

Cultural Impacts on Knowledge Sharing: Empirical Data from EU Project Collaboration

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Abstract

Purpose – EU sponsored Lifelong Learning Projects involve a variety of experts of diverse cultural, organisational, and professional backgrounds connected together in one project with time and money constraints. The members of the consortium, often unknown to each other from the beginning, come together for a specific period of time to accomplish certain distinctive objectives. A special Knowledge Sharing strategy is needed in order to incorporate culturally diverse values, and to overcome the technical difficulties of dispersion and limited access to informal communication. This paper explores the way in which EU projects appreciate diverse cultural (national, organisational, and professional) influences on Knowledge Sharing in project-based collaboration.

Design/methodology/approach – This paper is based on longitudinal studies, own multicultural experiences and earlier conceptually grounded arguments regarding cultural complexities to Knowledge Sharing in project environments. The key cultural issues highlighted here were empirically tested through a survey in the context of Knowledge Sharing in several EU Lifelong learning projects. Finally, the paper discusses the implications of dealing with cultural issues in fostering good Knowledge Sharing practices within dispersed projects.

Findings – It is apparent that culture has a most significant influence on the Knowledge Sharing capability of time and money restricted dispersed project. Cultural awareness and the use of new Information and Communication (ICT) tools, such as WEB 2.0 are factors supporting Knowledge Sharing.

Research limitations/implications – This paper puts forward experiences and opinions of a number of project partners from different EU lifelong learning projects regarding their general opinions about knowledge sharing and their experiences from knowledge sharing in EU projects they have participated in. The findings are not statistically tested due to the small sample, but highlight certain issues that will be further investigated in future work.

Practical implications – At the project level, people and processes must be the first priority for project managers who wish to nurture a ‘Knowledge Sharing culture’ in a dispersed context. At the team level, the project manager can help to create a team culture favourable to Knowledge Sharing by emphasising appropriate values and beliefs to the team members and by introducing suitable enablers for virtual communities.

Originality/value – Previous studies have not examined knowledge sharing in EU projects. The paper aims to help practitioners and academics, who participate in EU projects to recognise that the different EU project team members usually are dispersed in terms of geography, expertise and working methods) and to understand that diverse cultural values (national, organisational and professional) can be a competitive advantage. As a result of gaining such understanding it is expected that EU project performance will improve if diversities are handled in a right manner and in addition Web 2.0 is used as a communication and sharing platform to enable increased knowledge sharing, interactive participation and digital democracy in practice.

Keywords: Culture, Knowledge sharing, Web 2.0, Social computing, EU projects

Paper type: Research paper

1. Introduction

In Europe lifelong learning programmes sponsored by the European Union are increasingly being considered as projects that involve interdisciplinary cooperation facilitating flexibility and innovation. The uniqueness of mixing academia and industry partners in project consortia from multidisciplinary fields and from a

variety of cultures embracing people with different underlying norms, values and beliefs requires specialised approaches to Knowledge Sharing (KS) to support such project-based collaboration.

Knowledge Management (KM) is the systematic process of acquiring, organising, and communicating (Knowledge Sharing) knowledge (both tacit and explicit) of organisational members so that others may make use of it in order to be more effective and productive (Alavi and Leidner, 2001). Management of knowledge, whether explicit or tacit, is a crucial precondition for project success in today's dynamic and vibrant global environment (Ajmal et al., 2009). The cultural characteristics of different groups of people play a key role in successful KM (Ciganek et al., 2008). The capability to create, share, and absorb knowledge among dispersed organisational members of varied cultural backgrounds is an essential requirement for success in project-based business (Ajmal et al. 2009).

Previous studies have confirmed that culture can play a significant role in facilitating or hindering KS in culturally diverse teams (Usono and Kuofie, 2006; Siakas and Georgiadou, 2006). KS can be people-oriented which emphasises the importance of tacit knowledge, the social infrastructure and the business performance, or technology oriented i.e. concentrating on the technology infrastructure and the ways, in which explicit knowledge is codified, stored and interrogated (Georgiadou et al., 2010). In the global context when the project members are dispersed, as is the case in most EU projects, KM and KS become a complex undertaking. Due to limited access to informal communication, synchronous work demands different technical means for socialization, communication, and knowledge exchange. In addition to diverse cultural work values, there is an acute need for workspace awareness (person-to-person interaction afforded by shared physical workspaces, such as real-time groupware systems, that allow people to maintain updated knowledge about others' interaction with the task environment).

2. Knowledge Sharing

Knowledge is increasingly being seen as the most important strategic asset in organisations and an important resource for achieving sustainable competitive advantage. Davenport and Prusak (1998) described knowledge as a blend of experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experience and information. Knowledge evolves continuously as the individual and the organisation adapt to influences from the external and the internal environment (Siakas and Georgiadou, 2006).

Working knowledge is initially tacit (personal and context-specific including cognitive elements) and is created by earlier experiences, perceptions and internalisation. Tacit knowledge becomes explicit (formal and systematic), which is expressed by explicit procedures. Knowledge sharing is the process where individuals mutually exchange both tacit and explicit knowledge, and jointly create new knowledge (Georgiadou and Siakas, 2009b).

The amount of new knowledge needed to run a project depends on the novelty and uniqueness of the product or service being created. However, even if the details of a given project (team composition, product to be produced and so on) are unique, the essential processes involved are usually similar (Love et al., 2005). Many EU projects consist of consortia members who carry with them experiences from their institutions and firms, as well as earlier EU projects, but the desirable re-use of knowledge can become problematic due to

the fact that this type of projects usually are temporary assemblage of experts who are diverse in terms of geographical dispersion, expertise, or working methods (Kasvi et al., 2003). In these circumstances, knowledge usually is lost once the project is completed, in particular if considerable dissemination activities are not carried out, and the experienced personnel is then absorbed back into their own institutions or companies and engaged in other projects.

The temporary and dispersed nature of EU projects means that there are no established structures or processes that enable natural knowledge-transfer mechanism from earlier projects. Project leader initiatives, such as introduction of knowledge sharing mechanisms, including web based social computing application and lessons learnt, are therefore required to create, capture, and transfer such knowledge. In addition, EU projects must always be completed within a specified time period, which makes the harnessing and re-use of knowledge a necessity.

3. Cultural Impacts on Knowledge Sharing

The cultural orientation of a society reflects the complex interaction of values, attitudes and behaviours displayed by its members. They are all part of the cultural learning and give rise to misunderstandings and misinterpretation of intent.

The basic assertion in cross-cultural studies is that national culture, expressed in terms of values and beliefs, has a direct impact on organisational culture and individual behaviour (Hofstede 2001; Schein, 1985). The economical, political and legal environment imposed by governmental rules, the technical environment, such as communication networks, and the socio-cultural environment in which the organisation exists, directly affect organisational culture and functioning of organisations. There is evidence that national culture influences organisational culture (Hofstede, 2001). Different national cultures have preferred ways of structuring organisations, different patterns of employee motivation and different solutions to organisation problems. Also management theories and concepts are culture bound and cannot easily be applied in another culture.

Similarly Zakaria et al. (2004) assert that knowledge is filtered through cultural lenses, whether or not the participants are aware of such 'cultural filters'. Moreover, Usoro and Kuofie (2006) recommended that management attention to the 'cultural lens' should extend beyond the organisational level to the national level, especially for global teams incorporating a variety of cultural contexts.

On the contrary, Magnier-Watanabe and Senoo (2010) found organisational characteristics to be a stronger prescriptive factor in KM compared to national culture, which, however, also was found to have a significant influence on KM. Their results are based on a survey in 2005 with 1724 respondents in a human healthcare company from different countries. The data was based on one multinational company. Generally, we can say that national cultures cannot easily be changed due to deep-rooted values, whilst organisational cultures are manageable to some degree. If the organisational culture is strong it is inevitable to also have a very strong influence on KM. Multinational organisations are kept together by common organisational cultures across borders and need to build up a relatively strong organisational culture for avoiding knowledge dilution and for achieving political congruence.

Willingness to converse and share knowledge is influenced by cultural dynamics from the external environment (national culture) and from the internal environment (organisational and professional culture). National Cultures mould the degree of openness, capacity for collaboration and exchange of ideas (Siakas and Georgiadou, 2006). Certain organisational cultures support and facilitate knowledge creation and transfer, whereas other organisational cultures promote knowledge retention. Knowledge sharing requires voluntary actions including openness, scrutiny, trust and tolerance towards different views and interpretations. In particular trust in an issue that has been given considerable importance regarding collaboration and communication between diverse teams (Holste and Fields, 2010; Siakas and Siakas, 2008).

Dispersed EU projects involve many national cultures and many organisational cultures. Previous research has shown that cultural and communication difficulties profoundly influence KS between dispersed members of a group (Ajmal et al., 2010; Chen et. al, 2010; Wei; 2010). Communication difficulties can in turn depend on cultural differences, such as language difficulties, different thinking logic and different perceived credibility of voluntary shared knowledge (Wei, 2010).

Wei et al. (2008) described a conceptual framework without empirical data for studying the impact of national culture on knowledge sharing motivation in virtual teams. Their hypothesis is that the cognitive processes of knowledge sharing is constructed by four factors including (i) norm to KS (the way that we think others expect us to act), (ii) attitude to KS (disposition to respond favourably or unfavourably to the self, others, and the environment), (iii) intention to share knowledge and (iv) commitment to KS, and the relationships of these factors. They consider that intention to share knowledge is determined by attitude toward KS. Attitude towards KS is influenced by three processes of commitment based on the Social Influence Theory (Kelman, 1958), namely: internalisation (users adopt behaviour because of its content, which they find matching / congruent with their own values), identification (system users adopt attitudes and behaviours to achieve a satisfying and self-defining relationship with another person or group) and compliance (behaviour is primarily a result of incentives, rewards, or punishments). By using Hofstede's dimensions of culture which are markedly different between China and the USA they advise that their KS model '*can deepen our understanding of the factors that increase or lessen employees'* tendencies to engage in knowledge-sharing behaviour.

4. Communities of Practice: Online Knowledge Sharing Technologies

New challenging business and academia environments are characterised by globalisation, dynamism and increasing levels of complexity due to rapid changes in technology and its connected intricate knowledge. Internet-based virtual tools have created new opportunities for rapid access to information world-wide. Identifying potential business partners and developing business links with potential partners in other countries has become easier for organisations that are experienced in monitoring web-based information sources, and are able to combine tacit knowledge with new knowledge sources that are enabled by Information and Communication Technologies (ICT), such as internet and intranet. Explicit knowledge is transferable through formal and systematic languages. Tacit or implicit knowledge is context-specific, personal and subjective including cognitive elements and thus difficult to formalize and communicate (Georgiadou and Siakas, 2009a).

Holsapple (2009; 2005) states that views on ICTs and KM are ranging between two poles - one considering the relationships between ICT and KM incidental – the other considering ICTs being the core of KM. Elron & Vigoda-Gadot (2006) argument that when ICTs are used as the main communication channel between team members the limitations of the communication increase, as technology cannot provide the same richness as face-to-face interactions and thus technology can be seen potentially to hinder the effectiveness of knowledge sharing. They also found that influence tactics and political processes in virtual teams are more restrained and mild than in face-to-face teams. This seems to indicate that informal tacit knowledge is hindered by technology to some degree. However, dispersed teams are dependent on technology for their communication and knowledge sharing. In order to make the most of communication and knowledge sharing effective and user friendly technology should be used in projects to support the disperse team members. Also bottom-up empowerment, through the use of collaborative Web 2.0 tools for example, should be encouraged, as well as training in these tools. We consider KM in general, and KS in particular, being a social and human phenomenon which by using ICTs as a tool can improve the efficiency of knowledge creation, visualisation, transfer and preservation. ICTs facilitate the amplification, augmentation and leverage of innate human knowledge handling capabilities. ICTs support faster, cheaper and more reliable knowledge work of large scale and the existence of efficient ICT is inevitable an imperative requirement for the existence of virtual collaboration.

The potential role of social computing and Communities of Practice (CoPs) enables a bottom-up approach for supporting knowledge activities opposed to the hierarchical control of central knowledge repositories. These new forms of business intelligence provide the individual with control of his/her own generated content. Today CoPs are considered as key component of systematic and deliberate KM strategies. Structures are built to facilitate KS and diffusion aiming to the ultimate goal of improving the innovative potential and problem-solving capabilities (Scarso et al., 2009). CoPs can act as supporters for a ‘cultural’ shift towards KS and pro-active behaviours.

In a study by Wei (2010) in-depth semi-structured interviews were carried out in a multinational company to disperse employees (21 Americans and 20 Chinese employees in various job roles), who all used the ShareNet social network tool. Questions regarding performance and effort expectancy, social influence and facilitating conditions showed that performance expectancy (convenient problem solutions by reaching out to many people quickly, professional developments through collective intelligence) was the strongest driver for both cultural groups to share knowledge through the ShareNet tool. In the company there was a strong knowledge sharing culture (a collection of multiple knowledge sharing channels were used) and those who used less the ShareNet tool did so due to lack of time, language difficulties or reluctance (the Chinese employees) to broadcast information/knowledge to people in different working contexts. There was clear evidence that the value of knowledge sharing for improving job performance was closely related to the fit between knowledge sharing and work practice.

Leadership traits and skills needed with virtual teams are not different from those used with collocated teams (Balstrup, 2004). The differences lie in the way they are exerted to create the desired results. The

successful leader of a virtual team must excel in applying the right choice of communication means along with a profound knowledge of the effect of using them.

Social computing (also called 'Web 2.0 or *'social web'*') are social networks for creating and maintaining social connections among individuals. The advent of the Web 2.0 revolution, including blogging, wikis and mashups has enabled a host of new services and possibilities on the Internet. Among many new possibilities, users can easily upload content that can be accessed, viewed and downloaded online by other users worldwide. Web 2.0 applications comprise the online platforms and tools that people use to share opinions, experiences, including photos, videos, music, insights and perceptions with each other. When deliberately used in virtual project management environments they can become an important enabler for knowledge storage and knowledge sharing.

Social computing applications have showed an enormous growth in popularity over recent years (Pascu et al., 2008). They are responding to underlying social trends of free dynamic collective content creation, assembly, organisation (tags), location and sharing (Paroutis and Saleh, 2009). The term 'Web 2.0' was coined by O'Reilly (2005). It refers to a perceived second generation of web applications that facilitate interactive information sharing, user-centred design, interoperability, and collaboration on the World Wide Web. Examples of Web 2.0 include web-based communities, hosted services, web applications, video-sharing sites, wikis, blogs, mashups (a web page or application that uses or combines data or functionality from two or more external sources to create a new service) and folksonomies (a system of classification derived from the practice and method of collaboratively creating and managing tags to annotate and categorize content).

The advent of Web 2.0 for example is believed to be the antidote to many barriers in knowledge sharing (Grace, 2009).

Wikis embody the highest attainable information-sharing dream, where a group of members voluntarily and unselfishly are collaborating, creating knowledge and working towards a common goal. Wikis are characterised by easy editing, links and references to other web sites related to terms mentioned in the wiki, change tracking and a built-in search function. Wikis are used by many organizations for project management to generate project documentation, including requirements documents, project plans and schedules, as well as reports and published deliverables.

Web 2.0 applications in general can be considered as communication enablers promoting horizontal knowledge sharing and a sense of community for its members. Web 2.0 communities are not just discussion groups; they offer up-to-date content and continuous community control with regard to member satisfaction.

Paroutis and Saleh (2009) studied the reasons for and the barriers to employees' active participation in various Web 2.0 platforms within a large multinational firm. They identified four determinants, namely history (established way of doing things), outcome expectations (perceived benefits and rewards, information overload), perceived organisational/managerial support (earlier Web 2.0 use, lack of knowledge and training about the tools and their benefits), and trust (quality and accuracy of information, confidential data and reciprocated knowledge sharing).

However, both experience and research show that our knowledge for designing online CoPs is limited (Barab et al., 2004). Some researchers even claim that enthusiasm about CoPs is well beyond empirical evidence (Schwen & Hara, 2003). In fact, many communities lack sustainability by falling apart soon after their initial launch due to lack of sufficient energy and synergies or by adopting a short-term opportunity driven behaviour, both of which lead to uncertainty and mistrust between the members and consequently to low quality of shared work results (Bettoni et. al, 2006). The benefits of CoPs seem to include the facilitation of greater variety in the knowledge domains of the members (De Carolis & Corvello, 2006).

Individuals may maximise personal utility, but for various reasons they also tend to hoard knowledge. The responsibility of the project leader is to provide the necessary structure and to create systematic ways to identify and convert individual expertise, skills, and experience into project knowledge.

Pascu et. al (2008) assert that Web 2.0 applications represent both challenges and opportunities for research and policy and that the positioning of Europe and how important it is for Europe to have a base in Web 2.0 applications need to be investigated. They postulate that low technology and financial entry levels, as well as viable business models, make these emerging applications likely to stay and develop. The development of web 2.0 applications opens a wealth of policy related research questions regarding (i) users as creators and innovators (ii) investment in Research & Development (R&D), (iii) competition friendly environment and (iv) IP protection.

From the literature, we conclude that knowledge sharing technologies are merely enablers for knowledge sharing (in the form of internet, intranet, information systems, online communities, WEB 2.0, Enterprise 2.0 and KM 2.0 infrastructures etc.) (Levy, 2009; Paroutis and Saleh, 2009; Pascu et. al, 2008; O'Reilly, 2005). Despite the many contemporary technologies that support collaboration among distributed work groups, there are still enormous difficulties building online work environments. However, more important and the most difficult aspect of effective KS seem to be concerned with people, processes and culture.

5. Research Aims, Hypothesis and Research Design

5.1 Aims

What seems to be lacking in most dispersed projects is a proven methodology for identifying and converting individual expertise, skills, and experience into explicit knowledge and to strategically align knowledge sharing and hence learning investment with value outcome (Balstrup, 2004). Developing such a methodology and then applying it to processes within the project will ensure that the output of every team adheres to the project's overall aims and subsequent strategy. The ideal environment and working practices will be to change the mindset and behaviour of team members so that instead of perceiving KS as an extra task for the team members, isolated from the knowledge of other team members, KS becomes the natural way to work for everyone. The results are likely to be a well-integrated, highly responsive project with members who can quickly take action regardless of location.

5.2 Formulation of research hypothesis

It is commonly accepted through anecdotal and research-based evidence that differences in cultural mindsets affect knowledge sharing and the success of projects. In particular, multinational projects depend heavily on modern technologies for capturing and sharing information and knowledge. In this investigation we aim to collect empirical data (by studying a sample of EU projects) in order to test the hypothesis “*Technology is not the only factor facilitating/hindering knowledge sharing*”. In essence, we aim to identify the major factors that maximise KS and hence help towards making projects a success or failure.

5.3 Research Design

The preceding conceptual discussion of cultural impacts and technology enablers on knowledge sharing has significant implications for the research design. As there is no dedicated research reported in the literature in Knowledge Sharing specifically in EU projects it was decided to adopt a *community-based action research* process (Stringer, 2007) where we start by collecting empirical data through approaching individuals participants in such projects. The second phase involves reflections and interpretation followed by evaluation and resolution of problems as well as proposals for solutions.

Hence, the research plan involves a pilot study where experiences and opinions of participants in current and previous projects will inform and finalise the questionnaire for the main (longitudinal) study which will be including a large number of projects and countries. The data at this stage will be analysed statistically. A framework for facilitating and improving Knowledge Sharing will be developed, and validated through application to representative projects.

6. Pilot Study Results and Interpretation

The authors have for the last 20 years been participating in several multinational projects mainly funded by European programmes such as Leonardo da Vinci (Minerva and Transfer of Innovation (TOI), multilateral and transversal projects), Gruntvig, Erasmus IP and Tempus project with an essential number of participant coming from different national, organisational and professional backgrounds.

In the pilot study a number of current and former EU project partners, participating in different lifelong learning projects, were sent an email and asked to respond to a number of questions regarding general beliefs/attitudes towards knowledge sharing and their experiences in general.

The response rate was very low (10%) and thus the responses cannot be tested statistically; only indicative responses are outlined showing the main preoccupations, worries and opinions of what hinders or improves Knowledge Sharing and hence the performance of multinational, multi-organisational and multi-person projects.

The most evident findings regarding the cultural differences of participants were the differences in participant organisational cultures; some of them being large traditional public Higher Educational (HE) organisations with own inflexible rules and regulations, others being Small and Medium sized Enterprises (SMEs) (even micro organisations consisting of one or two persons) trying to network for improved

acknowledgement in the market as training providers and for potential profit making (both current and future).

Partners coming from HE environments seemed to have difficulties regarding adaptation to EU rules (due to different deep-rooted rules and regulations, in particular in financial issues). Everybody seemed to agree or strongly agree that knowledge sharing is a basic value, it creates useful relationships (cooperation and team work encourages relations), and that project interest has to be put over personal interest. They also like to help other people if they ask for help/advice in a project-based problem, in general they trust the intention of project partners for sharing their knowledge with them and it is important that the other project members acknowledge their efforts. Another issue that everybody seems to agree on is that it is important to discuss lessons learnt for future projects before a project finishes. Respondents stated: *“Absolutely! And everybody in the home organisation should participate in lessons learnt sessions”* and *“This way, difficulties will be avoided and good points will be improved in a forthcoming project”*

Regarding other questions the opinions were divergent. When testing compliance factor (behaviour is primarily a result of incentives, rewards, or punishments) of the Influence Theory (Wei et al., 2008; Kelman, 1958) the respondents seemed to have different opinions like *“knowledge does not disappear even if it is shared! On the contrary, it grows due to networking and learning effects”* or *“Sure (compensation is needed for knowledge sharing), at least by added competence levels in staff record. Also some awards, like party...”* or *“There is no competition among members of a team. Everyone should share and be praised as a team”*, *“Most people make harder efforts when compensated”*. Similarly, regarding the responsibility of the project leader to motivate the project members to share knowledge there were comments like *“All have responsibility to be active in knowledge sharing – for their own interest”* and *“Some people need to be motivated by a leader in order to contribute more efficiently”*. Barachi (2009) considers that individuals do not offer knowledge for free. A modern portfolio theory needs to be considered in addition to factors, such as trust, attitude, leadership and group support. The motivation of participants of small training organisations this is very obvious, although according to Barachi also HE teacher motivation for knowledge sharing may be to earn money out of the profession or investment in hopes to receive even more information (knowledge) in return.

When asked if knowledge sharing is a process that occurs naturally there were different opinions and a statement *“knowledge sharing does not seem to work without proper infrastructure and common mechanisms, as kick offs, workshops...”* and when asked if rules for knowledge sharing should be established at kick-off meetings, one comment was: *“yes, to get trust”*.

When asked to list the obstacles/difficulties socio-political issues present to a project the following groupings of factors were found (the statements in italics are respondents' own words):

1. *“Misunderstanding between members”*, due to:

- Cultural differences:

- National culture, stated as: *“different cultures”*, *“language barriers”*, *“perception of time”*, *“lack of trust”*, *“arrogant and self-centered characters”*, *“people unable to cooperate and work in teams”*;

- Organizational culture, stated as: *“motives and culture of project leader organization”, “different backgrounds and expectations”*;
 - Social differences:
 - *“Interest only for personal benefits” (“money compensation”, “opportunities to travel”, “personal recognition and accomplishment”)*;
2. *“Too few face-to-face meetings and team building occasions”*;
 3. *“Lack of formal procedures for project implementation”*;
 4. *“No use of modern internet based collaboration tools”*
 5. *“Strict time-table”*;

When asked to list factors instrumental to the success of a project the following factors were emphasized:

1. Knowledge sharing environment: *“good communication tools”, “Common repositories to share documents and discussion topics”, “someone to activate on-line open discussion”, “nice/pleasant/motivating (collaboration) environment”*,
2. Leadership: *“good leadership/co-ordination”, “encouragement by the leader when facing difficulties”, “team management”*; *“project management skills to motivate members and ability to analyse situation”*; *“Some strong persons are real drivers of the project”*, *“Project leaders have high experience”*;
3. Teamwork: *“motivation and commitment by members”, “project members are motivated”*, *“overall willing to share”, “confidence and trust among member”, “trust among members”, “good relationships”, “well-understanding”*;
4. Face-to face meetings: *“visits in sites of other team members to get better practical touch in their circumstances”, “at least some face-to-face meetings”*;
5. Objectives and strategy: *“common targets”, commonly understood project plan”*;
6. Home organisation support: *“organisational/management commitment”*

The opinions collected as part of this pilot study provide positive indications towards the truth of the hypothesis *“Technology is not the only factor facilitating/hindering knowledge sharing”*. As is seen by both the list of obstacles and facilitators of knowledge sharing, as well as project performance (success/failure) the majority of statements refer to non-technical aspects of collaboration.

The initial results of the pilot study concerning the identified lack of a proven methodology in most dispersed projects regarding identification and conversion of individual expertise, skills, and experience into explicit knowledge and to strategic alignment of knowledge sharing with learning outcome, seem to indicate that in temporary projects consisting of often unknown project partners this can only be done by effective project management and initial face-to-face team building events, where cultural issues (national, organisational and professional) are discussed and common objectives, rules and plans (tasks, time-tables)

are agreed upon. In these initial events, demonstrations and training sessions should also be held regarding project future communication and knowledge sharing technology tools.

7. Conclusion

7.1 Concluding remarks

This paper reported on the importance of taking cultural differences (national, organisational and professional) into consideration for knowledge sharing in EU projects. In addition, the importance of using effective technology based communications tools was emphasised, such as Web 2.0 applications, as enablers for increased KS between dispersed EU project team members, who usually do not know each other in forehand, come together for a short period to achieve distinctive objectives. The use of user-friendly, effective knowledge sharing technology is in particular important for dispersed project members (due to geographical location, expertise and working habits) since informal KS is limited.

7.2 Future Work

As suggested in the research design and the plan the next stage in this research will involve the refinement, and extension of the questionnaire to include new questions in the light of the findings and understanding gained through the pilot study. It is aimed to target a large number of projects (running during the last 10 years) and many more additional countries, using contemporary technologies. The analysis of the study will be carried out using a statistical package such as SPSS to test the role of national culture, organisational culture, the role of gender, age and current socio-political situations.

References

- Ajmal, M. M., Kekäle, T. and Takala, J. (2009), "Cultural impacts on knowledge management and learning in project-based firms", *VINE: The journal of information and knowledge management systems*, Vol.39, No. 4, pp. 339-352
- Alavi, M. and Leidner, D.E. (2001), "Knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol. 25, No. 1, pp. 107-36.
- Balstrup, B. (2004), *Leading by Detached Involvement – Success factors enabling leadership of virtual teams*, MBA Dissertation, Henley Management College, UK
- Barab, S. A., Kling, R. and Gray, J. H. (2004), *Designing for Virtual Communities in the Service of Learning*, Cambridge University Press, Cambridge, UK
- Barachini, F. (2009). Cultural and social issues for knowledge sharing, *Journal of Knowledge Management*, Vol. 13, No. 1, pp. 98-110
- Bettoni, M., Andenmatten, S. and Mathieu R. (2006), "Knowledge Cooperation in Online Communities: A Duality of Participation and Cultivation", in Peter Feher (ed), *Proceedings of 7th European Conference of Knowledge Management (ECKM06)*, 4-5 Sept., Public Academic Conferences Ltd. Reading, UK, pp. 36-42

- Chen, J., Sun P. Y. T. and McQueen R. J. (2010), "The impact of national cultures on structured knowledge transfer", *Journal of Knowledge Management*, Vol. 14, No. 2, pp. 228-242
- Ciganek, A., Nicholls, E.M., and Srite, M. (2008), "Organizational Culture for Knowledge Management Systems: A Study of Corporate Users", *International Journal of Knowledge Management*, Vol. 4, No. 1, pp. 1-16
- Davenport, T. and Prusak, L. (1998), *Working Knowledge: How Organizations Manage What They Know*. Boston, MA: Harvard Business School Press.
- De Carolis, M. and Corvello, V. (2006), "Multiple Competences in Distributed Communities of Practice: The Case of a Community of Financial Advisors", in Peter Feher (ed), *Proceedings of 7th European Conference of Knowledge Management (ECKM06)*, 4-5 Sept., Public Academic Conferences Ltd. Reading, UK, pp. 116-125
- Elron, E. and Vigoda-Gadot. E. (2006). "Influence and Political Processes in Cyberspace: The Case of Global Virtual Teams", *International Journal of Cross Cultural Management*, Vol. 6, No. 3, pp. 295–317
- Georgiadou, E. and Siakas, K. (2010), "KASL – II: A Dynamic Four Loop Model for Knowledge Sharing and Learning", *Software Process: Improvement and Practice (SPIP) Journal*, John Wiley & Sons (Accepted)
- Georgiadou, E. and Siakas, K. (2009a), "A Dynamic Model for Improving Knowledge Sharing in Virtual Organisations", *Industrial Stream of European Software Process Improvement (EuroSPI 2009)*, Alcalá, Madrid, Spain, 2-4 September, pp. 3.37 – 3.47
- Georgiadou, E. and Siakas, K. (2009b), "Collaborative projects: A bottom up approach to European Integration", *Annual Edition of the International Technology, Education and Development Conference (INTED 2009)*, Valencia, Spain, 9th - 11th of March, 2009, ISBN: 978-84-612-7578-6, pp. 5091-5099
- Grace, T.P.L. (2009), "Wikis as a knowledge management tool", *Journal of Knowledge Management*, Vol. 13 No. 4, pp. 64-74
- Holsapple C. W. (2009), "A new map for knowledge dissemination channels". *Communication of the ACM*, Vol. 52, No. 3, pp. 117-125
- Holsapple, C. W (2005), "The inseparability of modern knowledge management and computer based technology", in *Journal of Knowledge Management*, Vol. 9, No. 1, pp. 42-52
- Holste, J. S., Fields, D. (2010). "Trust and tacit knowledge sharing and use", *Journal of Knowledge Management*, Vol. 14 No. 1, pp. 128-140
- Hofstede, G. (2001), "National culture and organizational practices", in Ashkanasy, N. (Eds), *Handbook on Organizational Culture and Climate*, Sage Publications, Thousand Oaks, CA.
- Kasvi, J. J., Vartianinen, M. and Hailikar, M. (2003), "Managing knowledge and knowledge competencies in project organizations", *International Journal of Project Management*, Vol. 21 No. 8, pp. 571-582
- Kelman, H.C. (1958), "Compliance, identification and internalization: three processes of attitude change", *Journal of Conflict Resolution*, Vol. 2, No. 1, pp. 51-60
- Love, P., Fong, P. S. W. and Irani, Z., (2005), *Management of Knowledge in Project Environments*. Elsevier Ltd.
- Magier-Watanabe, R. and Senoo, D. (2010), "Shaping knowledge management: organizational and national culture", *Journal of Knowledge Management*, Vol. 14, No. 2, pp. 214-227

- O'Reilly T. (2005), "What Is Web 2.0? Design Patterns and Business Models for the Next Generation of Software", available at <http://oreilly.com/web2/archive/what-is-web-20.html>, accessed 3.4.2010
- Paroutis, S. and Saleh, A. A. (2009), "Determinants of knowledge sharing using Web 2.0 technologies", *Journal of Knowledge Management*, Vol. 13, No. 4, pp. 52-63
- Pascu, C. Osimo, D., Turlea, G., Ulbrich, M., Punie, Y. and Burgelman J-C. (2008), "Social computing: implication for the EU innovation landscape", ISSN 1463-6689, Emerald Group Publishing Limited, DOI 10.1108/14636680810856017, Vol. 10, No. 1, pp. 37-52
- Schein, E. H. (1985), "How Culture Forms, Develops and Changes" in R. H. Kilmann & M. J. Saxton, In R. Serpa (eds.): *Gaining control of the Corporate Culture*, San Francisco, USA: Jossey Bass
- Schwen, T. M. and Hara, N. (2003), "Community of Practice. A Metaphor for Online Design?" *The Information Society*, 19, pp. 257-270.
- Scarso, E., Bolisani, E. and Salvador L. (2009), "A systematic framework for analyzing the critical success factors of communities of practice", *Journal of Knowledge Management*, Vol. 13 No. 6, pp. 431-447
- Siakas, K. and Georgiadou, E. (2008), "Sharing in Virtual and Networked Organisations in Different Organisational and National Cultures", eds. Ettore Bolisani, *Building the Knowledge Society on the Internet*, Idea Publishing, ISBN: 978-1-59904-816-1, Part 1, Chapter 3, pp.45-64
- Siakas, K. and Siakas, E. (2008), "The need for trust relationships to enable successful virtual team collaboration and software outsourcing", *The International Journal of Technology, Policy and Management special issue on Human Aspects of Information Technology Development*, Inderscience Enterprises Ltd., Vol. 8, No.1 pp.59 - 75
- Siakas, K. and Georgiadou, E. (2006), "Knowledge Sharing: Cultural Dynamics", in Peter Feher (ed), Proceedings of 7th European Conference of Knowledge Management (ECKM06), 4-5 Sept., Public Academic Conferences Ltd. Reading, UK, ISBN 978-1-905305-26-5 Book, pp. 505-513
- Stringer, E. T. (2007), *Action Research: A handbook for practitioners 3e*, Newbury Park, Ca.: Sage.
- Usoro, A. and Kuofie, M.H.S., (2006), "Conceptualization of Cultural Dimensions as a Major Influence on Knowledge Management", *International Journal of Knowledge Management*, Vol. 2, No. 2, pp. 16-25
- Wei, L. (2010), "Virtual knowledge sharing in a cross/cultural context", *Journal of Knowledge Management*, Vol. 14, No. 1, pp. 38/50
- Wei, J., Stankosky, M., Calabrese, F., and Lu, L., (2008), "A framework for studying the impact of national culture on knowledge sharing motivation in virtual teams", *VINE: The journal of information and knowledge management systems*, Vol. 38 No. 2, pp. 221-231
- Zakaria, N., Amelinckx, A. and Wilemon, D. (2004), "Working together apart? Building a knowledge-sharing culture for global virtual teams", *Creativity and Innovation Management*, Vol. 13, No. 1, pp. 15-29.