

Partial distributed teams as learning practice: experience from PDT project

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Abstract

Paper presents experience of participating in Partially Distributed Teams project, which is considered as good learning practice for students. During the project student work in subteam which are physically co-located and share the same work context, however geographic distance separates multiple subteams such that collaboration between subteams occurs primarily through electronic communication. When geographic distance is compounded by cultural distance and time zone differences, technology is used to facilitate and learn from cooperation process.

Keywords: partially distributed teams, ICT, learning practices

1. Introduction and back ground

ICT development in the recent years drastically changed business environment, enterprises business models and required competencies of workers. Within this context ICT directly impact educational process and methods allowing introduce new ways of teaching and engaging students. Within this paper we analyze experience of deploying ICT infrastructure between various countries universities in order to cope with upcoming new millennium challenges. The aim of the paper is to summarize experience of partially distributed team project and outline key lessons learned.

ICT brought many challenges, which requires new skills and knowledge of modern employer:

- *Globalization.* Globalization is a process of interaction and integration among the people, companies, and governments of different nations, a process that is an inevitable phenomenon in human history that's been bringing the world closer through information, knowledge, culture and exchange of goods. In particular in ICT context among many forms of globalization there is information and knowledge access and sharing.
- *Digitalization.* ICT have direct impact on digitalization as serves as main catalyst for digitalization process. In broad perspective digitalization is defined as integration of digital technologies (in particular ICT) into everyday life by the digitization of everything that can be digitized.
- *Virtualization.* According Wikipedia virtualization is term that refers to the various techniques, methods or approaches of creating a virtual (rather than actual) version of something. In ICT context this refers to providing various tools and infrastructure enabling virtual version creation.
- *Cross-cultural issues.* Although globalization outcome is growing integration and information sharing toward more commons and unified approached, significant difference between various regions and countries exists. These differences are

very clearly addressed from the cultural perspective which brings the challenge for better understanding cultural impact on attitudes and behavior.

In particularly addressing these challenges EC launched **The Grand Coalition for digital job creation: Closing the gap by 2020** initiative, which represents an EU wide multi-stakeholder partnership helping to address mismatches and fill vacancies of ICT practitioners to boost employment. This initiative addresses 5 key areas:

- **Training and matching for digital jobs.** EC stresses need for training programmes that meet employers' needs and develop appropriate competencies and skills. The precondition of successful programme is alignment with various stakeholders in particular from industry side.
- **Mobility.** Hiring ICT practitioners from other countries remains a challenge for many SMEs; while large companies have sufficient resources and extended networks, small companies lack information and scale.
- **Certification.** EC call for single **certification** schema for ICT practitioners, based on European quality labels for ICT industry and the European e-Competence Framework.
- **Attracting young people to ICT: awareness rising.** In this area a need to bring greater visibility to ICT education, training, jobs and careers is addressed. EC outlines need for better information between students, young professionals and SMEs about the range of opportunities that ICT-related jobs.
- **Attracting young people to ICT: innovative teaching and learning.** EC looks towards more aligned educational schemes as well as structural changes inside the educational sys-

tems in order to facilitate appropriate skills and competences development.

2. Partially distributed teams project

Economics and management faculty of Kaunas university of technology (KTU) joined Partially Distributed Team (PDT) project since 2008. The PDT project was coordinated by University of Pennsylvania. In 2012 eight universities were involved in the project from seven countries – Germany, India, USA, Singapore, Spain, Portugal and Lithuania.

Undergraduate students of Management study program from KTU initially were involved in the project. Since 2012 undergraduate students from various programs (such as Marketing, Finance, and Accounting) took part in PDT.

Information technology teams are often *partially distributed teams* (PDTs), consisting of two or more subteams that are separated geographically. While members of a given subteam are co-located, they collaborate remotely with members of other subteams. PDTs are increasingly prevalent for information systems development, with off-shoring, outsourcing, and insourcing practices. Often a PDT spans multiple time zones and countries, as in the case of global software development (Ocker, others. 2009). Although this is typical for ICT project development, KTU motivation to join the project with students from management field was twofold:

- Such project needs to have end users who can bring approach was addition perspective on software development;
- To facilitate students work in interdisciplinary teams.

However this kind of educational practice demonstrates strong support for key areas indicated by EC in Grand coalition for digital jobs creation declaration and challenges brought by ICT:

- It tackles *mobility* perspective, giving opportunity for students to work with different culture and different field team, learning from *cross cultural* and *interdisciplinary* perspective;
- It builds experience from *virtualization* perspective – the teams need to complete task virtually, to take decisions virtually and find solutions virtually. It allows distribution of tasks matching to the skills each team member is incorporating.
- Teams are encouraged to use various ICT based tools (Skype, Messengers, Wiki or other web 2.0/social media tools for communication and cooperation) and Moodle environment for *enchanting learning and study process*.

At the beginning of project students are assigned to teams and should establish connection with other teams they are going to cooperate for the whole project duration. In 2012 students had to present proposals for the design of an information system to be used to plan for and protect its citizens against radiological threats. The project runs for 4 week and each week students' needs to complete an assignment. During 4 weeks students are mainly involved in teaming as well as analysis & design activities:

- The first week is dedicated to team introduction, scenarios development, contract between subteams drafting and finalization.
- The second week is dedicated high level functional requirements definition and user interface design.
- The third week is dedicated to review of other subteam work and design output screen preparation.
- The fourth week is dedicated to input screen preparation.
- The fifth week is dedicated to complete project proposal and proposal results presentation.

Usually students face following barriers during PDT project:

- Coordinating work across time zones;
- Different cultural norms;
- Language barriers;
- Establishing trust;
- Maintaining awareness;
- Creating a shared team identity;

Students were encouraged to present reflections every week after completion of assignments. The focus group research was performed after the project implementation getting students' feedback on various issues during project implementation.

The results of focus groups might be summarized as following:

- Most of students agree that participation in PDT project was a challenging and innovative approach in studies practices. It was emphasized that participation was the only case during the whole educational process.
- The most positive impression of PDT project was provided by teams which were formed voluntary. In other cases when team was formed by tutors certain team working problems were identified.
- No big problems in coordinating activities across different time zone were identified; more problems were caused due to different study schedules in different countries. This lead to the situation when some subteams had more time for results preparation, other team had less time and this was reflected on the quality of the results.
- Cross-cultural differences were observed both in communication manner and in cooperation. This was reflected by less initiative, workload imbalance and different work styles.
- As main shortfall by the project was named lack of personal contact. This was caused by the situation that email

and text communication means were used during project implementation. Video and audio communication tools were not used actively which demonstrates some level of fear for direct communication with foreign subteams.

- The overall idea of PDT project was very positive, but higher acceptance and involvement of students might be achieved selecting topic more aligned with the studies. As information systems development topic is more appropriate for Management of Information Studies or Information Management Studies students, management and economics background students are tend to be more active in solving enterprise related problems.
- In most case teams failed to build team identity. This was not clearly expressed by project participants, but during the discussion naming of different subteams occurred very often. This also was reflected through post PDT project perspective – no students intended to keep contacts with other subteam after project completion.

3. Conclusions and further implications

The participation in PDT project was identified as positive experience by many students. Participation enabled them to get used to work in virtual teams, to face cultural differences working with other countries students as well managed work across different time zones.

Within this context project contributes to the new millennium required skills identified by EC initiative.

However despite the positive experience changes for upcoming project might

be considered – finding better balance between MIS and managerial thematic (such as including additional week considering market and users issues), strengthening cooperation between subteams through more active networking and shared results presentation, encourage students to use more audio and video communication tools for getting more benefits from the project.

4. References

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