

BUILDING COMMUNITIES: ORGANISATIONAL KNOWLEDGE MANAGEMENT WITHIN THE EUROPEAN COMMISSION'S INFORMATION SOCIETY TECHNOLOGIES PROGRAMME

SUBMITTED: February 2002

REVISED: February 2002

PUBLISHED: August 2002 at <http://www.itcon.org/2002/4>

EDITOR: Abdul Samad Kazi

*Paul Hearn, Project Officer,
European Commission;
email: Paul.Hearn@cec.eu.int*

*Agnes Bradier, Project Officer,
European Commission;
email: Agnes.Bradier@cec.eu.int*

*Anne Jubert, Project Officer,
European Commission;
email: Anne.Jubert@cec.eu.int*

SUMMARY: *Under the IST Programme, the European Commission is attempting to build community around the subject of Knowledge Management Made in Europe. In the past four years almost 40 research and development, and take-up projects have been launched which are tackling various pieces of the organisational knowledge management puzzle. In addition, the cluster project known as the European Knowledge Management Forum is attempting to build a sustainable network of knowledge management theoreticians and practitioners who are interested in Europe's journey into the knowledge economy, and what knowledge management methods and tools can contribute to this journey. The Forum is also attempting to support commonality in KM terminology, application and implementation in Europe. This paper gives an overview of the current work which has taken place under the IST Programme during Framework Programme V, and attempts to highlight some interesting research themes on the way to Framework Programme VI.*

KEYWORDS: *knowledge management, research, development, take-up, standardisation, community.*

1. INTRODUCTION

“Organisational Knowledge Management” means different things to different people. At its conception, the juxtaposition of the terms “knowledge” and “management” were meant to contrast with the more common concept of “information management”. In this way, it was intended to clarify that there is a distinction between “knowledge” and “information”. Indeed, even today Knowledge Management” has more to do with the radical transformation of organisations than with the desire to “get the right information to the right people at the right time”. Such information or library science approaches to the management of knowledge - though much quoted and analysed in the early days of knowledge management - represent only a partial, very limited and, one might argue reductionist aspect of the challenge of managing knowledge within enterprises.

The management of information benefited from insights from, for example, artificial intelligence, case-based reasoning and other “systems” approaches. The argument was that such information filtering or data analysis tools, when working in conjunction with tools providing some kind of contextual and/or location-based information, lead to improved results and efficiency.

This is not so for the management of knowledge. Second and third generation approaches to knowledge management focus on knowledge as a process or activity rather than as a product as such. In this setting, knowledge management is seen as “a movement which places again the human operator in the centre of the picture”. Knowledge Management offers profound lessons to organisations willing to implement radical

transformations of their organisational culture. Those willing to put people and their abilities first have the most to gain from the knowledge management “revolution” which is upon us.

The continued dedicated effort in the area of knowledge management - first under the Esprit “Learning and Training in Industry” theme, and later under action line II.1.2 Organisational Knowledge Management (called in 1999, 2000 and 2001) - has led to the establishment of a European movement which we refer to as “Knowledge Management Made in Europe”. This critical mass continues to be restructured and consolidated into a coherent framework based on current and future research needs expressed through consultation with many research and industrial players.

Finally, it is a clear feature of our work in organisational knowledge management that we have persistently been as interested in tracking developments within our own research projects as in the outside world. We see clear opportunities to take IST research in knowledge management on to higher levels through constant external challenge and critique.

2. KNOWLEDGE MANAGEMENT RESEARCH FIELDS ADDRESSED IN FRAMEWORK PROGRAMME V

Some 40 projects have been funded under the “Organisational Knowledge Management” banner in Framework Programme V. These projects can be classified into 4 main groups:

2.1 First generation KM

- Information portals – tools and methodologies integrating to a large or lesser extent information necessary for back and front office processes in organisations. A reflection of early movements by information systems suppliers into knowledge management, such first generation knowledge management approaches suffered from a lack of a holistic framework or people or community-centred approach. Since 1999, we have been moving away from this arena towards a more holistic treatment of primarily tacit knowledge in organisations.

2.2 Second generation KM

- *Knowledge processes to business processes* – tools and methodologies linking knowledge and business processes;
- *Assessment or measurement type projects* – which attempt to measure and benchmark knowledge management implementation within and between organisations, and to manage and measure impact of knowledge life cycles within the enterprise;
- *Collaboration and innovation spaces* – tools, methodologies and good practices which accelerate creative exchange between people working within and across organisations. The end objective of such projects is to support the transition of organisations into knowledge-based communities;

2.3 Third generation KM

- *Knowledge and innovation ecologies* – tools, methodologies and good practices which identify contextual barriers and enablers of absorptive and innovative capacities of organisations and attempt to replicate co-creation abilities across the enterprise or network.
- Human-centred knowledge management – focus on people as unique holders of knowledge, and exchanges between people as primary generators of new knowledge for innovation.
- Networks and working groups – which attempt to build critical mass within and outside the IST programme.

3. MAJOR CHALLENGES AHEAD IN THE FIELD OF KNOWLEDGE MANAGEMENT

The overriding objective, or *man-on-the-moon vision*, for Organisational Knowledge Management is *to support organisational innovation through increased collaboration, flexibility and openness*. Our role is to facilitate linking of ideas, people and projects to this end.

Europe is evolving into a constellation of *knowledge-creating ecologies*. At a macro level therefore, we see the challenge for organisational leaders and regional planners to be *to identify those features which make innovation and co-creation possible, and replicate these to as many industry groups in Europe as possible*.

At a micro or organisational level, the fundamental challenge ahead is *to convince organisations of the need for a major cultural transformation of business, leading to the creation of open, communicative and collaborative spaces enabling rich exchange between people*, supported by technology. Organisations which will survive in the future will be those in which people are holding rich and meaningful exchanges leading to greater collective sense-making on the issues that concern them. Organisations which are not able to create an environment where new ideas can flourish and in which creative solutions are co-created will lose key staff and key markets and ultimately may disappear.

4. BUILDING STRONG CONSTITUENCIES AND NETWORKS

In the *Organisational Knowledge Management* area, we began to focus on building constituency at the very start of Framework Programme V around the “KM Made in Europe” movement. Since 1999 we have launched a number of *cluster projects, working groups* and *discussion groups* to leverage our work and to provide for the possibility of wide collaboration and impact.

- Working group on *Multidisciplinary Researchⁱ* and its application to knowledge management. This working group is expected to spin-off of number of IP ideas. This is one of the several *expert groups* who advise us on new inputs to our work, which convene periodically on a voluntary basis.
- The *European Knowledge Management Forumⁱⁱ* is a cluster project and web site comprising all KM-related projects. In addition, it is open to free contribution from outside IST, and some 2,000 non-IST organisations working in the knowledge management space have become associated members of this cluster world-wide. It also follows a self-organising approach. On a content level, the project aims at supporting identification of commonality in KM terminology, application and implementation.

Special interest groups (each comprising ~50 members, and growing):

- Special interest group on *KM Visions and Strategyⁱⁱⁱ*
- Special interest group on *KM in the Public Sector* and currently being extended to cover some ~50 other public organisations throughout Europe. This group is evaluating the unique nature of KM within public service organisations.^{iv}
- Special interest group on *Communities of Practice^v*.
- CEN/ISSS working group on *KM Standards*, involving ~40 organisations in Europe.^{vi}
- Various discussion groups at a pre-working group stage dealing with subjects including *Motivating and Incentivising Knowledge Sharing, KM in Training & Education, KM and Enterprise Modelling*, and regional groups of actors in *Spain/Latin America, European accession countries, France-Canada* and *Australia*.^{vii}
- Various internal workshops held in 2001-2002 on Narrative Techniques and Communities of Practice, and online workshops held in 2001 on the following themes : KM within the UK National Health Service, KM Practitioners Toolkits, Scenarios for the Knowledge Economy, Branding and Marketing a KM Initiatives, The human dimensions of KM, The Role of Ontologies in Knowledge Management, Games and action: an interactive approach towards KM.^{viii}

5. FUTURE AND PROMISING RESEARCH AREAS TO BE ADDRESSED IN FRAMEWORK PROGRAMME VI

We have identified the following major challenges associated with Organisational Knowledge Management in the Future. The uniting theme is the movement to more holistic appreciation of the nature of knowledge management, described eloquently in the definitions of terms such as *Knowledge Ecologies* and *Knowledge Ecosystems*.¹

Organisational innovation research into the enablers and blockers of effective conversion of knowledge into value. At a macro level, this includes: research into cultural prejudice vis à vis entrepreneurship and innovation in Europe, enablers and blockers of cross-European flow of ideas and knowledge, transformation of established industrial power bases in Europe, language as a carrier/facilitator/blocker of free-flowing exchange, the role of trust and Europeanisation of national trust bases, local interpersonal relationships as facilitator/blocker of free-flowing exchange, demographic dynamics and effects on labour market structures with particular focus on the emerging employment strategies of companies, e.g. recycling retired knowledge workers, European-wide incentive guidelines to foster knowledge conversion and sharing process. At a micro-level, this includes research into identification and co-creative replication of effective ecologies that enable maximum creativity and innovation within and across organisations.

New organisational forms, networks and connections Research will explore and prototype emerging organisational forms, networks and connections ; re-configuration or new uses of existing organisational forms, networks, and connections that maximise knowledge sharing as enablers of organisational innovation and creativity. Research will focus on internal incubators, informal constellations, groups and communities, formal alliances, partnerships, and consortia of organisations or groups, and mechanisms, tools and methodologies for collecting, enhancing and synthesising distributed intelligence and tacit knowledge of workers. Consideration will also be given to human resource issues including skills and competency development, new roles and learning requirements, and reward systems and recognition mechanisms for knowledge contributors.

Subtheme "Beyond Communities of Practice" Research will focus on what has been tried and learned from COPs thus far, the limitations of COPs, how to innovate on what we've learned to move beyond these current limitations, which new organic organisational forms and supporting tools emerging from our COP experiments that will provide us with more powerful ways to connect and create shared meaning? How can we evolve them to their maximum potential? Technology research will investigate new platforms and tools which can support and enhance the work of COPs.

Global Connectivity - how ICTs can enable organisations and communities to connect anything to anything, anyone to anyone, in ways that facilitate high value knowledge creation and sharing through connections that create meaningful context, but avoid meaningless complexity. Research will build on multidisciplinary approaches including neurosciences which analyse how the human brain functions to create meaning from the patterns formed by the connections between the data stored in our brain cells. The focus will be on finding effective means to enhance collective intelligence of organisations, communities, and other groups through connections that form patterns of meaning, and tackle questions such as how to create sense-making patterns of connections, and how to recognise existing patterns that provide for sense-making?

True to the nature of knowledge management as a multidisciplinary research area, the above work will be influenced by state-of-the-art developments in areas including socio-economics, social and management science, social psychology, complexity theory, work on complex adaptive systems, social capital, new growth theory,

¹ A note on terminology. *Knowledge Management* is "bottom-line" oriented – it helps to see the challenges of and opportunities for assessing, organising, portraying and profiting from knowledge. *Knowledge Ecology* is community-oriented – it allows to see what it takes to grow and sustain networks of relationships from which knowledge will emerge. Knowledge Ecosystems are triple networks – *people networks* of conversations produce a *knowledge network* of ideas, information and inspiration , and are supported by *technology networks* of web sites, fora and other infrastructure elements. Collectively this triple network produces commercial value to its members and sponsors (adapted from Knowledge Ecology Collaborative of Community Intelligence Labs, Santa Cruz, CA, USA.) These terms are interlinked, and in the context of IST's Applications relating to business Research Area, offer symbiotic opportunities for increased organisational innovation and competitiveness.

quantum behaviour in dense networks, organisational living systems, narrative research, development of algorithm-driven knowledge-cognition software for the synthesis of knowledge in operational environments and across networks, research on experience-driven, narrative and other knowledge exchange technologies considering conversation is a core competence.

6. RESEARCH VIEWS

To better structure and clarify the research topics in the future, one might describe KM along the following 4 views:

6.1 Strategic view

The focus is on building a world beating innovation and co-creation culture within and between enterprise, and, at a macro level through the aggregation of such innovative organisations, develops benchmarks and indicators for regional, national and European knowledge ecologies, including:

- Understanding of interplay of organisational maturity and innovation or co-creation ability;
- Methodologies which help to identify facilitators and catalysers of innovation and creativity within and between organisations, and attempt to model and transfer such features to other settings;
- Multi-disciplinary research on the social, ethical, sociological and economic facets of new organisational collaborative forms;
- Multi-disciplinary research focussing on the individual as unique carrier of knowledge, and exchange between individuals as unique mechanism for creation of new knowledge;
- Organisational design principles for the set-up of co-creation sites;
- Analysis of macro-level interdependencies and challenges.

6.2 Organisational view

The focus here is on seeing the organisation as a complex evolving entity, with emergent properties, interoperating in distinct knowledge ecologies:

- Exploration of concepts such as complexity and quantum theory applied to the organisation activity at an operational level;
- Effective leverage of tacit knowledge and management of people as knowledge contributors for the collective benefit of the enterprise, including mechanisms to identify and trace the value-added contribution of each participant, and responsibility and liability within the knowledge ecology in which he or she resides;
- Exploration of the limits of communities of practice as vehicles for organisational innovation;
- Implementing and measuring impact of new organisational forms at operational level, and analysis of the individual as the fundamental element of value creation and sustainability.

6.3 Product/Service View

This view sees the delivery of new products and services as a collaborative, cross-organisational and multi-organisational challenge which needs to take into account richer multidisciplinary lessons and multiple stakeholder views:

- Incorporation of truly multidisciplinary views to product/service design which lead us away from binary user requirements/customer-focus approaches to truly holistic lifestyle and experiential solutions;
- Rich exchange benefiting from global connectivity and inter-organisational exchange.

6.4 Infrastructure View

This view promotes technology as an enabler of rich exchanges, collaboration and interaction across time and space:

- Definition and implementation of next generation technology platforms and tools for knowledge sharing, and co-creation;
- Research into next generation community portals and co-creation spaces supporting new organisational forms;
- Application of enabling technologies from many ICT fields where useful, including semantic web and language engineering, open-source of components or infrastructures, taxonomies and shared ontologies, open architectures, grid technologies, agent technologies for auto-mated interactions, self-adapting modules and components, multi-agent architectures, P2P, etc.

7. THE ROAD AHEAD

We launched our research activities in KM in the IST Programme in 1999, and saw the opportunity through this research programme to promote what we call “*KM Made in Europe*”. In the last four years we have been surprised by the ability of European businesses and research centres to rise to the challenge of carrying out world-class research. Our constituency of research projects and the wider KM in community in Europe are, together, setting the context for the creation of Europe as the most dynamic and competitive knowledge economy in the world by 2010, as set out by our political leaders at Lisbon.^{ix}

We believe that to be the most competitive knowledge economy in the world, it is necessary to be the best at managing knowledge. Through our research projects in Framework Programme V we have striven to promote excellence in methodologies and tool development to make KM a reality for business organisations in Europe and further afield, whether they are large established players or networks of smaller enterprises. We believe that Europe can lead the way in knowledge management, and through our activities in Framework Programme VI, and through the communities we will build and sustain along the way – of information providers, professional bodies, technology suppliers, regulatory authorities, event organisers, professional bodies, e-lancers, service providers, training providers and networks - we hope to set out a path to achieve and extend this leadership in the period 2003-2007^x.

ⁱ For further information on the multidisciplinary research working group, please contact Agnes.Bradier@cec.eu.int.

ⁱⁱ For further information on the European Knowledge Management Forum, please see <http://www.knowledgeboard.com/> and <http://www.knowledgeboard.com/community/zones/ekmf.html>

ⁱⁱⁱ For further information on the European Special Interest Group on KM Visions and Strategy, please see <http://www.knowledgeboard.com/community/zones/sv.html>

^{iv} For further information on the European Special Interest Group on KM in the Public Sector, please see <http://www.knowledgeboard.com/community/zones/sig/kmps.html>.

^v For further information on the European Special Interest Group on Communities of Practice, please contact Anne.Jubert@cec.eu.int.

^{vi} For further information on the European Standardisation initiatives relating to KM, please contact Anne.Jubert@cec.eu.int or Paul.Hearn@cec.eu.int.

^{vii} For further information on emerging Special Interest Groups, please see <http://www.knowledgeboard.com/community/zones/sig/>

^{viii} For further information on online workshops, past and future, please see <http://www.knowledgeboard.com/workshop/index.html>

^{ix} For further information, please see http://www.europa.eu.int/information_society/eeurope/action_plan/index_en.htm

^x For further information on the IST programme, please see <http://www.cordis.lu/ist/>.