10th International Conference on Knowledge Management
November 24-26, 2014, Antalya, Turkey

Innovation, Knowledge Discovery & Technology Management

Program & Abstracts
**Program**

**Monday, November 24, 2014**

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<td>Suzie Allard, University of Tennessee, Knoxville, USA</td>
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<td>Andrea de Polo Saibanti, Fratelli Alinari IDEA SpA, Florence, Italy</td>
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**Conveners:**
- Vittore Casarosa, ISTI-CNR, Pisa, Italy
- Donatella Castelli, ISTI-CNR, Pisa, Italy
- Seamus Ross, University of Toronto, Canada
- Anna Maria Tammaro, University of Parma, Italy

**Speakers:**
- Data Science: A New Discipline or an Agglomeration of Skills?
  - Gobinda Chowdhury, Northumbria University, UK
- Technical Skills in Library and Information Science Classrooms
  - Michael Seadle, Humboldt University, Germany
- A Data Science Preparatory Course
  - Wolfram Horstmann, Göttingen State and University Library, Germany
### Tuesday, November 25, 2014

#### 08:00-08:30 Registration

**Joint Session: IMCW2014 Opening (Hall 1)**  
*Chair: Yaşar Tonta, Hacettepe University, Turkey*

- **08:45-09:00**  
  *Opening Speeches*  
  *Serap Kurbanoğlu, Hacettepe University, Turkey*  
  *Nico Sandluchs, Goethe-Institut, Turkey*  
  *Susanne Riedel, Bielefeld University Library, and Library & Information International (BII), Germany*

- **09:00-10:00**  
  *IMCW2014 Keynote Speech*  
  *Inverting the Pyramid: Maximising the Value of Data to Society*  
  *Kevin Ashley, Digital Curation Centre, UK*

- **10:00-10:30**  
  *IMCW2014 Invited Talk*  
  *Open Access in the Data: Research-Computation-Information Pyramid*  
  *Şirin Tekinay, Kadir Has University, Turkey*

#### 10:30-11:00 Break

#### 11:00-12:30

**ICKM2014 Invited Talks Session (Hall 1)**  
*Chair: Franz Barachini, VIST, Austria*

*Innovation Science: The Past and Future of a Paradigm Shift*  
*Aykut Ankan, Yeditepe University, Turkey*
Managing Open Access Research Content and Data: Towards a Sustainable Model  
Gobinda Chowdhury, Northumbria University, UK

Examples from Leading-edge Practical and Academic Works on Discovery and Management of Knowledge and Technology: CEES, UbiPOL, STORK, GEN6 and BIHAP Initiatives  
Tunç Medeni, Yıldırım Beyazıt University, Turkey

12:30-14:00 Lunch

14:00-15:30 (Parallel Sessions)

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Chair: Laszlo Z. Karvalics, University of Szeged, Hungary  
Filtering Based Rough Set Theory to Support the Inter- and Intra-organizational Knowledge Sharing  
Sarra Bouzayane, University of Picardie Jules Verne-Amiens, France; Inès Saad, France Business School; Faiez Gargouri, University of Sfax, Tunisia & Gilles Kassel, University of Picardie Jules Verne-Amiens, France  
Deus ex Machina? The Era of Cognitive Systems might Slaughter a Sacred Cow of Knowledge Work  
Stefan Holtel & Makbule Özdemir, brightONE, Germany  
The Role of Workplace Democracy as a Means to Develop Trust within Organisations and to Drive KM Initiatives  
Roderick Smith, Robert Gordon University, UK  
Information Environment for Abductive Management  
Laszlo Z. Karvalics, University of Szeged, Hungary |
| **Paper Session 2: Knowledge Management and Collaboration**  
Chair: Isto Huvila, Åbo Akademi University, Finland  
Estimating Utterance Tags in Collaborative Learning Using Prosodic Features  
Yuki Hayashi, Osaka Prefecture University, Japan; Shunsuke Osaragi, Seikei University, Japan & Yukiko I. Nakano, Seikei University, Japan  
Opening Access to Rare Collection through Collaboration: The Experience of Maklib and BLDS  
Andrew Mwesigwa & Maria G. N. Musoke, Makerere University, Uganda  
Modeling the Relationship between Human Intelligence, Knowledge Management Practices, and Innovation Performance  
Mohamad Fauzan Noordin & Zulkarnain Abdul Karim, International Islamic University Malaysia, Malaysia  
A Multi-perspective Framework for Knowledge Sharing Research  
Jannica Heinstrom, Isto Huvila, Gunilla Widén, Eva Österbacka & Farhan Ahmad, Åbo Akademi University, Finland |
| **Paper Session 3: Semantic Technologies and Ontologies**  
Chair: Denise A.D. Bedford, Kent State University, USA  
Roadmap for Successful Knowledge Management System Deployment  
Abdulrahman Gharamah & Mohamad Fauzan Noordin, International Islamic University Malaysia, Malaysia  
Automated Categorization of Scanned Bank Documents from Extracted Text Content  
İlkhan Cüceloğlu & Hasan Oğul, Başkent University, Turkey  
Knowledge Capture at Wisdom Level: The Case of Religious Texts  
Roslinia Othman & Siti Fatimah Mohd Tawil, International Islamic University Malaysia  
Barriers to the Uptake of Knowledge Management Research  
Denise A.D. Bedford, Kent State University, USA |
**15:30-16:00 Break**

**16:00-18:00**

**Joint Panel (Hall 1)**

*iSchools and the Globalization of LIS Education*

Convener: Suliman Hawamdeh, University of North Texas, USA

Herman Totten, University of North Texas, USA

Michael Seadle, Humboldt University; Chair of the iSchool Caucus, Germany

Gobinda Chowdhury, Northumbria University, UK

Claire McInerney, Rutgers, The State University of New Jersey, USA

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### 18:00-19:00 (Parallel Sessions)

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<td>Chair: Jean-Pierre Booto Ekionea, Université de Moncton, Canada</td>
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<td>Knowledge Acquisition and Creation: an Investigation of Sources and Tools Used by Faculties in the UAE Abdoulaye Kaba, Al Ain University of Science and Technology, United Arab Emirates &amp; Chennupati K. Ramaiah, Pondicherry University, India</td>
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<td>Health Knowledge Workers: Strategies for Literacy Development Sajjad Rehman, Kuwait University, Kuwait</td>
<td>Application of Self-censor in Social Media Use: A Research on Hacettepe University Bülent Yılmaz, Hacettepe University, Turkey &amp; Demet Soylu, Yıldırım Beyazıt University, Turkey</td>
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<td>Towards the Development of an Instrument for Measuring Organizational Knowledge Management Capabilities Jean-Pierre Booto Ekionea &amp; Gérard Fillion, Université de Moncton, Canada</td>
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**Gala Dinner**

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**Wednesday, November 26, 2014**

| 08:30-09:00 | Registration |

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**Joint Session (Hall 1)**  
*Chair: Serap Kurbanoğlu, Hacettepe University, Turkey*

| 09:00-10:00 | **IMCW2014 Keynote Speech**  
Managing and Mining Historical Research Data over Time  
*Michael Seadle, Humboldt University; Chair of the iSchool Caucus, Germany* |

| 10:00-10:30 | **IMCW2014 Invited Talk**  
It’s All About Data: What is Research Data in the Arts and Humanities?  
*Rafael Ball, University Library Regensburg, Germany* |

| 10:30-11:00 | Break |

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**11:00-12:30 (Parallel Sessions)**

**Hall 2**

*Paper Session 7: Knowledge Relationship Discovery*  
*Chair: Paul Cleverley, Robert Gordon University, UK*

- Conceptualizing the Framework for Patent Discovery System for Islamic Finance and Banking  
  *Roslina Othman, International Islamic University Malaysia, Malaysia; Mohamad Fauzan Noordin, International Islamic University Malaysia, Malaysia; Tengku Mohd Tengku Sembok, Universiti Pertahanan Nasional Malaysia, Malaysia & Zahidah Zulkifli, International Islamic University Malaysia, Malaysia*

- A Knowledge Management Perspective to Online Patient Access to Medical Records  
  *Isto Huvila, Åbo Akademi University, Finland*

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**Hall 3**

*Paper Session 8: Knowledge Management Concepts*  
*Chair: Claire McInerney, The State University of New Jersey, USA*

- Knowledge Management through Quality Management: The Accreditation Efforts of the Forensic Laboratories in the TNP  
  *Ahmet Can, The Police Forensic Laboratory in Diyarbakir, Turkey*

- Factors Impacting the Implementation of Enterprise Content Management Systems  
  *Stephanie Horne & Suliman Hawamdeh, University of North Texas, USA*

- The Knowledge Management Enable Model: Making the Connection with Senge's Five Disciplines  
  *Claire McInerney & Connie Pascal, The State University of New Jersey, USA*

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**Hall 4**

*Paper Session 9: Knowledge Management Tools and Technologies*  
*Chair: Tereza Raquel Merlo, Capella University, USA*

- KM Process in an Advanced, Technologically Complex Firm: A Case Study of PT. Dirgantara Indonesia  
  *Dedy Sushandoyo, Didin Kristinawati, Jann Hidajat Tjakraatmadja, Lenny Martini & Nuraisa Hidayanti, Bandung Institute of Technology, Indonesia*

- The Role of Power and Jealousy in Cooperation – a Theoretical Framework for Artificial Agents  
  *Franz Barachini, VIST, Austria*

- KM Technology: HCI & Cultural Perspective on Pattern of Retrieval, Organization, Use, and Sharing of Information and Knowledge  
  *Tereza Raquel Merlo, Capella University, USA*
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<td>Facilitating Serendipity: the Role of Multi-query Text Co-occurrence Facets in Enterprise Search and Digital Library Results Paul Cleverley &amp; Simon Burnett, Robert Gordon University, UK</td>
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12:30-14:00 Lunch

14:00-15:30 (Hall 3)

BIHAP (Knowledge Mapping Project)
Convener: Nusret Güçlü, Stratek, Turkey

Development and Maintenance of Sustainable Ontologies
İhsan Tolga Medeni, Soner Yıldırım, Onur Demirors, Middle East Technical University, Turkey & Tunç Medeni, Yıldırım Beyazıt University, Turkey

Chaos and Complexity in Knowledge Management Project
Erkan İnan, Stratek, Turkey

Construction of Thesaurus in the Scope of Knowledge Map: The Experience of BIHAP Gülten Alır, Tunç Medeni, Yıldırım Beyazıt University, Turkey; İhsan Tolga Medeni, Middle East Technical University, Turkey & Erkan İnan, Stratek, Turkey

15:30-16:00 Break

16:00-17:30 (Parallel Sessions)

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Chair: Shaheen Majid
Nanyang Technological University, Singapore |
| Paper Session 11: Knowledge Discovery and Data Warehousing 
Chair: Peter Becker, The Hague University of Applied Sciences, The Netherlands |
| Paper Session 12: Knowledge Management Taxonomies 
Chair: Oksana Zavalina
University of North Texas, USA |

17:30-18:30 Conference Dinner at Elephant Hotel, Cinderella Street, London
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<td>Nasrullah Khilji &amp; Stephen Roberts, University of West London, UK</td>
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<td>and Effectiveness: The Transformation of Planning System in the UK</td>
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<td>Knowledge Acquisition/Utilization Model and Context Management in</td>
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<td>Logico-Linguistic Knowledge Representation for Al-Quran</td>
<td>Mohamad Fauzan Noordin, International Islamic University Malaysia, Malaysia; Tengku Mohd</td>
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<td>Tengku Sembok, National Defence University of Malaysia, Malaysia; Roslina</td>
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<td>&amp; Jerome Singleton, Dalhousie University, Canada</td>
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<td>Ethical Issues in Data Mining</td>
<td>Mandana Mir Moftakhari &amp; Güleda Doğan, Hacettepe University, Turkey</td>
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<td>Big data in LIS Education: What to Teach?</td>
<td>Peter Becker, The Hague University of Applied Sciences, The Netherlands</td>
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<td>Enhancing Access to Knowledge Management Literature – Proposal for</td>
<td>Denise A. D. Bedford, Kent State University, USA</td>
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<td>Domain-Based Classification Scheme and Thesauri</td>
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<td>Knowledge Organization of Folklores on Greater Mekong Sub-region</td>
<td>Kulthida Tuamsuk, Khon Kaen University, Thailand; Nattapong Kaewboonma, Rajamangala</td>
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<td>University of Technology Srivijaya, Thailand; Wirapong Chansanam, Chaiyaphum Rajabhat</td>
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<td>University, Thailand &amp; Sunee Leopenwong Khon Kaen University, Thailand</td>
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<td>Metadata Changes: Meeting the Evolving Requirements</td>
<td>Daniel Gelaw Alemneh, Oksana Zavalina, Mark Phillips &amp; Hannah Tarver, University of North</td>
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17:30-18:00 (Hall 1)
Joint ICKM & IMCW Closing Session
Chair: Yaşar Tonta, Hacettepe University, Turkey
Joint Workshops

Workshop 1: Research Data Management: Getting Your Organization Started

Suzie Allard & Arsev Aydinoglu

Research data is valuable to both the researcher and the researcher’s organization. The proliferation of data from a diverse range of disciplines and instrumentation requires today’s information professional to have a strong proficiency in data management best practices. This half-day workshop introduces key ideas and best practices that will help every information professional gain knowledge of data management and plan for providing data research services to others in their organization. We will discuss the rationale for data management planning and the reason we should be concerned with data stewardship/curation. We will explore the context of data as a driver for innovative science and discovery, interdisciplinary work, and as a persistent asset for the researchers’ institution. From this exploration participants will begin developing a strategy for their own work at their organization. The workshop will also provide structured opportunities for participants to develop a network with other information professionals who are working with research data whether they have been doing so for years or have just begun.

Workshop 2: Large Scale Digitization: The Save Our Memory Project

Andrea de Polo Saibanti & Tomas Foltyn

The tutorial has been made in order to provide concrete recommendation and direct information to the audience of the IMCW conference regarding the best practice on digitization for large scale imaging collections (ie. Photography and books). This tutorial is providing specific directions on the latest solutions available in the market to convert from analog to digital form precious content in the most effective, efficient, technical advanced and economically driven way. The author will cover important aspects in the digitization workflow, from the preferred capturing source to tone mapping, from HDR control to the best file format for long term preservation. In addition, a presentation named: “Living in the Digitization World” will be made covering specific issues on digitization in the Czech Republic.
Workshop 3: A Curriculum for Research Data Management: How Do You Educate the Data Scientist?

Conveners: Vittore Casarosa, Donatella Castelli, Seamus Ross & Anna Maria Tammaro

The main goal of this workshop is to contribute to a more precise definition of the content of the curricula needed for the education and training of the future information professionals, which will have the opportunity to become Data Scientists. Underlying that, there is also the objective to achieve a better understanding of the main trends in the interdisciplinary and international research in the management and preservation of research data and digital collections, and possibly contribute to a more global view of the preservation of research activities, which today are very often scattered in libraries, archives, institutional repositories, data bases, etc. This workshop is the ideal continuation of a series of workshops and events that, since 2005 are trying to understand how the educational system for information professional should evolve to keep pace with the increase of digital material and the rapid evolution of the technology. The first event was a workshop in 2005, on 'Information Technologies profiles and curricula for libraries' (held at the University of Parma), the last event was a workshop in September 2013, on 'Moving beyond technology: iSchools and education in data curation. Is Data Curator a new role?' held in connection with TPDL 2013 at La Valletta, Malta. A detailed descriptions of the events up to 2012 and an analysis of their results can be found in: A.M. Tammaro, V. Casarosa, D. Castelli, Closing the gap: interdisciplinary perspectives on research and education for digital libraries, in Proceedings of the 9th Italian Research Conference, IRCDL 2013, Communications in Computer and Information Science, Volume 385, Springer, 2013.

ICKM2014 Keynote Speech: Entrepreneurship and Entrepreneurship Teaching in a Knowledge Management Perspective

Michael R. Kristiansson

Can entrepreneurism be ‘taught’? And do you need to run a considerable risk if you want to implement an entrepreneurial project and become an entrepreneur/intrapreneur? If the answer to this question is yes, what type of risk will you have to run and how big will it be? And what about the nature and extent of this risk as well as the awareness of and tolerance for uncertainty and risk?

The keynote speech will argue that you do not need to have great visions or run a high risk when it comes to starting up an entrepreneurial project. What is required, however, is that you implement the appropriate knowledge management thinking. The keynote presentation intends outlining the principles inherent in a knowledge management strategy that aims to reduce the risk involved in initiating an
entrepreneurial project and thus in principle allows everyone to start up his or her own entrepreneurial project.

This KM strategy will be compared with more traditional risky forms of knowledge management strategies such as scanning the environment, forecasting and identifying and estimating opportunities. Concluding, a brief account will be given of the convergence of managing an entrepreneurial project on the one hand and handling the knowledge management process on the other; the implications for entrepreneurship teaching will be examined as well.

Company Presentation: CONVERIS: Managing the Complete Research Lifecycle

Philip Purnell

CONVERIS is a leading Current Research Information System (CRIS) managing information along the complete Research Life Cycle. Over 50 universities, funders and other research institutions rely on CONVERIS to manage their research information from the initial idea and grant applications, through day-to-day management of ongoing projects and their results, including publications, patents and many other outputs.

As a state-of-the-art Research Information Management System, the CERIF-based CONVERIS is completely configurable to meet each institution’s individual needs and thereby ensuring the lowest Total Cost of Ownership (TCO). Each institution can, event without involving Thomson Reuters, flexibly modify the CONVERIS data model, user rights, workflows, templates and reports to meet their continuously evolving needs and changing internal and external requirements.

Researchers can use CONVERIS on demand for CVs, public web profile, monitoring, reporting internally, to funders, and for frameworks such as the Research Excellence Framework, research managers will generate standard and tailored reports for all levels of the organization – at any time and with up-to-date information, the Research Office can reduce its administrative burden and increase success rates by replacing paper with integrated online workflow, to optimize its service towards the researchers and the library will streamline handling of publications with the seamless integration to online databases, such as Web of ScienceTM and others.

IMCW2014 Keynote Speech: Inverting the Pyramid: Maximising the Value of Data to Society

Kevin Ashley

A traditional view of data sees it as a bulk item which, through a process of successive refinement, analysis and selection, leads to nuggets of wisdom,
insight or knowledge. Such pyramidal representations can be seen in views from the worlds of knowledge management, research lifecycles and publishing. They assume that data is created with a particular purpose in mind and that only one analysis produces anything of lasting value. This is true for some cases, but it fails to represent the full potential of most data. I will argue, and show through example, that data's true value is realized by enabling reuse in contexts that can be far removed from its original creation. This includes data created for administrative and other uses as well as data created for the purposes of academic or industrial research. I will also describe some of the initiatives and services around the world that are helping to realize this value in data.

IMCW2014 Invited Talk: Open Access in the Data- Research-Computation-Information Pyramid
Şirin Tekinay

We formulate a reference framework of a triangular pyramid where information is the apex, as the end result produced by the base whose vertices are data, research and computation. A closer look reveals the bi-directionality of all edges in the pyramid. As such, one can conclude the pyramid is a self-contained system of R&D with information as the product; may it be technological products or scientific insights. However, the requirements for computational infrastructure to process big data, or produce information in real time necessitates external funding; acquisition of data necessitates external portals, and conducting research necessitates collaborations across disciplines and physical distances.

As a result, rolling the pyramid around, no matter which vertex ends up, there are external connections and dependencies. Each vertex, in its own right can be viewed as the apex drawing from the other three; so there is no right side up as far as this pyramid is concerned.

The very research work, to solve 21st century problems, requires virtual organizations that are comprised of members at geographical and disciplinary distances to each other. The human members may belong to different institutions or firms, and maybe countries. Such collaboration is burdened by national borders, and confidentiality issues. These obstacles are somewhat remedied by mobility programs, nondisclosure agreements and memoranda of understanding and hopefully, academic collegiality. Examples of facilitating research collaborations include European Commission's mobility programs.

The physical and computational infrastructure to tackle 21st century engineering problems that need to collect and process data in real time is, more often than not, made up of shared, distributed resources. This may in turn present at best bureaucratic legwork of bench fees and intellectual property agreements. Examples of shared research infrastructure include Turkish Government Planning Agency’s (DPT) Central Laboratory Facilities.
Even if we assumed no research collaborations and sufficient infrastructure on-premises, there is clearly the need to feed the pyramid with funding to collect data, to do research, to have and maintain research infrastructure and to produce or publish. Whether the end result is a product, design, know-how, service, prototype, proof of concept, theory, or information, data acquisition is usually the most costly and, when conducted towards a singular, specific purpose, the most cost-inefficient part of the budget. Long gone are the days of Bell Labs, where the AT&T monopoly generated sufficient monetary resources to keep the entire pyramid in house. Even defense R&D will often consider ways of dual use, so as to cut expenses. Simulated data is but a precursor to experimentation or analysis with real data.

Aside from the financial burden and general repetition of effort in collecting data, there is an ethical side to containing it within the bounds of an institution when the funding is obtained from pools of taxpayers’ money administered by government agencies or sponsors that have public shareholders. The US National Science Foundation has recorded successful examples of not only open access to data but also to the methods of deriving information and, in turn, knowledge, from data.

Both virtual organizations and computational infrastructures have been enabled by the 20th century digital revolutions of Computation and Communication. The 21st century digital revolution is that of Manufacturing. Like the other former two, the latter is an example of localized, individualized, and finally personal output: digital technology has allowed for the personal computer and anytime-anywhere personal communication. Personal manufacturing is in its preliminary stage, propagating around the globe primarily as Fabrication Laboratories (FabLabs) providing local, if not personal, manufacturing capabilities. Digital manufacturing uses as input 3D design data. Very deservingly, as it has started as a bottom up civil movement to democratize technology; all design data is mandatorily open to the global FabLab network. Such wealth of data facilitates the feedback loop between information and enriched data.

Indeed, one can conceive of a self-contained pyramid even to possess personal manufacturing workshop. However, with the global FabLab network taking advantage of open access and shared resources placed in the heart of the FabLab charter, it is near impossible to compete with the endlessly expanding portfolio of creativity at nano to mega scales. These are the makings of a revolution, a massive and seemingly sudden change on the face of civilization, as opposed to the slow evolution of a closed system.

This talk will place the proverbial pyramid in the context of the next digital revolution and explore how each of the vertices is indeed a portal for open access in order to usher in the next phase in our lives; the social, economic, cultural impacts to transportation, inventory, logistics, supply chains, and things we hopefully cannot imagine at this point.
Innovation Science: The Past and Future of a Paradigm Shift

Aykut Arıkan

Basing on proven epistemological foundations, Library and Information Science (LIS) has actualised its scholarly competence and maturity as a contemporary academic discipline within the taxonomy of modern sciences. The good old Library, together with its elements, functions, and organisation, has become the principal field of interest of Library Science, emerging out of the zeniths of the Industrialisation Era in the late nineteenth century. Its main focus was Organising Knowledge. Information Science on the other hand, might be regarded as a transition discipline of the Post-Industrial Era, back in the twentieth century, mainly focusing on Mobilising Knowledge while concentrating on the Information Centre as its principal field of interest. With the new dawn of the Informationalism Era in the early twenty-first century, mankind’s relationship to knowledge has reflected a novel approach: well-organised and effectively mobilised knowledge leaped qualitatively by shifting the paradigm: Utilising Knowledge. Mankind started utilising knowledge in knowledge driven organisations basically by so called white-collars as knowledge workers. In comparison to libraries and information centres, the incarnate body of this new paradigm is still uncertain. All being part of this ambiguity, whole corporations, some freshly emerging innovation centres, advanced research and development facilities, and so called Future Centres are all appropriate incarnate bodies of this new paradigm. While working on and studying all these recent developments, for the last few years now, I felt the urge of a novice academic approach, primarily to explain this novel attitude towards knowledge, and secondly, to expand the field of LIS, if possible. I attempt to nominate this novice field as Innovation Science. Within this scope, in my speech, I will try to reflect on issues such as: Scope and Fields of Study, Problems and Constraints, Theories, Methodology, and Empirical Rules, Professional Organization of the Field, Education and Research, as well as its Historical Background, Literature and Interdisciplinary Co-relations of Innovation Science.

Managing Open Access Research Content and Data: Towards a Sustainable Model

Gobinda Chowdhury

The open access movement that started in the early 1990s has significantly boosted the idea of free access to research content. Various research councils and funding bodies have recently launched their open access policies in order to facilitate free access to the outcome of research – research content and data – funded by them. These OA policies are going to bring a paradigm shift in the information and knowledge management professions and practices in a number
of ways. This talk will address various sustainability issues and challenges associated with the design and management of open access research content and data management systems. First it will discuss the basics of economic, social and environmental sustainability issues of information focusing particularly on scholarly communications. It will then critically analyse the recently introduced OA policies of some government and research funding bodies like the Australian Research Council (ARC), European Commission (EC), Research Councils UK (RCUK), Unesco, United States National Institute of Health (NIH), Wellcome Trust, World Bank, etc., with a view to analysing their implications for the economic, social and environmental sustainability of OA data and data management systems. It will then propose a model and a research framework for sustainable open access research content and data management system.

Examples from Leading-edge Practical and Academic Works on Discovery and Management of Knowledge and Technology: CEES, UbiPOL, STORK, GEN6 and BIHAP Initiatives

Tunç Medeni

The speech will bring leading-edge practical and academic works on discovery and management of knowledge and technology, benefiting from CEES, UbiPOL, STORK, GEN6 and BIHAP initiatives. CEES has aimed to develop a methodology for managerial evaluation and improvement of e-government services from the viewpoint of citizen users. UbiPOL was a recent project on using mobile devices for enabling citizens’ involvement in local government policy-making processes, incorporating also information mining and sentiment analysis for the use of public officers. At a Pan-European scale, STORK initiatives enable inter-country services for authentication and data access, and GEN6 project supports institutions to transform their electronic services using IPv6, which could have significant implications for academic learning and research. BIHAP is a Turkish project that maps the knowledge assets of the Ministry of Development with potential impacts for various institutional and societal development. It is hoped that all these projects and initiatives complement each other to provide a comprehensive and enriching perspective for ICKM2014.

Paper Session 1

Filtering Based Rough Set Theory to Support the Inter- and Intra-O rganizational Knowledge Sharing

Sarra Bouzayane, Inès Saad, Faiez Gargouri & Gilles Kassel

This paper discusses the issue of intra and inter-organizational knowledge sharing. We develop a theoretical method that consists of a recommendation system aiming at improving the knowledge sharing within and between
organizations. However, unlike the majority of previous works which dealt primarily with the sharing of explicit knowledge and considered its transmission as a purpose, our work targets not only the explicit knowledge but also the set of crucial but hardly explainable knowledge embodied in human stakeholders’ minds, called tacit knowledge. Then, we intend to develop both the transmission and the appropriation processes. To do so, we define a set of criteria on which shared knowledge has to be evaluated by their users. Moreover, our approach combines the rough sets theory, ontology and filtering techniques such as the collaborative filtering and knowledge-based filtering. Our goal is to make the knowledge the user needs, available to him, according to his profile.

Deus ex Machina? The Era of Cognitive Systems Might Slaughter a Sacred Cow of Knowledge Work

Stefan Holtel & Makbule Özdemir

In February 2011 the computer program «IBM Watson» outperformed the all-time champions of the American TV quiz show «Jeopardy!». This was achieved by several breakthroughs in the realm of artificial intelligence and had been beyond the scope and the capabilities of any digital machine for decades. Since this public humiliation of human intelligence IBM tries to bring Watson onto the market in such different disciplines as cancer diagnosis, retail calls, and wealth management. We suppose it is just a matter of time until Watson technology will populate many more knowledge-intensive work settings. First, we argue how Watson might change the distribution, delivery and exploitation of a company’s knowledge base. Second, we outline why any knowledge tool might fulfill an educational task in interaction with knowledge workers, and third, we consider a significant challenge for knowledge workers that might emerge from the fact that a decision-making machines will lack any ethical frame.

The Role of Workplace Democracy as a Means to Develop Trust within Organisations and to Drive KM Initiatives

Roderick Smith

This paper examines the relationship between the concept of Workplace Democracy and the models associated with Knowledge Management. It focuses on trust as a key KM concept and draws on the models of the Learning Organisation and Adult Learning to illustrate that there is a direct correlation between organizational attempts to embed democratic operational practices and the development of trust. In doing so the opportunity to engage with KM practices is enhanced and supported.
Information Environment for Abductive Management

László Z. Karvalics

How to make right decisions without any inferences, thanks to interiorized, deep knowledge on the given field? After defining the concept of abductivity, we present a method supporting the development of abductive capability of a company leader or a company as a whole, using the Global Workspace theory (GWS). Formulating five fundamental features of abduction, we define six steps of a corporate knowledge governance audit framework.

Paper Session 2

Estimating Utterance Tags in Collaborative Learning using Prosodic Features

Yuki Hayashi, Shunsuke Osaragi & Yukiko I. Nakano

Estimating utterance tags is an important task in detecting the states of discussion in collaborative learning. Past research has mainly focused on detecting utterance tags using text-based information. We propose in this paper an estimation method for utterance tags based on the prosodic features of speech. To achieve this objective, we manually assign utterance tags to collaborative learning discussion data. We design our models to consider several types of prosodic features, such as pitch, speech rate, intonation, and pause between utterances. We construct two types of estimation models by using a support vector machine. The results show that given six types of utterance tags, our models correctly tag over 45% of the utterances.

Opening Access to Rare Collection through Collaboration: The Experience of Maklib and BLDS

Andrew Mwesigwa & Maria G. N. Musoke

Makerere University Library (Maklib) started digitising its institutional archives, records and research output in 2006. An institutional repository running on DSpace made the digitised items visible to the rest of the world. Through a capacity building trip, one of Maklib’s academic librarians initiated a collaboration with the British Library for Development Studies (BLDS) of the Institute of Development Studies (IDS) in 2012. Exchange visits followed during when a project proposal and Memorandum of Understanding were prepared. BDLS was interested in Maklib’s research collection that was on high demand but had not been published, hence making it inaccessible. Initially, Maklib selected one hundred items on subjects specified by BLDS. The benefits of the collaborative project include: using the creative commons licenses and automated data harvesting for the first time. Maklib shares the journey and the lessons learned.
Modeling the Relationship between Human Intelligence, Knowledge Management Practices, and Innovation Performance

Mohamad Fauzan Noordin & Zulkarnain Abdul Karim

The relationship between knowledge management (KM) and innovation has been well articulated by pioneers in KM. Furthermore, there are many theoretical papers as well as empirical studies which examined the positive relationship between KM and innovation. However, these empirical studies analyzed the relationship between KM and innovation at management or organizational level. There is a need to study this relationship at the knowledge workers level to see how they really influence their organizational KM and innovation. This study aims to analyze the knowledge worker’s intelligence, emotional, and spiritual potential towards KM and innovation as well as examine the relationship between knowledge workers, KM and innovation. Survey questionnaires are used to measure knowledge workers’ intelligence quotient (IQ), emotional quotient (EQ), and spiritual quotient (SQ), their KM processes involvement, and perception on their innovation performance. Partial least square (PLS) analysis is used in the analyses to determine the relationship between human intelligence, KM processes and organizational innovation. Results indicate that EQ influenced KM and innovation the most, followed by SQ and IQ.

A Multi-perspective Framework for Knowledge Sharing Research

Jannica Heinström, Isto Huvila, Gunilla Widén, Eva Österbacka & Farhan Ahmad

This paper discusses the current state of art of knowledge sharing research, and central premises and implications of effective knowledge sharing in organizations. The aim of the paper is to propose a framework for studying knowledge sharing from multiple perspectives. A review of previous research shows that as well individual, social, organizational as societal factors influence knowledge sharing processes. It is concluded that integrated inter-disciplinary research efforts are needed in order to move the field forward.

Paper Session 3

Roadmap for Successful Knowledge Management System Deployment

Abdulrahman Gharamah & Mohamad Fauzan Noordin

Globalization and competitions are the main two challenges facing firms who are trying to sustain their success or even to stay in the market. Therefore; investments in technology, process and people become necessary for organization to ensure having desired share in the marketplace. Large firms set up advanced and complex websites and hi-tech technology to create, maintain and share knowledge internally by accumulating and applying gained knowledge.
to create economic value. Knowledge is an important focus in organization’s strategy, where knowledge is seen as vital organizations possess. Companies can become more efficient by transferring and sharing what workers know, and then they can develop learning strategies. The main objective of this research is to identify existing knowledge management practice in order to improve it. A clear roadmap will be theoretically proposed to be implemented and implanted in the corporate operational and business strategy.

**Automated Categorization of Scanned Bank Documents from Extracted Text Content**

İlkhan Cüceloğlu & Hasan Oğul

Classifying document images is an essential task for many applications. Here, we present a framework for categorizing documents which are frequently used in bank applications. The framework is solely based on the extracted text information. A feature extraction and selection technique is customized for Turkish texts. The results encourage the use of the framework in real life systems that automate daily banking activities.

**Knowledge Capture at Wisdom Level: The Case of Religious Texts**

Roslina Othman & Siti Fatimah Mohd Tawil

In knowledge management (KM), a proper capture of the explicit and tacit knowledge is very crucial. The knowledge captured at the wisdom level is important in order to uplift a strategic plan towards building tools in assisting the knowledge practitioner group. In upbringing the knowledge to the wisdom level, the knowledge that ought to be captured includes those resources for holistic problem solving and giving an impact. This research aimed to capture the knowledge embedded in the religious texts collection derived and endorsed by scholars; judged for relevance by counselors, and assessed for an impact by students. The knowledge capturing process for the explicit and tacit knowledge involved two authoritative groups: scholars and counselors. The methods were manual extraction of concepts from authentic knowledge sources and professional judgments on cases, and involved performance measures (Precision, Importance and Make a Difference). A total of six books consisting of compilations of supplications and thirteen counselors from 3 schools, with eighty-four students’ cases were examined in this research. Findings revealed that the explicit and tacit knowledge captured from the scholars in the form of Zikr and Do’a al-Ma’thur yielded a higher score on precision values and items with relevance judgments. Knowledge captured from the scholars and counselors matched when applied for the purpose of problem solving at the wisdom level. Qualified at the wisdom level, the knowledge capturing process has contributed to
the development of ontology that suits to any knowledge- or wisdom-based system aiming for impact-based use.

**Barriers to the Uptake of Knowledge Management Research**

*Denise A.D. Bedford*

We invest in research for many reasons, but among the most important is that research may inform and improve practice. Research uptake is important for professions that focus on practice. What factors contribute to research uptake is a question posed across all disciplines. Understanding these factors is important particularly for a field like knowledge management which directly supports professional practice. We know that there is a rich body of research from which to draw. And, we acknowledge constraints such as scatter of the literature due to the multidisciplinarity of the field, and discoverability challenges due to the lack of professionally developed and supported knowledge organization systems supporting the field. This research, though, looks at the research itself and considers whether uptake may be facilitated or hindered by four factors, including: (1) theoretical or applied nature of the research; (2) the intended user or practitioner; (3) the alignment with practitioners’ professional and work related interests; and (4) the interpretability of the research language.

**Paper Session 4**

**Tacit Knowledge Retention of Malaysian Engineers in the Malaysian Public Sector**

*Wan Farid Wan Ahmad & Siti Arpah Noordin*

In today's era of globalisation and information technology, mobility of the workforce is an unavoidable phenomenon. This creates knowledge loss that affects market competitiveness. Retirement and rapidly changing work patterns of younger employees are possible roots of the issue. Organisations recognise the needs to capture the tacit knowledge of outgoing retirees and hence the urgency for knowledge retention strategies and processes. This research has selected knowledge retention amongst engineers in the Malaysian public sector, to highlight the criticality of the issue. Two research questions guided the study. They are: a) how is the Engineers' strategic knowledge assets are being retained to ensure the sustainability of their values? b) How is the maturity of the engineers knowledge retention initiatives established? The study would examine the Engineers interpretations of their knowledge assets. The methodology chosen for the research is qualitative approach, and information gathering would be through semi-structured interviews. This would capture the comprehensiveness of the situational reality. This research will benefits similar organisation in developing structured knowledge retention programmes. It is also hoped that it would add value and augment the efficiency and productivity efforts in the Malaysian Public Sector.
Critical Knowledge Mapping for Indonesian Air Line Business in Order to Deal with Asean Single Aviation Market 2015

Nurul Laily, Jann Hidajat Tjakraatmadja & Achmad Ghazali

In 2015, Association of Southeast Asian Nations (ASEAN) will implementing ASEAN Single Aviation Market, which is a liberalization of air transportation services among ten ASEAN member states. ASEAN Single Aviation Market is expected to boosts economic activity growth in Indonesia and with it will come increased Indonesia’s Gross Domestic Product (GDP) and employment generation. As a flag carrier of a country with the most populous market in ASEAN, Indonesian Airline (name supressed) should be able to utilize its human capital in terms of their knowledge assets. External and internal environment analyses are used to find the root of problem of the business issues, than we developed critical knowledge mapping for Indonesian Airline. Critical knowledge mapping helps organization to identify and categorize knowledge assets within those organizations. We developed based on R. I. Ricciardi and Antonio Barroso’s (2006) knowledge map methodology which consists of five steps: (1) processes study; (2) knowledge identification; (3) construction of the knowledge domain cartography; (4) evaluation of knowledge “criticity” analysis: and (5) setting up knowledge management plan of action. This research focuses on critical knowledge map development for Flight Operation Division, which was selected using Analytic Hierarchy Process (AHP) to determine which division that urgently requires knowledge mapping. Based on the analysis, the author proposes some knowledge management suggestions for reducing the “criticity” of. Organization knowledge assets and setting up knowledge management plan of action will starts from the first week of April 2014 until December 2014. Therefore, in the beginning of 2015, it is expected that Airline will be ready for the ASEAN Single Aviation Market.

Self-explanation Support System for Enhancing Baseball Decision-making Skills

Tomoko Kojiri & Ryoyo Araki

Good decision making requires the evaluation of various factors for the given situation. The objective of our research is to introduce a system that will assist us in evaluating our own decision-making processes by explaining the validity of the process. To evaluate the validity of our decision-making process, we need to compare the factors we consider with the goal we seek to achieve. Our system consists of two supporting functions: externalization support and explanation support. The externalization support function provides an interface with which we can easily externalize our decision-making process, while the explanation support function furnishes an interface through which we can express expected future situations and explain the validity of our decision-making process. Currently, we focus on decision-making process of baseball coaches to decide the strategies for
the next batters up, and develop prototype system for baseball coaches. Evaluation of a prototype demonstrated that our system effectively enhances the decision-making skills of the baseball coaches, but does not effectively carry over to other domains.

**Paper Session 5**

**Review of Information Literacy of Knowledge Workers: A Study of Information Management Behavior of Kuwaiti Engineers**

*Abdus Sattar Chaudhry & Sarah Al-Mahmoud*

This study investigated personal information management of engineers with a view to review the level of information literacy. The study focused on information finding and re-finding, information management behavior, and methods & techniques use to manage information for future use.

**Knowledge Acquisition and Creation: an Investigation of Sources and Tools Used by Faculties in the UAE**

*Abdoulaye Kaba & Chennupati K. Ramaiah*

The main objective of this study is to identify sources and tools utilized by faculty members for the acquisition, creation, and sharing of knowledge. It also explores and analyzes perceptions of faculty members towards the factors affecting on the knowledge creation. Data were collected using online survey questionnaire through Zarca Interactive website. A total of 241 faculty members from 25 universities participated in the study. Findings of the study shows that respondents rely heavily on libraries for getting new knowledge; use frequently authoring tools to create new knowledge; and rarely or never use Web 2, Workflow Management, and Groupware for knowledge sharing. They believe that individual competencies, undertaking research projects, and knowledge sharing and dissemination are the most important factors affecting on the knowledge creation.

**Health Knowledge Workers: Strategies for Literacy Development**

*Sajjad Rehman*

A study of information and knowledge capabilities and their use in one of the public hospitals was conducted. It was found that skills and use were significantly correlated. In general, knowledge professionals lacked in their computing and knowledge competencies.
Paper Session 6

From E-Learning to Organizational Learning – A Knowledge Life Cycle Perspective on Operational Designs

Chris Stary

Learning processes are major concerns in e-learning and organizational learning, related to skill development, ambidextrous process design, dynamic capability development, agility designs, or similar management issues. Few studies exist bridging the gap between these two areas, albeit many organizations claim either working with knowledge-intense business processes, or being already a learning organization. In this contribution fundamental concepts and empirical results from both disciplines are discussed from a knowledge life cycle perspective.

First, positioning e-learning processes in business processing environments supporting single-loop processes is targeted. It reveals annotations to be of central importance to content-driven approaches. Secondly, enriching e-learning processes with double- and deutero-loop components is addressed. To that respect, view management and knowledge sharing on process drivers have moved to the center of interest. Thirdly, the importance of keeping trace of learning processes in a context-sensitive way is emphasized. A corresponding facility allows not only coupling single- and beyond learning loops, but rather increase efficiency avoiding 're-inventing the wheel'-effects. Finally, a component and feature framework is developed for intertwined e-learning and Organizational Learning support, based on the reported findings and knowledge life cycle management requirements. It ranges from articulating claims to processing work activities. Claims might either be handled in single learning loops or beyond, depending on the situation. Annotations and negotiation features are required to capture and preserve knowledge evolving over time, even for created information that has not become effective in the course of operational change management so far, e.g., encoding falsified knowledge claims.

Graduate LIS Students’ Attitude toward University Libraries and Personnel

Taghreed Alqudsi-ghabra

This is a descriptive analysis of the attitude of graduate LIS students toward university libraries and personnel using two instruments. To study students’ attitude toward the university libraries as resource centres and workers in the libraries as resource workers and helpers, a questionnaire was distributed to Kuwait university graduates of the Library and Information Science Master Program LISP. Focus groups to shed light on important issues that the questionnaire brought out will be an additional instrument used in this study. Analysis of the findings reflect on students’ confidence in university resources and on students’ competence levels too. Implications on their willingness to seek university services and the workers of the library should be clearer. Practical
implications on university hiring practices for the library system and on the course offerings at the library and Information Science program LIS master program and the university at large should become clearer.

Application of Self-censor in Social Media Use: A Research on Hacettepe University

Bülent Yılmaz & Demet Soylu

This paper deals with the definition of censorship, self-censor, history of censorship, underlying causes of censorship and self-censor, use of self-censorship in social media such as Twitter, Facebook, Friend Feed, blogs, etc. Censorship and self-censor which are embedded within each other will be handled in terms of psychological, sociological and linguistic aspect. In this study, it has been aimed to specify to what extent self-censor is used in social media basing upon Hacettepe University sample. Research population is composed of 37 senior students of Department of Information Management, Hacettepe University.

Towards the Development of an Instrument for Measuring Organizational Knowledge Management Capabilities

Jean-Pierre Booto Ekionea & Gérard Fillion

This study focuses on the development of an instrument for measuring knowledge management capabilities (KMC), which include three dimensions: knowledge management infrastructure, knowledge management processes, and knowledge management skills.

IMCW2014 Keynote Speech: Managing and Mining Historical Research Data over Time

Michael Seadle

This keynote addresses three interrelated issues in information management: 1) how to structure humanities research data for content mining, 2) how humanities data mining functions now and may function in the future, and 3) how to ensure that the data are there in 100 or more years. These three issues have an obvious curricular component as well, which is necessary in order to train students to prepare and to exploit the data. At present the management of research data takes place separately from the creation and use of that data, for example in libraries and computer centres, but that may be less true in a future where research teams include data scientists as standard and even as equal members. Concrete examples in this talk will use historical research data, but the principles apply generally to humanities research data. Research data from the natural
sciences often has a different structure and is processed differently. For that reason those data will not be discussed in this keynote.

**IMCW2014 Invited Talk: It’s all about data: What is Research Data in the Arts and Humanities?**

*Rafael Ball*

Everyone is talking about research data and its management, but nobody really knows what research data actually is. Only the frequently used examples such as climate or satellite data are relatively clear and understandable. What, however, is research data in the arts and humanities? What is it in law? Is there such a thing as data or perhaps just the “research concept”? The lecture attempts to determine a position concerning research data and does not ignore the unpleasant question whether it even makes sense to use the term in the arts and humanities.

**Paper Session 7**

**Conceptualizing the Framework for Patent Discovery System for Islamic Finance and Banking**

*Roslina Othman, Mohamad Fauzan Noordin, Tengku Mohd Tengku Sembok & Zahidah Zulkifli*

This research proposes a new approach to the development of a patent discovery system for Islamic Finance and Banking, applying Malik Bennabi’s Ideas-Force Transformation and using the TRIZ method for analysing the evolution trends for Islamic Finance and Banking. This research also proposes a method which can consider the priority and importance of TRIZ evolution trends and the technology and patent cycle. Patents are categorised by their ontologies. The objectives are to conceptualise the framework for the patent discovery prototype based on Malik Bennabi’s Ideas-Force Transformation, and develop the patent discovery technique using TRIZ method. This research uses 1000 IPs from patent databases grouped by the categories-based ontology, and the special collections digitised as searchable items. Most items range from theories, solutions to products and services. The significance of the output is the framework that yield generation of ideas in Islamic Finance and Banking towards positive social equation.

**A Knowledge Management Perspective to Online Patient Access to Medical Records**

*Isto Huvila*

The aim of this paper is to discuss from a knowledge management perspective how the ways of framing online access to medical records systems can influence
their prospective use and perceived usability. The analysis suggest that the ways how information and knowledge management systems are framed should be aligned with the projected positive and negative outcomes of the activity, and in order to be useful and used the entire socio-technical system should be conceptualised as an assemblage of these different framings.


Arne Solli

Recently the printed Parliamentary proceedings of Norway 1814-2001 were digitally re-published by the Library of the Norwegian Parliament. A five year long project in cooperation with the National Library of Norway to scan and OCR more than 2000 volumes and 200 years of political documents had come to an end. Both scanning and OCR was complicated due to different paper qualities, and also since the first 50 years of proceedings were in fracture (“gothic”) print.

The paper is divided into three parts. Part 1 discusses the differences in perspectives and use upon the same text corpora between public service and academics. Part 2 discusses the impact of such differences on the user interface, search strategies and search system. Part 3 discusses the differences in definition of what are relevant political documents.

Facilitating Serendipity: the Role of Multi-query Text Co-occurrence Facets in Enterprise Search and Digital Library Results

Paul Cleverley & Simon Burnett

Faceted search filters have been shown to improve user performance for exploratory searching. Facet terms tied to a controlled vocabulary rarely convey unexpected or non-obvious associated concepts buried within search results. Furthermore, user interface designs typically cater for single search queries so are unable to support comparison based information needs. No prior research has been identified which assesses the usefulness of multi-query word co-occurrence filters as catalysts to facilitate serendipity. Four word co-occurrence algorithms were applied to results from sample queries of an industry membership dataset. In a series of video-recorded events, sixteen scientists interacted with the displays using large touchscreens. The techniques were considered useful by 75% of the participants. Preferences were shown for certain algorithmic types and several fortuitous information encounters were identified. This research has implications for exploratory search interface design.
Knowledge Management through Quality Management: The Accreditation Efforts of the Forensic Laboratories in the TNP

Ahmet Can

Knowledge Management is a concept that has been linked with Quality Management. Both of these management approaches aim to achieve increase in organizational performance and to gain competitive advantages. Regarding the strengthening forensic capacity of Turkey, the Police Forensic Laboratories are transforming themselves towards learning organizations by employing a quality management system: the ISO/IEC 17025 standard. Similar to knowledge management systems, ISO/IEC 17025, which provides general requirements for the competence of testing and calibration laboratories, promotes continuous improvement, valuing intellectual capital, and measuring achievements. This paper raises issues to explore the approach that contains knowledge management and quality management efforts in general. The focus of the study is to review the similarities and differences of the two concepts and to investigate the current implementation of them within the organization.

Factors Impacting the Implementation of Enterprise Content Management Systems

Stephanie Horne & Suliman Hawamdeh

A qualitative case study was conducted to identify key factors that impact the success of enterprise content management (ECM) systems implementations. A theoretical framework was developed from the information systems literature resulting in a research model defining five categories of factors that impact ECM implementation success with these questions: Are there managerial, user, task, technological and content related factors that impact ECM implementation success? The research model was tested in a case study of interviews with 15 team leads and members that implemented ECM systems within their departments at a university. The results included 12 factors that were supported by the interview data as well as a small collection of documents.

The Knowledge Management Enable Model: Making the Connection with Senge's Five Disciplines

Claire McInerney & Connie Pascal

The aim of this paper is to align a knowledge management (KM) model with the five disciplines that Peter Senge describes as characteristic of a learning organization (Senge, 1990, 1994). The KM Enablers + Processes model shows how KM critical processes and their enablers create intermediate organizational
outcomes and eventually influence organizational performance. The model was tested in three separate studies, all of which were in the context of health care (Orzano et al. 2008; Alajmi et al., 2008; Pascal et al., 2013). Using mixed methods including extensive literature reviews, interviewing, observation, and data analysis, the model’s enablers and processes emerged as helpful ways to understand how knowledge is produced and shared in clinical care settings. The paper concludes by suggesting that the five Senge disciplines – personal mastery, mental models, team learning, shared vision, and systems thinking – are analogous to some of the processes and enablers of the KM Processes + Enablers model.

Paper Session 9

KM Process in an Advanced, Technologically Complex Firm: A Case Study of PT. Dirgantara Indonesia

Dedy Sushandoyo, Didin Kristinawati, Jann Hidajat Tjakraatmadja, Lenny Martini & Nurfaisa Hidayanti

The purpose of this study is to understand Knowledge Management process specifically with respect to inter-and intra-firm collaboration in the development of a technologically advanced complex product. Empirically, this study uses a case of the development of CN 235, an aeroplane co-produced by the Indonesia Aerospace firm and its key partner. The findings show that the integration of knowledge occurs through the collaboration among divisions/department within the firm. In particular, it is shown that the integration of different types of knowledge occurs when engineers working as a team developing components and integrating the components in order to act as a system. It is also shown that engineers who master different engineering disciplines may act as a knowledge integrator. Furthermore, as found, it is critical for a firm from a developing country to have collaboration with a key partner(s) in the development of such a complex product. As noted, the collaboration among the involved parties are dynamic with respect to time. Collaboration can be started by involving simple tasks and it may evolve by involving complex ones where both parties technologically share equal responsibilities. Such an evolution may occur when both parties develop required knowledge internally and during the collaboration.

The Role of Power and Jealousy in Cooperation – a Theoretical Framework for Artificial Agents

Franz Barachini

We investigate the impact of power and jealousy on cooperation. It is an unresolved issue how these two social phenomena influence cooperation. In
order to gain new insights we propose a framework using artificial agents for the simulation of populations.

**KM Technology: HCI & Cultural Perspective on Pattern of Retrieval, Organization, Use, and Sharing of Information and Knowledge**

*Tereza Raquel Merlo*

It is unquestionable that computers have become a vital part of everyday life with a critical role in the way individuals and organizations interact. One of the most appealing aspects of the human-computer interaction to both practitioners and researchers is the restructure of the pattern of retrieval, organization, use, and sharing of information and knowledge. The principle of a valuable knowledge management system in the organization is to allow ways to connect the three critical elements: technology, processes, and individuals, in a manner that will promote a learning organization through the establishment of a knowledge sharing culture. Currently, a reanalysis of the extent to which technologies have been redesigning human-computer interactions and knowledge management is underway, and among controversies, myths, and facts, it is evident that the evolution of technology over the decades has been imposing unlimited opportunities and challenges to individuals and organizations worldwide.

**Panel: BIHAP (Knowledge Mapping Project)**

**Development and Maintenance of Sustainable Ontologies**

*İhsan Tolga Medeni, Soner Yıldırım, Onur Demirors & Tunç Medeni*

Ontologies have been created to answer knowledge requirements of the organizations. Most of these ontologies have been created with the innovative goodwill to support new requirements of the organizations. However most of these projects have not been taken as long term projects and sustainability of these ontologies has not been received the deserved attention. Organizations were given up from when the bust of this innovation disappeared. For this reason in the current literature, it is not easy to find related cases for covering implementation of ontology development and maintenance. To present as best practices, two ministries’ ontologies have been studied by looking at development to maintenance stages. In this study, by looking at the implemented ontology tasks, it is possible to inspect ontology development and maintenance activities in each different available version. This brings an important aspect to see the relation between ontology tasks and related phases. For this reason, this new opportunistic view has a great potential to open new study areas in ontology domains.
Chaos and Complexity in Knowledge Management Project

Erkan İnan

As being funded as a research and developed project, BİHAP, has been launched with the aim of changing the way of managing the institutional knowledge within the Turkish Ministry of Development. The project aims at transforming the coded and the tacit knowledge from the institutional documents, from the information systems, and from people into ontologies that is the core of the knowledge representation. It has been targeted not only to create and apply a methodology for transformation of knowledge but also to identify the methods, skills, and tools to turn this transformation into a repeatable process for the rest of the public institutions in post implementation period. In addition to the complicating properties like uncertain goals and methods which are inherent from the nature of research and development projects, legal, cultural and social formation of the public institution creates a project environment with multitude of unpredictable parameters. Defying the best practices in knowledge domains like time, scope, risk, and quality management, the rich and hard to identify set of parameters has proved that managing this particular knowledge management project is a complex endeavor.

Construction of Thesaurus in the Scope of Knowledge Map: The Experience of BİHAP

Gültén Alır, Tunç Medeni, İhsan Tolga Medeni & Erkan İnan

Controlled vocabularies achieve the consistency and improve the effectiveness of the information systems. It is also one of the main tools of the ontology. The aim of this study is to share the methodology, policies and experiences of the thesaurus construction which has been developing in the scope of the Knowledge Mapping Research and Development Project (BİHAP). The Project aims to reveal the relationships of knowledge assets of Republic of Turkey Ministry of Development (MD). An empirical approach will be used, along with the deductive method, while constructing the thesaurus. The terms of thesaurus derived from institutional documents, information systems and the staff of the MD. At the end of the construction process, the thesaurus will be adapted to the ontology of MD.

Paper Session 10

An Exploratory Study of Knowledge Management for Enhanced Efficiency and Effectiveness: The Transformation of Planning System in the UK Local Government

Nasrullah Khilji & Stephen Roberts

The researcher thoroughly and critically reviewed the literature in context of planning system transformation in the UK local government to achieve and
present a better understanding about efficiency and effectiveness for improved performance. The major objective of this research paper is to explore the theoretical and conceptual planning process frameworks in order to develop knowledge based planning system empirical framework for enhanced efficiency and effectiveness. The examination of conceptual frameworks provides a background to identify and analyze key knowledge factors for both tacit and explicit domains in the perspective of an integrated knowledge based planning system. The key finding of this research paper is an integrated knowledge based planning system by examining the current state of planning system and its transformation. This research paper is based on a comprehensive review of the relevant theoretical models and a combination of prior literature that conceptualize the technological challenges in the planning system for continuous transformation.

Knowledge Acquisition/Utilization Model and Context Management in Research Activity

Toyohide Watanabe & Masanori Kanamaru

The research activity relates directly to knowledge-oriented work: interpretation of current working situation with the existing knowledge; reproduction/refinement of knowledge derived from the existing knowledge, reconstruction of the existing knowledge by newly-interpreted/newly-added knowledge, etc. In this paper, we address the knowledge acquisition/utilization process in research activity and design KAU model in knowledge acquisition/utilization process. In addition, we propose a PDC framework to promote practically the working process under our KAU model. Our PDC framework can explain the stepwise stage structure for knowledge acquisition/utilization with the activity context.

Logico-Linguistic Knowledge Representation for Al-Quran

Mohamad Fauzan Noordin, Tengku Mohd Tengku Sembok, Roslina Othman & Sharyar Wani

Web 2.0 has changed the strategy of the world. The virtual world has a large impact on the society. There is enormous data on the web but the knowledge behind the data has not been utilized even to the slightest in comparison to its size. Web 3.0 aims at knowledge extraction from the data, there is need to develop means and ways to extract the knowledge behind the data. In this area of research, Muslim researchers have directed their works towards the availability of digital resources for Al-Quran and books of Hadith since they form the foundations of Islam. However, the research done so far has not gone deep into the area of knowledge representation of Al-Quran and Hadith. The current work looks into development of knowledge representation formalism for Al-Quran using the logical base as it is expressive in nature and has proven successful previously.
even in complex situations. The logical base needs indexing in order for efficient retrieval as well. The current work also looks into enhancing the logical based indexing for better retrieval. It also aims at the development of a query and question-answering system based on the logical formalism and enhanced indexing developed. The current work has a large significance, as it will ease the process of information access to the Muslim community. Not only that the work will be beneficial for Non-Muslims to know more about Al-Quran easily and thus gaining more and more information about Islam.

Students’ Perceptions and Preferences for Knowledge Sharing

Shaheen Majid, Cendana Desiree Idio, Liang Shuang & Zhang Wen

The main objective of this study was to explore students' perceptions of knowledge sharing, their preference for participation in face-to-face and online discussions, motivating factors, and barriers to knowledge sharing. A questionnaire was used for data collection and 154 graduate students from two public universities in Singapore participated in this study. It was found that over one-half of the students preferred face-to-face knowledge sharing, 26% preferred participation over online education discussion boards and the rest did not express any particular preference. The major motivator for face-to-face knowledge sharing was immediate feedback from peers while the major motivator for online discussion boards was the availability of enough time to conceptualize and express ideas. The major barriers to face-to-face knowledge sharing were shyness and poor language skills, whereas lack of time to read multiple threads was a barrier to participation over study-related discussion boards.

Paper Session 11

Working with a Cross-disciplinary Team: Empowering Knowledge Discovery and Reuse through Effective Research Data Management

Joyline Makani, Richard Apostle, Robert Branton, Jack Duffy, Tsafir Gazit, David Roach & Jerome Singleton

Research data management (RDM) is becoming more widely recognized as valuable to knowledge discovery and reuse. Although many articles advocating RDM mention the usefulness of such plans for knowledge reuse, efforts to actually generate RDM plans for cross-disciplinary knowledge discovery and scholarly communication are fairly rare. Our team of scholars from diverse academic disciplines is collaborating with a data management expert in developing a cross-disciplinary institutional RDM service. This paper provides the conceptual framework underpinning our project. This framework was developed through extensive and critical examination of scholarly literature associated with university scholarship and discipline specific RDM with the purpose of pulling out
the most common elements acknowledged by other researchers as defining effective RDM service. The key defining factors related to scholarship and RDM that emerged from the literature were then synthesized to form the integrated conceptual framework presented in this paper. We offer propositions that relate specific RDM service environment design elements to successful research data discovery and thereby to new knowledge creation success.

Ethical Issues in Data Mining

*Mandana Mir Moftakhari & Güleda Doğan*

In this paper we try to summarize the ethical issues which should be considered during data mining and bibliomining process. For this purpose we observed literature and divided ethical issues in the following categories: privacy, data accuracy, database security and intellectual property.

Big Data in LIS Education: What to Teach?

*Peter Becker*

Big data is a hot topic, also in information science. What should LIS departments teach their students about techniques and other issues in relation to big data? Big data is a hot topic in ICT as well as in other contexts, like marketing and information science. As big data is about lots of data in all forms, departments of information studies ask themselves the question if they should teach their students ‘about big data’. LIS education is not limited to the study of information in the most narrow definition (data that has meaning to someone). For example, the storage of research data is also the domain of information studies. Besides that, big data is not only about data, but also about information in its context, as long as it can be characterized with the three V’s: volume, variety and velocity (Laney, 2012). Much of this data/information is not structured and that is exactly what LIS education is about. It is for this reasons that the answer to this question seems to be yes.

Paper Session 12

Enhancing Access to Knowledge Management Literature – Proposal for Domain-Based Classification Scheme and Thesauri

*Denise A. D. Bedford*

Knowledge organization systems (KOS) include a variety of tools and methods for organizing information and knowledge ‘things’. When we refer to KOS we generally mean classification schemes, thesauri, semantic networks, and authority control systems. Most academic disciplines are supported by professionally developed and maintained KOS. This is not the case for knowledge
management. Knowledge management is insufficient treated in existing KOS. The research is exploratory in its approach to developing KOS tools for the field. It is engaging in that at every stage of development it leverages the knowledge and input of the larger knowledge management community.

Knowledge Organization of Folklores on Greater Mekong Sub-region

Kulthida Tuamsuk, Nattapong Kaewboonma, Wirapong Chansanam & Sunee Leopenwong

This research aims to use the digital humanities research concept on the study of folklores in Greater Mekong Sub-region (GMS). This paper presents the first phase of the research, focusing on knowledge acquisition and organization of folklores in GMS. The research and development method which is comprised of 1) knowledge acquisition process adopted from Liou (1990), and 2) knowledge organization process using the domain analytical approach. The knowledge of folklores in the GMS was extracted from the existing information resources and databases and also from local wisdom collected in the GMS. Then the knowledge domain was classified into classes and sub-classes, including some necessary scope notes and relationships of the topics. A set of knowledge domains on GMS folklore will be run through computer software and then tested for the relevance and reliability by the experts in folklores in the GMS.

Metadata Changes: Meeting the Evolving Requirements

Daniel Gelaw Alemneh, Oksana Zavalina, Mark Phillips & Hannah Tarver

Evolving user needs and relevance require continuous change and reform. A good digital collection has mechanisms to accommodate the differing uses being made of the digital library system. In a metadata management context, change could mean to transform, substitute, or make the content of a metadata record different from what it is or from what it would be if left alone. In light of the evolving compliance requirements, this paper will analyze the three most common changes within metadata records and discuss the possible implications of such changes within and beyond the metadata records.