine and successfully circulated her views on said platform, if anything ought to be gleaned from the themes of this election it is that a sense of injustice is a better message around which to rally the disaffected than the pursuit of justice itself.

**Keywords:** narb, discourse, narrative, analysis, politics

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# Cities and Symbolic Knowledge: A Case Study From Sagrada Familia in Barcelona

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**Abstract:** Symbolic knowledge-driven innovations can play an important role in the economic development of cities and regions. Cultural events and infrastructures can act as powerful connectivity engines, generating new connections, rewiring links, and repositioning institutions/cities/regions on the global map. In the current knowledge-driven economy, the recombination of different types of knowledge can act as powerful innovation engines, especially when Innovation is understood as Connectivity. Within this framework, this paper aims to contribute to the understanding of Gaudí-driven connectivity for the city of Barcelona in relation with Gaudí's masterwork Barcelona's Sagrada Familia. The mental image of Barcelona is connected to a number of Art Nouveau buildings by Antoni Gaudí (several of them declared World Heritage Sites by UNESCO). A "semantic decomposition" of this emblematic building is performed, using semiotics, semiology, and semantic clustering in Google as an approach to the fingerprint of mental connectivity. A deterministic model of the Google Trends data is made use of. Findings show that after November 2010 there is a structural change in both trend and seasonality. In November 2010 Gaudí's Sagrada Familia was consecrated and made a minor basilica by Pope Benedict XVI. One of the contributions of this research is the assessment of the Sagrada Familia's impact on the semantic connectivity of the city of Barcelona in digital networks, a critical issue in the postmodern knowledge-intensive economy. The main aim of this paper is to find out an appropriate deterministic time series model using the latest selection criteria that could best describe the Google Trends Sagrada Familia brand pattern in Barcelona during the time period from January 2004 to December 2016. A total of 156 monthly data have been used for time series analysis with the software E-Views.

**Keywords:** symbolic knowledge, Barcelona brand, digital economy, information goods, big data, network analysis, Sagrada Familia, Gaudí

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# Role of Trust in Recruitment and Induction Process: Findings From a Multi-Cultural Study

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**Abstract:** This paper discusses trust as intangible resource within organization and its Human Resource Management (HRM). Trust is seen as intellectual capital and studied empirically in early HR processes of recruitment and induction. The paper focuses, more specifically, on studying how trust or mistrust develops and trust may be restored following the violation and breach of trust during the selection, re-entry and newcomer phases. Trust-building or mistrust development start as early as job seekers look at the employers' information and advertisements and interact with recruiting experts or professionals of the organization. Strategic recruitment and selection are the key HRM practices and the induction period a critical time for a newcomer while often underestimated only as routine. Moreover, HRM is seen as the most influential areas for trust development, playing a key role in building trust. This is why the topic deserves more consideration from the perspective of trust as quite scarcely studied empirically. The aim of the paper is to increase awareness and understanding of the importance of trust during the early HR processes. The originality of the paper lies in three point: Providing new empirical findings, by applying a qualitative research approach and data gathered from multiple sources and three different countries. The purpose of the paper is to provide both insights for further research and implications for HR managers, professionals, and leaders for managing human intellectual capital (HIC) more effectively. The research questions is how trust/mistrust develops in recruitment and induction process. The study implies that the pre-entry and newcomer phases are the opportunities to trust-building that should not be underestimated or ignored as an everyday routine.

**Keywords:** trust, mistrust, recruitment, induction process, HRM, multi-cultural, case study, narratives

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# Intellectual Offshoring as a Tool of Regional Knowledge Management System

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**Abstract:** The problem of knowledge management in the context of offshoring is generally related to the issues of intellectual property rights defense (Teran, 2001; Knapp, 2003; Ghelfi, 2005). This study differs from these research issues by the analysis of so called intellectual offshores from the viewpoint of regional economies. Intellectual off-shores are considered as specific tools for increasing efficiency of knowledge and technology transfer. One of the innovative methods for offshoring is the spatial crowd-investing. It is used for attracting funding to intellectual offshores development. Crowd-investing becomes increasingly popular in the conditions of limitedness of sources for investments. Intellectual off-shores are usually perceived as large infrastructure projects. Usually, when pooling funds for such projects, the minimal investment stock is fixed; this helps to limit the number of potential stakeholders and makes relationships between them more transparent and simple. It is worth noting also, that such projects, in fact, erase the difference between institutional and private investors in their access to regional knowledge stock. It means that both institutions, as funds, and private investors can participate in large infrastructure projects funding and knowledge creating. The pooling of private stakeholders diminishes the regional budgets' burden and helps to solve the problem of effective knowledge and technology transfer within regional economies.

**Keywords:** intellectual off-shores, knowledge and technology transfer

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# Assessment of Knowledge Risk Factors and Their Mitigation

**Haley Tsang and W.B. Lee**

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**Abstract:** Most Knowledge Management (KM) programs place an emphasis on the importance of capturing, retaining and sharing organizational knowledge among its stakeholders. As the beneficial effect of these processes often cannot be felt immediately, there can be a lack of urgency to implement KM initiatives from the senior management. To overcome such lack of incentives to implement KM, another approach is the assessment of knowledge risk and its disastrous effect on the daily operation of a company. Knowledge risk refers to the potential threats caused by knowledge when it is not managed properly. For example, leakage of trade secrets to outsiders and loss of critical knowledge because of system security problems or employee turnover may negatively affect the reputation or even the competitiveness of a company. In this study, a tool was developed to assess the risk factors of four major types of knowledge risk occurring in companies – knowledge leakage risk, knowledge loss risk, knowledge obsolescence risk and knowledge shortage risk. This tool works with two connected assessments – (1) assessment survey and (2) validation interview. The interview was added to overcome the unavoidable drawback brought about by the survey approach which is the subjective assessment ratings given by assessors. During the interview, belief degrees as in the belief decision matrix were also elicited based on the evidences collected. The ratings and the belief degrees from the survey and interview respectively were modeled to generate the final knowledge risk factor levels. In this way, the knowledge risk factors of enterprises can be evaluated systematically and reliably. Case studies have also been conducted for this tool with positive feedback. Methods to prevent or reduce knowledge risk factors for business sustainability were also proposed with illustrations from industrial cases. This study contributes to the under-research field of the knowledge risk and suggests practical ways for managers to combat knowledge risk.

**Keywords:** knowledge risk factors, knowledge risk, risk management, risk assessment, knowledge management

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# Knowledge Sharing Utilizing Student Input to Scenario Building in Gaming

**Tone Vold, Ole Jørgen Ranglund, Geir Ove Venemyr, Bjørn Tallak Bakken and Hanne Haave**

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**Abstract:** Crisis hit organizations and it is essential to be as prepared as possible. To handle and organize in crisis it is important to keep updated, learn and train for as many eventualities as possible. The increased focus and rapid spread of information both in social media and “ordinary” media, also requires competencies. For organizations that are not call out services like police and others, this work comes on top of their ordinary work load. And even for the work force that are in call out services, it is important to keep training and learning more. Knowledge sharing is essential and acknowledging the competency the different individuals have could be extended. At The Inland University of Applied Sciences, the Bachelor in Crisis Management is recognizing the competency with the students and are now utilizing student input when developing scenarios used in the education. The students are themselves mostly from call out services, municipalities or from organizations with volunteers (eg. Red Cross or similar). The acknowledgement of their vast experience comes at hand when developing scenarios for training during their three year study. Real life exercises are expensive; it costs time, effort and money. An alternative to a table top exercise is then to use a game. Generally when using a game, it is a game designer or faculty staff designing and deciding on the scenario. Here, it has been tested out how to utilize the students own experiences to create the scenario and be game masters for their own scenario while peer students are playing and simulating the incident. This way of organizing knowledge sharing between the students has provided the students with a unique opportunity of learning from each other. The preliminary results from observations, reviews and interviews are that the learning outcome is higher than expected. Not only do they share knowledge, but the opportunity of utilizing their own and others’ competencies’ (previous and learned) into the scenario building has been contributing to their enhanced learning outcome.

**Keywords:** knowledge sharing, student input, scenario building, crisis management

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# **Additional Materials**



# The importance of paper citations and Google Scholar

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# Electronic Journal of Knowledge Management

**ISSN: 1479-4411**

EJKM is published in the UK  
by Academic Conferences and Publishing International Limited  
33 Wood Lane, Sonning Common, RG4 9SJ, UK  
administrator@ejkm.com, T: +44 (0)1189 724148, F: +44 (0)1189 724691

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