Journal of Universal Computer Science, vol. 10, no. 6 (2004), 671-673
submitted: 14/6/04, accepted: 28/6/04, appeared: 28/6/04 © J.UCS

Beyond the state-of-the-art of Knowledge Management

I-KNOW '04

J.UCS Special Issue

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In a world of dynamic and discontinuous change, organizations are constantly seeking ways to adapt themselves to new conditions so that they are prepared to survive and flourish in an increasingly competitive environment. In such a dynamic landscape, organizations are re-examining the ways they treat their knowledge assets and they are identifying new ways in which they can exploit them more effectively in the future. Therefore, efficient management of knowledge has attracted increasing attention.

This special issue makes available the eight best contributions evaluated by the international expert committee of I-KNOW `04, the 4th International Conference on Knowledge Management (http://www.i-know.at). The purpose of this issue is to provide readers orientation towards novel ideas for knowledge management research and next-generation knowledge management solutions. The contributions underpin a clear trend for today's and more important for tomorrow's knowledge management research. That is the interdisciplinary and holistic character of knowledge management covering human resource management, organizational development and information technologies, alike. With this in background, the eight contributions of this special issue fall in two categories. The first category on knowledge audit, knowledge transfer & flows and knowledge integration has its focus on organizational and cultural aspects of knowledge management. The second category on semantic-based approaches and semantic technologies places the emphasis on more technological aspects of knowledge management.

Knowledge audit, knowledge transfer & flows and knowledge integration

S. Y. Choy, W. B. Lee, C. F. Cheung from The Hong Kong Polytechnic University, (Hong Kong) entitled their paper *A Systematic Approach for Knowledge Audit Analysis: Integration of Knowledge Inventory, Mapping and Knowledge Flow Analysis*. The authors argue, that knowledge audit (i.e. a knowledge management "maturity" analysis for organizations), is an important foundation for the successful implementation of knowledge management interventions. The paper introduces a three-stage method consisting of a pre-audit preparation, an in-audit process and a

post-audit analysis. This method has been successfully applied in a case study with the engineering division of the Hong Kong DragonAir Limited.

Martin Eppler from University of Lugano (Switzerland) presents in his paper *Facilitating Knowledge Communication through Joint Interactive Visualization* how interactive visualization tools offer potential for the improvement of knowledge communication. Martin Eppler introduces three tools: (1) a synergy map, (2) an on track visual protocol tool and (3) a parameter ruler supporting different aspects of collaborative communication and cognition tasks. Based on experiences made in corporate knowledge-intensive communication situations the benefits and needs for further improvements of theses tools are discussed.

Tobias Müller-Prothmann from the Free University Berlin (Germany) and Ina Finke from Fraunhofer IPK Berlin (Germany) entitled their paper *SELaKT - Social Network Analysis as a Method for Expert Localisation and Sustainable Knowledge Transfer*. SELaKT is a method which builds upon latest results in network analysis and adapts them to corporate knowledge transfer. The paper presents the application of the SELaKT method. The achieved results, i.e. social relationships in form of structural patterns and positional models, are interpreted in the context of corporate knowledge management. Finally, based upon the interpretation, knowledge management interventions can be recommended. These interventions include improvements for knowledge communication, creation of successful knowledge environments, or sustainable knowledge transfer (e.g. workshops, CoPs).

Jon Landeta Rodriguez, Arturo Rodriguez Castellanos and Stanislav Y. Ranguelov from University of the Basque Country (Spain) report in their paper *Knowledge Management Analysis of the Research & Development & Transference Process at HEROs: a Public University Case* about a new approach for knowledge management which covers the entire knowledge transfer and knowledge flow from scientific and technical knowledge in universities to organizations outside universities. The approach consists of three steps requiring different methodologies: step 1 deals with a knowledge analysis to identify and categorizes different types of knowledge; step 2 investigates the current practices for knowledge management and in particular for knowledge administration in universities; and finally step 3 analyses and estimates risks of recommended improvements.

Niksa Alfirevic from the University of Split (Croatia) and D. Racic from the University of Zagreb (Croatia) address *Knowledge Integration as a Source of Competitive Advantage in Large Croatian Enterprises*. Their contribution discusses knowledge integration as a potential source of competitive advantage. The research has attempted to empirically evaluate the level to which knowledge management and human resource development are integrated in a company's strategy. This evaluation has been conducted with a representative sample of large Croatian companies.

Semantic-based approaches and semantic technologies

Simona Collucci, Tommaso Di Noia, Eugenio Di Sciascio, Marina Mongiello, Giacomo Piscitelli from the Politecnico di Bari (Italy) and Francesco M. Donini from University of Tuscia (Italy) focus in their paper *Semantic-based Approach to Task Assignment of Individual Profiles* on the problem of skill matching in organizations, that is on how to assign the right human competencies to different tasks in an organization. The concepts have been implemented in a skill matching system which

uses curricula vitae and project descriptions as inputs. Based upon this input and a given ontology, provided and required individual profiles are extracted. Finally, these profiles are compared with open tasks to find the best match. Technically, the approach relies on weighted bipartite graphs with semantic-based assignments of arcs weights.

Mark Hefke from the Research Center for Information Technologies at the University of Karlsruhe (Germany) developed *A Framework for the successful Introduction of KM Using CBR and Semantic Web Technologies*. Based upon a holistic approach to cover organizational, cultural and technological aspects when introducing knowledge management, the framework makes suggestions based on cased-based reasoning techniques and semantic web technologies. The main components of the framework are (a) a case base with best practices, (b) a self-auditing component to help organisations to describe their profile and knowledge goals, (c) a case retrieval processes to retrieve cases which are similar to an organization's profile, (d) a recommendation process offering recommendations for knowledge management interventions and finally (e) a feedback loop to extend the case base by successful knowledge management interventions.

Simone Stumpf and Janet McDonnell from University College London (United Kingdom) report about *An Investigation into Sharing Metadata: "I'm not thinking what you are thinking"*. Metadata and ontologies have increasingly been seen as important features in knowledge management. This paper deals with metadata elicitation based on content descriptions from human domain specialists and with the sharing of the metadata. The objective of a case study conducted with security specialists from nine organizations in the retail sector was to investigate how these specialists can learn from each other using a metadata framework and how this can be supported by tools and processes.

I hope that this special issue provides the reader with a comprehensive overview of contributions which represent a true advancement beyond the state-of-the-art of knowledge management.

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Graz, July 2004