Rates on Collaborative Platforms Activity in Multinational Educational Projects

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Abstract: - Although the e-mail is the most used technology for remote collaboration, the team work within multinational projects involves collaborative activities that only the e-mail cannot support. The aim of the paper is to evaluate the activity amount that a multinational team has on a collaborative platform used to support the team work. The paper presents two examples of collaborative platforms usage for communication and for collaborative work within European educational projects.

Key-Words: - multinational educational projects, collaborative platforms, activities reports

1 Introduction

Messaging applications, such as e-mail and instant messaging are the most pervasive team-based communication tools, the "most common and best-understood computer-mediated technology for distance collaboration" [4]. They provide features for synchronous and asynchronous interaction, thus facilitating information sharing and decision making. Traditionally, the collaboration between the members of multinational projects is done by e-mail and sometimes by instant messaging. With *an increasing use* of e-mail in the last decades, the numbers of messages that a person receives daily has increased a lot, too. Thus, it has become difficult to manage the messages flow. Within the project partnership, exchanging data represents a very important aspect. The collaborative work between the members' team involves the work on the same material, in many cases. Managing file versioning by e-mail is sometimes a real challenge [8].

Instant messaging applications support synchronous communication, and have the advantage of offering the possibility to see if another team member is online or not ("presence awareness"). Both e-mail and instant messaging technologies help in geographically dispersed team work, especially in social/relational interaction support, but for a real effective team work, a collaborative platform is needed.

2 Collaborative platforms

Within international educational projects the collaborative platforms must support activities, which frame in the same - time / different - time and different

place category of the computer support for collaborative work Johansen matrix [9].

During the last years, there have been developed many complex cooperative platforms.

The main activities that a collaborative platform usually supports are: messages exchange using e-mail, multi-user chat or forum, calendar, to-do lists, file sharing and versioning and personal notes.

In the following sections, there are presented two collaborative platforms which have been used for communication and for collaborative work in the frame of two Comenius 2.1 multinational educational projects.

The two collaborative platforms are: BSCW - Basic Support for Collaborative Work (afterwards renamed Be Smart Cooperate Worldwide) and phpGroupWare.

2.1 BSCW platform

BSCW (http://www.bscw.de/english/product.html) is a collaborative platform that manages workspaces for different groups. The users may be members of several workspaces (e.g. one workspace corresponding to each project a user is involved with). A shared workspace can contain different kinds of information such as documents, pictures, and URL links to other Web pages or FTP sites, threaded discussions, member contact information and more [1]. BSCW is commercial software with a flexible licensing system which depends on the number of users and on the time of use.

Distributed as a server-based package or as a service, the BSCW system is accessible to the end users through a web browser on an Internet-connected computer. BSCW ensures a minimal effort to manage complex

workflows and provides a flexible role concept so the managers can define access rights for individual group members. The users can upload data to the workspace and set rights to control the visibility of this information or the operations which can be performed by others. The most useful features for trans-national cooperation that BSCW provides are: document versioning (manage different document versions), transferring (a variety of document transfer mechanisms) and locking (the others access rights can be temporarily denied), discussion forums (threaded forums), annotations and ratings, event notifications (customized email notifications and daily reports), customized access rights (by user and data), search facilities, archive functions, sending documents (directly from the workspace), online surveys (the survey results can be presented in visual form with related graphs), contact lists (the contact list can be shared), mobile access (PDAs and SmartPhones), integrated HTML editor (directly in the BSCW document management facility), appointment and reminder service (personal time management tool), interfaces (interfaces to link BSCW to external systems such as conferencing platforms, conversion services interfaces), individual user interfaces (interface tailoring according to needs) [3].

2.2 phpGroupWare platform

phpGroupWare is a "fully featured, web based messaging, collaboration and enterprise management platform" (http://www.phpgroupware.org/). It is provided with a range of modules (more than 50 applications) that can be selected and installed according to needs. Some of the most powerful features that can be used for multinational team collaboration are: contacts management, email, shared web-based calendar, to-do lists, address book, web content and document management and sharing, project management, issues tracking.

The phpGroupWare is a free to use platform which is a real alternative to commercial collaborative software, but more than that it is open source software - which means that it can be modified to accommodate specific needs. phpGroupWare allows users to build and deploy their own web based applications quickly and easily and supports multiple database backend, permissions and access controls, user interface generation and multiple languages. phpGroupWare currently supports over 20 languages and its flexibility and scalability make it suitable both for small groups and large groups.

3   Results and discussions

It is interesting to observe how much a collaborative platform is used during a multinational project life-time,

in accordance with the project activities. In the following there will be presented two cases. Both multinational projects analyzed are European Educational projects in the Comenius 2.1 Program. The first one, *A Future Way for In-Service Teacher Training across Europe - FISTE Project* (http://fiste.ssai.valahia.ro/), started in 2004 and ended in 2007. The second one, *Virtual Community Collaborating Space for Science Education - VccSSe* Project (http://vccsse.ssai.valahia.ro/), started in 2006 and it ends in September 2009.

In both projects, since the beginning, the coordinating institution has set up different ways of communication among the partnership. Because the face-to-face meetings (trans-national meetings) are limited in number and expensive, the collaborative technologies have become the most important way of communication and collaboration. Besides traditional e-mails (for each project was created a mailing list), collaborative platforms were installed on dedicated servers, offering the possibility of sharing ideas and working in real time inside the partnerships [7].

For FISTE projects it was selected the BSCW platform and for VccSSe project the phpGroupWare system.

In order to understand how the collaborative platforms usage rate varies over time, there will be presented below the main activities deployed in time in the frame of the discussed projects.

3.1. The FISTE and VccSSe projects

The FISTE project aimed at "finding new ways of how to teach in-service teachers in in-service teacher training and how the teachers themselves can learn and upgrade their knowledge and teaching methods by using ICT" [10]. The project partnerships include seven partners from five countries: three from Romania (including the coordinator) and one from each of the following countries: Finland, Iceland, Spain and Latvia.

The main activities of FISTE project are related to a national on-line course (*Integrating ICT in Traditional Training*) and then to a European on-line course development (*ECSUT: Educational Challenges & Solutions in Using ICT*). The first course was organized by each partner with local trainees. As for the European course, teachers from different European countries have participated.

To support the FISTE project activities a BSCW system was acquired for 3 years (project time) and 300 users.

The VccSSe project objective was to adapt, develop, test, implement and disseminate training modules, teaching methodologies and pedagogical strategies based on the use of Virtual Instrumentation for science

subjects teaching [11]. The VccSSe project, coordinated by a Romanian institution, brings together trainers from nine institutions from five countries: two from Romania, three from Spain, two from Poland, one from Finland, and one from Greece.

The main activities of the projects consisted of one or two editions (the number differs from partner to partner) of a blended course (Virtual Instrumentation in Science Education) and the elaboration of a DVD edition of the project results. The training modules were organized by each partner at different moments of time, in one or two editions according to national framework.

The selected environment for supporting the project team work was the phpGroupWare platform. The platform was chosen to be used due to its feature richness and flexibility and not least because it is free of charge.

Besides the activities presented above, both projects include many other important activities. In this paper we can find only the two mentioned ones due to the fact that the biggest effort of the partnerships was focused on developing the training and designing the DVD edition (VccSSe) or creating dissemination volumes (FISTE, VccSSe).

3.2. Numerical data

The BSCW used in the frame of FISTE project is analyzed for the period of time between January 2005 and May 2007 [2] and phpGroupWare in the frame of VccSSe between January 2007 and May 2009.

Some partners had experience in using BSCW, so that was the reason for selecting this particular platform, not only for communication and collaboration between partners, but also for courses development and communication with the trainees.

While the FISTE project used only one platform, the VccSSe project used two environments: the first one for the collaboration between partners - phpGroupWare - and another one, a dedicated eLearning platform for working with trainees (Moodle platform).

In order to evaluate the use rates for the collaborative platforms, in the analyzed periods of time, there have been considered three criteria:
- Number of visits on the platform;
- Number of files open on the platform;
- Total information traffic in Mega Bytes.

The data used for evaluating the use rates are produced with the help of Webalizer software [12].

The number of visits represents a series of requests from the same uniquely identified client with a set timeout. A visit is expected to contain multiple hits (requests for a file - image, HTML file, JavaScript or cascading style sheet etc. - to a Web server) and page views.

Figure 1 clearly shows an intense activity during the FISTE courses. The national on-line courses started at different moment from June 2005 until October 2006. The visits' peaks on the graphic show the partners' efforts at different moments of time.
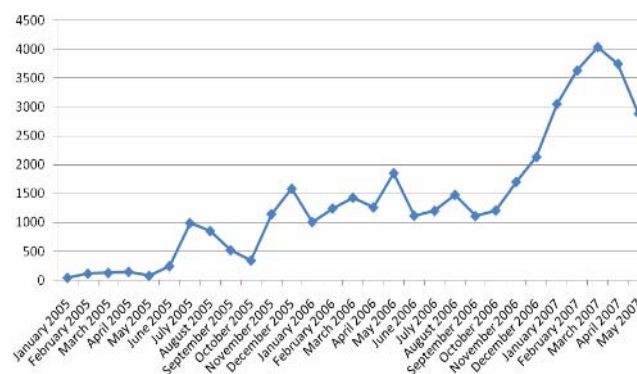

Fig. 1 Total visits monthly on BSCW

The biggest accession, starting November 2006 until March 2007, is registered during the European on-line course when all the partners participated to the organizing of the course.

Figure 2 illustrates the total visits on phpGroupWare. The number of visits doesn't differ too much from one month to another, excepting the last three months, because the partnership effort was almost constant during the project. The increased activity during the last months is owed to the extra effort to gather all the partners' outcomes and to make decisions in order to create the DVD edition of the project.
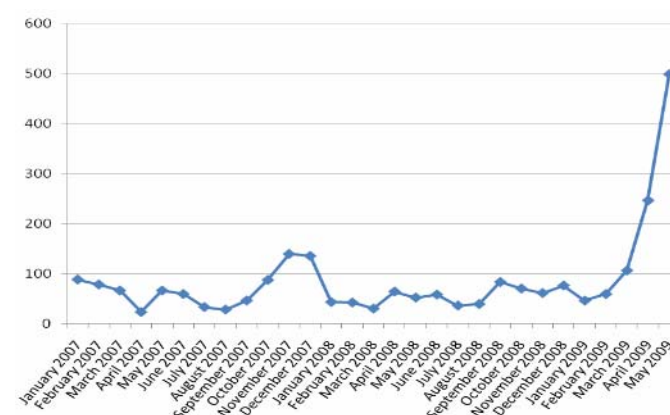

Fig. 2 Total visits monthly on phpGroupWare

Figure 3 shows the total files monthly opened on the BSCW platform. The highest number of files opened on the platform was registered in December 2005, when the Romanian on-line course version was in progress.

In figure 3 it is visible another busy period, from November 2006 until March 2007. The highest numbers are correlated with the activities when the trainees were involved in the Technological Unit of the courses. The

activities of this unit (many files to download, video-conferencing sessions, discussions etc.) imposed an intensive use of the platform which was clearly visible into the graphics.
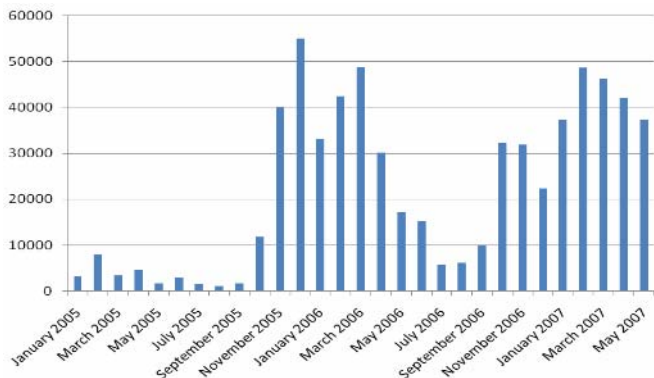

Fig. 3 Total files monthly opened on BSCW

Another high number of opened files was registered in March 2006 when the participants uploaded their final products on the platform. Due to the big number of participants, the traffic in Mbytes, represented in figure 5, increased very much in this month.
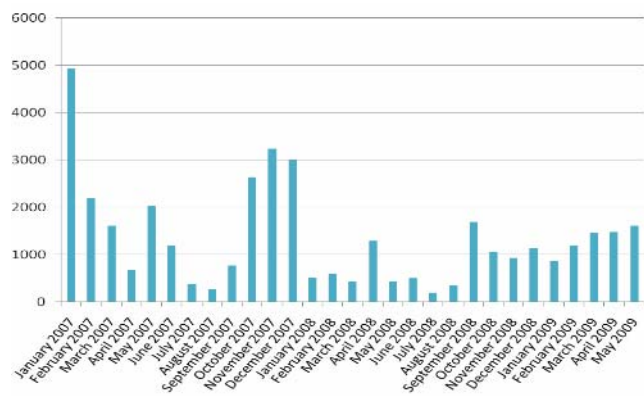

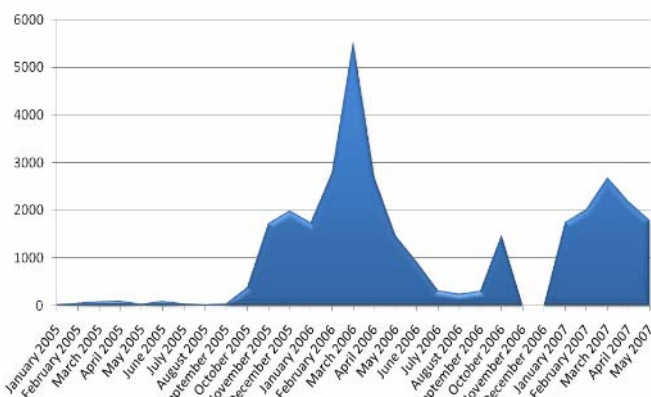Fig. 4 Total files monthly opened on phpGroupWare

Fig. 5 Total traffic on BSCW in MegaBytes

Figures 4 and 6 show the total number of files monthly opened and the total traffic on phpGroupWare. The peak recorded in January 2007 is owed to the partnership enthusiasm and the objective need to discover the platform. While on FISTE, some partners had experience on using BSCW in a previous project, on VccSSe the phpGroupWare was new for all the partnership members. The decision to select this platform was done based on financial matters, the phpGroupWare software being a free of charge application.

Figure 6 shows the periods of time when the partners worked together to fulfill different project activities.
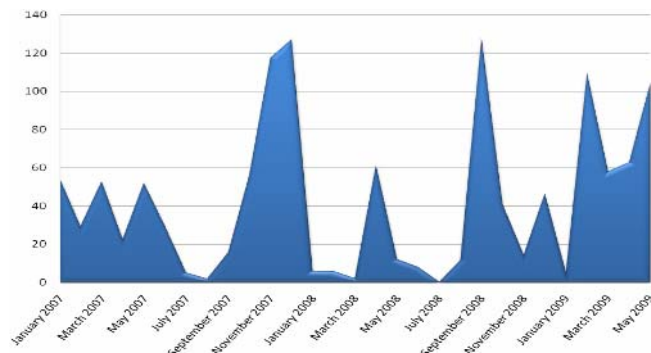

Fig. 6 Total traffic on phpGroupWare in MegaBytes

Analyzing all the figures, it can be observed that on BSCW there are two big periods of time with a sustainable activity correlated with the two FISTE courses deployment. During these courses the number of users increased a lot, the platform being accessed not only by the partnership members but also by the trainees.

On phpGroupware the busy periods of time are more often because there are correlated not only with the courses but also with the other project activities (the development of: VccSSe e-Space, training materials, database for Virtual Experiments, Virtual Experiments Exhibition, Guidelines for best practices, dissemination videoconference, DVD project edition etc.). The partnership members are the only phpGroupWare platform users and the platform supports only the project team work, the courses activities being developed on the Moodle platform.

Table 1 highlights the activity rates differences between the two used platforms. The BSCW activity rates are considerably higher than the phpGroupWare activity rates.

Table 1. Total activity numbers for the whole period (29 months)

Description	BSCW	phpGroupWare
Number of visits	40276	2457
Number of files opened	642214	38653
Total traffic in Giga Bytes	31.67	9.71

The difference is more obvious if we analyze the average numbers per day, presented in Table 2.

The FISTE analyzed period has 881 days. The average numbers per day are: 46 visits, 729 files opened, 37 MB traffic amount.

Table 2. Average activity numbers per day

Description	BSCW	phpGroupWare
Number of visits	46	3
Number of files opened	729	43
Total traffic in Mega Bytes	37	1.4

On the VccSSe project, for 882 days, the average numbers per day are: 3 visits, 43 files opened, 1.4 MB traffic amount.

On BSCW, the average number of visits is fifteen times greater that on VccSSe. The files opened per day are sixteen times greater and the traffic amount is 26 times greater than on VccSSe.

The great difference on traffic amount is mainly because the users' numbers differ much: on BSCW there were at any moment 300 users (project team and trainees), but the total number of users overcome in a great range this number - probably around 500 users, but on phpGroupWare only 42 users (project team) worked on the platform.

4 Conclusion

The collaborative platforms have exponentially gained ground in the last years [5, 6].

The activity amount on collaborative platforms is not easy to quantify. The platform visits number, the number of the total files opened and the total traffic amount are statistical data that can broadly indicate how much the platform was used.

The two examples of collaborative platform usage within multinational projects show that the activity rate may vary, in a great extent, from project to project and from platform to platform. This variation depends mainly on the number of users and the project activities. Another reason for this variation, which is worth to be mentioned, is if the users know or not to use the collaborative platform or at least if they have used another similar technology before.

5 Acknowledgements

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