WEB CONFERENCING
A Tool for Knowledge Transfer between Universities and Business Organizations

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Keywords: Web collaboration, Web conferencing, Knowledge transfer.

Abstract: It is commonly accepted that universities are an important source of new knowledge, especially in the science and technology sector. The mechanisms to transfer this new knowledge from academia to business organizations are widely discussed by many authors. This paper presents how web collaboration environments may help in distance knowledge transfer and also a web conferencing example meant to stress the factors which led to a successful web meeting for knowledge diffusion. There is presented also the positive feedback of the attendees, in the conditions of low participation rate in previous similar experiences.

1 INTRODUCTION

One of the most interesting research subjects in the e-learning area is represented by the establishing of new collaborative environments, important spaces where people can share and create knowledge. In most of cases, the universities promoted such initiatives, even for developing specific educational actions, but also for spreading the knowledge to the economic environment or promoting different applied projects together with various corporate organizations. In this sense, a clear actual trend is offered by the development of such networks within collaborative environments, having as objective the increasing of their innovation capability, where different organizations are focused on the development and sharing of core competences. As a result of the practical implementation, some networking models have been developed like *Extended Enterprises* or *Virtual Enterprises* (Flores et al., 2007) (Barbat & Filip, 2007). But the collaborative environments have as basis the collaborative technologies which consist of a range of different tools, systems and IT platforms, all of them having an important role to the consolidation of the virtual collaborative communities.

2 DISTANCE KNOWLEDGE TRANSFER

An intensive exchange of knowledge between universities and business firms "is not a goal by itself but a means to sizable economic benefits" (Arvanitis et al., 2005).

Bekkers and Bodas Freitas have identified in 2007, in the scientific literature, four main channels through which knowledge and technology is being transferred between universities and industry: (1) publications and patents, (2) collaborative and contracted research activities, (3) employment of university researchers by firms, and (4) informal contacts (Bekkers & Bodas Freitas, 2008). Except the first one, all the other knowledge transfer channels require a direct interaction between universities and industry representatives. This direct interaction is even more important in case of tacit knowledge transfer, because "effective transfer of tacit knowledge generally requires extensive personal contact and trust" (Song, 2009).

The interaction, which can be materialised through face-to-face meetings, between the knowledge creator and the recipient can be done without many efforts if they are located in the same

geographical region. The costs of interaction could significantly increase when the two interaction parts are, more or less, far away one from another. Travelling and face-to-face meetings can be tiring and stressful and interaction efficiency can be affected. In this case, a web collaboration / conferencing platform can allow people get in contact without the physical limitations of distance, time, and organizational boundaries. Web meetings are cheaper and request less time to organize them.

The amount of resources involved in web meetings is significantly reduced and the number of attendees, knowledge creators and recipients, is likely to increase as it is often easier for people to connect online, making each meeting more efficient. Therefore web conferencing / collaboration offers a more efficient, flexible and dynamic approach to meetings (Suduc et al., 2009).

3 WEB CONFERENCING AND WEB COLLABORATION

There are two categories of conferencing environments which support web meetings: web conferencing and web collaboration environments.

Typically, the web conferencing environments are designed as unidirectional tools: a member of the group sends information to multiple locations (from speaker to audience, from knowledge creator to recipients). Many other web conferencing software also offer basic bidirectional or multidimensional communication tools (such as voting, chat, instant messaging, whiteboards, video feed(s) and feedback to the presenter who can share a presentation or the display from an application on his or her desktop) (Austin et al., 2006). These tools might be very useful for the fourth channel - identified by Bekkers and Bodas Freitas - for knowledge transfer: *informal contacts*.

For the second channel for knowledge transfer, *collaborative and contracted research activities*, and, in some cases for the third channel, *employment of university researchers by firm*, a web collaboration environment might be the solution, in case of distance collaboration. Web collaboration platforms are many-to-many conferencing tools which support activities like brainstorming, list analyzing, evaluating, rating, categorizing, grouping, organizing, problem solving, assessing risk, strategy planning, consensus building, capturing knowledge, product development (Collins, 2006). Usually web conferencing software allows, besides visual and audio participation, face-to-face like, shared whiteboards, desktop application sharing, computer access and storage, video recording to keep a permanent record of the knowledge transfer (Suduc et al., 2010). Therefore, web collaboration platforms offer features not only for knowledge transfer but also for knowledge creation.

In the following there will be used the concept of *web conferencing* for both categories of web meetings: web conferencing with basic features for bidirectional or multidimensional communication and for web collaboration.

4 METHOD

In the frame of the European Comenius 2.1 project entitled "Virtual Community Collaboration Space for Science Education - VccSSe", a project results dissemination web conference has been organized. Even the main objective of this web meeting was not the knowledge transfer from academia to business organization but a knowledge diffusion from creators to end users in general, the analysis of the web conference participants' responses to a feedback questionnaire filled at the end of the web meeting may show what are the factors which influence the success or the failure of a knowledge diffusion web meeting and what is the perception of the users who have no or low experience in using web conferencing environments.

The main activities included in the web conference agenda were: the project presentation, the demonstration and presentation of a series of online simulating laboratories and virtual experiments for Science education (project outcomes), the description of the guideline of the best practices, followed by discussions and comments. The duration of the web conference was one hour.

Adobe Connect Pro represented the software solution chosen for developing the web conferencing. The number of participants was 100, located in 12 connection points in Finland (one was the host of the Adobe Connect Pro server), Romania, Greece, Spain, Poland, Turkey, Portugal and Norway (Suduc et al., 2010).

5 RESULTS AND DISCUSSIONS

5.1 Coordination

In web conferencing, the coordinating skills represent a crucial aspect for having a successful session. In this sense, the connection with the remote sites and the testing in advance represent compulsory activities. In addition, a reviewing of the session plan from the technical point of view and some practical activities with the related equipment are good options before starting. During the session, the projected web meeting plan has to be carried out as it is established, with a definite period for each activity (presentations, discussions, voting, etc.).

The facilitator (coordinator) must lead the session in a logical sequence, ask for responses from the audience, review the main points but offer a proper enthusiasm and promote a friendly atmosphere. The facilitator has also to find or create a shared context that enables the web meeting participants to see that they are similar in some important aspects to others in their group, to build familiarity among group members. Psychologists have demonstrated that people need a common context in order to build new relationship (Clark, 1996). The relationship building requires a significant effort because the distance decreases the group members' involvement.
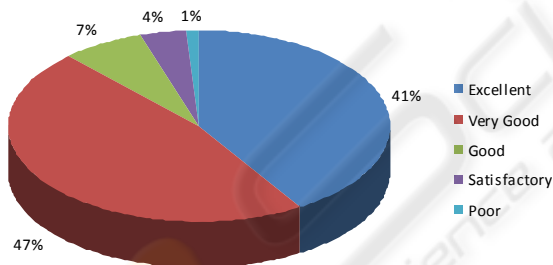

Figure 1: Appreciation related to the coordinating skills of the web meeting organized in the frame of VccSSe project.

Taking into account all the mentioned aspects, during the web meeting organized in the frame of the VccSSe project, the coordinating skills were appreciated by 88% of participants as excellent and very good (figure 1).

Because the web conference organization was a collective effort of the VccSSe project partners, the participants were asked to evaluate the coherence of the partners' performance content with the projected web meeting plan. A percentage of 86% of the participants responded *excellent* and *very good* (figure 2).
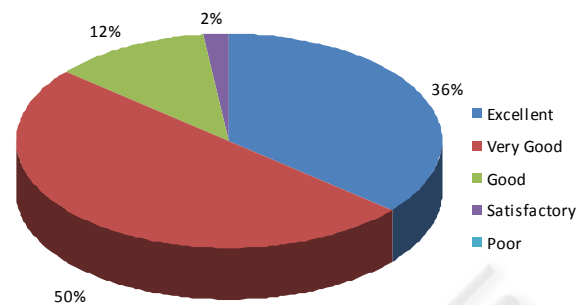

Figure 2: Evaluation of the coherence of the partners' performance content with the web meeting plan.

5.2 Time

A good management implies also a better allocation of the web meeting time, especially when the participants are numerous. In this sense, all the participant groups need optimum periods for presentations and discussions. The time has to be well balanced with a maximum benefit of gathering information from the participants' point of view. The web meeting organized in the frame of the VccSSe project offered an effectiveness of the time usage for the participant groups appreciated by 79% of participants as *excellent* and *very good* (figure 3).
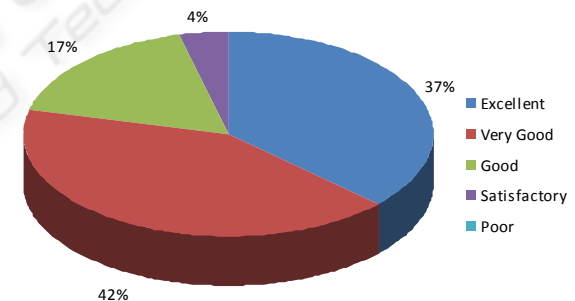

Figure 3: Appreciation of the effectiveness of time usage in the participant groups.

5.3 Clarity and Expectations Achievement

Finally, two criteria linked with the success of the web meeting are important to be presented: the clarity of the goals and the level of the expectations achievement. Setting the meeting' goals mean in fact to establish some indicators that describe the participants' performances.

In the case of the VccSSe project web meeting, the presentations and the contributions to discussions were evaluated as very positive aspects

which strength the clarity of the meeting goals, before its realization. In this case, 87% of participants appreciated this aspect as *excellent* and *very good* (figure 4).
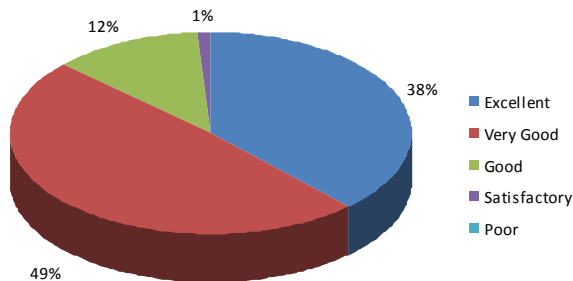

Figure 4: Appreciation of the clarity of the web meeting goals before the realization.

It was appreciated also that the web meeting guests' expectations were met at a significant level: 85% of the participants appreciated this fact as *excellent* and *very good* (figure 5).
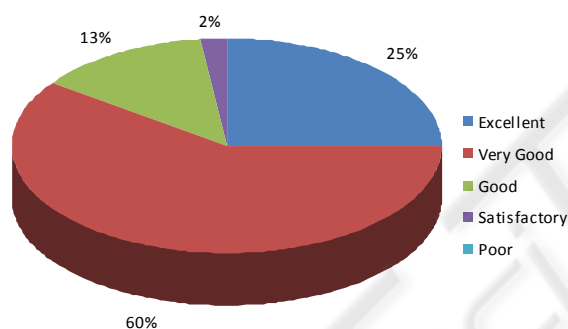

Figure 5: Evaluation of the extent to which the web conference guests' expectations were met.

6 CONCLUSIONS

Because knowledge transfer often involves direct interaction between the creator - professors and researchers and the recipient - firms, and in many cases those two are located in different geographical areas, web collaboration environments seem to be the proper tools for an efficient and affordable mean to knowledge transfer. Web conferencing can reduce travel and facility costs, but also can improve knowledge transfer quality.

The results presented in this paper show that the participants to a knowledge dissemination web conferencing can be more than satisfied of the meeting if the meeting is properly organized and coordinated.

REFERENCES

Arvanitis, S., Sydow, N., & Woerter, M., 2005. *Is There Any Impact of University-Industry Knowledge Transfer on the Performance of Private Enterprises? – An Empirical Analysis Based on Swiss Firm Data.* Retrieved March 2010, from Social Science Research Network: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=892571

Austin, T., Drakos, N., & Mann, J., 2006. *Web Conferencing Amplifies Dysfunctional Meeting Practices.* Retrieved 2009, from Gartner: http://data.vitusbering.dk/vbi/isi/Gartner-web_conferencing_amplifies_d_138101.pdf

Barbat, B., & Filip, F. G., 2007. *Informatica industrială: Ingineria programării în timp real.* Bucharest: Technical Publishing House.

Bekkers, R., & Bodas Freitas, I. M., 2008. Analysing knowledge transfer channels between universities and industry: To what degree do sectors also matter? *Research Policy , 37*, 1837–1853.

Clark, H. H., 1996. *Using Language.* Cambridge University Press.

Collins, P., 2006. *Today's Meeting Spectrum.* Retrieved from Web Collaboration: http://www.webcollaboration.biz/why_spec_p02.html

Flores, M., Boer, C., Huber, C., Plüss, A., Schoch, R., & Pouly, M., 2007. Establishing the Foundation of Collaborative Networks. In L. Camarinha-Matos, H. Afsarmanesh, P. Nova, & C. Analide (Ed.), *IFIP International Federation for Information Processing. 243*, pp. 123-134. Boston: Springer.

Song, D., 2009. The Tacit Knowledge-sharing Strategy Analysis in the Project Work. *International Business Research , 2* (1), 83-85.

Suduc, A. M., Bizoi, M., & Filip, F. G., 2009, September. Exploring Multimedia Web Conferencing. *Informatica Economica Journal, 13* (3).

Suduc, A. M., Bizoi, M., Gorghiu, G., & Gorghiu, L. M., 2010. Using web conferencing for disseminating the educational projects results. *World Conference on Educational Sciences.* Istanbul.