

Teaching “Global Project Management” with Distributed Team Projects

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Abstract: The education of rising professionals must keep pace with changing forces of globalization and the realities of distributed work. Students who understand the basics of global project management, teamwork and collaboration are likely to find themselves at a competitive advantage over those who do not. This article describes the experiences in an undergraduate course called "Global Project Management" offered concurrently at two universities, one in the U.S. and one in Singapore, and incorporating collaborative student projects.

Introduction

Globalization and emerging patterns of work and collaborative development of products and intellectual services are important forces shaping the early years of the 21st century. Companies in the industrialized world are strongly affected by the globalization of markets, access to global labor forces, outsourcing of systems and services, and complex networks of design, development, manufacturing and distribution. They recognize the need to employ professionals who are able to operate effectively in flexible ways, on geographically distributed teams and transnational projects.

In an increasingly interconnected and interdependent global economy, organizations must adapt and individuals must acquire new skills to remain competitive. Participation in new and emerging opportunities, wherever and whenever they may present themselves, will require new and adaptable approaches to getting things done. Indeed, living and working as effective citizens in a global society will require learning with an international perspective.

Adapting to new and emerging patterns of work, collaboration and change is not particularly easy or comfortable. Rapid globalization and change challenge people affected by these forces and create new opportunities, demands and expectations for people preparing to enter the workforce. Koulopoulos and Roloff note in their book, *Driving Innovation and Growth through Outsourcing*: "...the mobility of work is propelling rates of disruption, discomfort, innovation, and opportunity for which it is difficult to find a historical comparison" (Koulopoulos & Roloff 2006).

In a highly interconnected global marketplace, the ability to effectively work on, and manage, distributed teams and distributed projects is an increasingly important and valued skill. In Information Technology (IT), for instance, a recent study notes an interesting paradox in the education of IT professionals. It found that a technical foundation is still important for entry-level IT workers (see Zweig, et al. 2006). However, as these individuals move into the workforce and gain responsibility, they are increasingly expected to manage relationships with colleagues, vendors, work partners and teammates, often in a global setting. Rising professionals must therefore develop management, communication and teamwork skills that transcend traditional academic disciplines, domain expertise and project management. They must also develop practical skills for managing projects and maintaining relationships across boundaries of organizations, time-zones, countries and cultures.

Colleges and universities face new and interesting challenges as they work to find ways to prepare students of rapid globalization and emerging new patterns of work. Graduates across all disciplines are increasingly likely to find themselves working on global development teams, with business partners, vendors and collaborators in diverse locations. To make these efforts work, students need education that goes beyond traditional "silo", or discipline oriented, structure of most undergraduate degree programs. No longer are luxuries in higher education, global awareness, global literacy, and collaborative skills increasingly seen as important enablers to successful participation in the global economy.

The need for research, education and training in global project management is important. While most major companies conduct global projects, many do not have effective, established practices or training to help project managers and team members work over a distance. Practitioners and rising professionals need a better understanding of what does and does not work, and why. And as the geographic scope of projects widen, students across many academic disciplines will need to understand the challenges and opportunities introduced by globally distributed business units, outsourcing, and cultural differences. Courses in global project management can help students increase awareness of the key issues needed to get things done on collaborative efforts with global scope. Damian, Hadwin, and Al-Ani (see Damian, Hadwin & Al-Ani 2006), discuss some of the key issues in instructional design and assessment strategies for teaching global software development.

Collaborative Global Project Management Courses

To introduce the art and practice of global project management to a diverse group of undergraduate students, two courses entitled "Global Project Management" were coordinated between a university in the U.S. and a university in Singapore during the spring semester of 2007. These courses were coordinated to provide students with a common set of learning objectives, exposure to best practices and an opportunity for hands-on collaboration. To allow for greater participation, a minimal set of prerequisites were required for admission to these courses. At the U.S. University, 2nd, 3rd or 4th year standing was required; at the Singapore University, students must have taken the software engineering course. While the courses were listed at both universities as Information Systems courses, a declared major in Information Systems was not required for registration.

The key common objectives for these courses were coordinated, defined and communicated to students as follows:

- To learn the basics of effective project management - including communication, coordination and control; to appreciate differences between co-located and global teams.
- To appreciate the importance of culture, language, decision making styles and leadership in international collaborations.
- To experience the practical and tactical issues involved in working collaboratively on a distributed, international team; to use appropriate computer mediated communications tools; to manage the ambiguity and uncertainty inherent in remote teamwork.
- To plan, define, and develop a real project of interest to real stakeholders and turn in a professionally polished, complete report of their findings.

In these courses, students were exposed to a common set of topics including project initiation, planning, and budgeting; project control, measurement and monitoring for performance and quality; building effective project teams; working with third parties, communicating and collaborating across political and cultural boundaries, and risk management. Students were assigned to international project teams with colleagues at the partner school. Between both universities, nine teams of students (3 or 4 members each) worked on three distinct projects (three teams assigned to work on each project independently). Each of these projects had real stakeholders and sponsors. Students needed to work with the project stakeholders throughout and use them for primary resource material.

The projects were intended to be engaging, of interest to everyone on both sides, reasonably bounded, but open-ended and requiring little prior domain knowledge.

Project 1: To plan an IT event and competition for pre-University students in Singapore. The purpose of the event is to attract the 'best and the brightest' students to pursue college degrees in IT. The assignment involved planning

logistics for the event, working out a budget and preparing a staffing plan and timeline. Students are able to interview the various organizers of this event for 2006.

Project 2: To recommend changes to the existing senior Information Systems project courses at both universities to incorporate global collaboration and common course objectives. The assignment involved reviewing existing course documents, revising the syllabus, recommending any modification and improving the experience of global projects. Students are able to interview stakeholders of prior global projects. These include the students who did the project and the professors who supervised them.

Project 3: To prepare a plan for rollout of an Information Systems undergraduate major program at a branch campus of the U.S. University in a third country. The plan includes a timeline, budget, a proposed curriculum and discussion of logistics. Students are able to interview the stakeholders in the third country.

Students were assessed based on the quality of their reports and project presentations. Each student also wrote peer evaluations and a reflective statement on the experience, commenting on teamwork, communications, and project management.

Course Preparation

Operational issues are vital to the success of distributed, coordinated coursework. Planning, organizing, coordinating and managing the course was a challenge for the course instructors. Schedules, learning and project objectives, assessment criteria and grading, communication tools and infrastructure, course deliverables had to be clearly defined and team problems anticipated. Before the course began, the instructors collaborated (using the same technologies available to the students) to create a set of basic course design documents. These documents served as a baseline and were later useful to help manage and communicate instructor and student expectations. The differences in academic calendars, holiday and break schedules, academic credits, and student prerequisites and demographics all added interesting constraints to the mix. Due to the short duration of the project, overlapping only 7 weeks, and with a wide variety of student backgrounds and skills, we focused on crafting projects that were not particularly challenging on the technical aspect, but that forced students to concentrate on the project management and the coordination and communications aspects of their work.

In addition to the structural issues, we prepared the students for the international communications needed to complete their work. We taught common basic distributed project management skills and work-flow techniques such as “follow the sun” work pattern and dividing up work by function. To reduce anticipated communication problems, we stressed the importance of good informal communication to build team spirit early in the project. Aside from managing expectations, the early preparation also proved helpful in motivating and keeping students excited about doing a global project with partners from a different country. Further, the students seemed to appreciate that their instructors were dealing with the same communications and collaboration issues they were experiencing.

With numerous communications, project management and collaboration tools available, we took a 'platform' neutral stance and recommended various tools, but required the use of none. As a means to get started, we took out subscriptions to *BASECAMP*¹ and *CAMPFIRE*², websites which facilitate team coordination, project management, document versioning and communication. The subscription was made available to every team member. While most teams used these tools, at least on occasion others found alternative tools. Students reported using a variety of tools, including occasional video conferencing, audio conferencing, web meetings, instant messaging, email, online project management suites, VoIP calls (skype and jajah.com), and Google Docs & Spreadsheets. While video conferencing was useful for early 'getting acquainted' meetings, the other online methods proved most useful for shorter synchronous and asynchronous communications, project management and coordination of work products.

¹ <http://www.basecampHQ.com/>

² <http://www.campfirenow.com/>

Feedback, Student Comments and Course Assessment

Both instructors found the course fun and enjoyable to teach. Late night, early morning, and frequent (and sometime, inconvenient) skype calls between instructors were necessary to work out details as problems appeared. With few exceptions, the students on both sides did high quality work on their projects and reported high levels of course satisfaction in both informal written comments, formal reflective statements, and in on-line university course evaluations. Students generally commented that the experience was positive, although several reported on communications and coordination glitches with their teammates and the technologies they used to keep in touch.

Some typical student comments:

“When it comes to global team projects when teams are geographically apart the same problems we face in a co-located project come into play. However, because of the distance, the time & cultural difference, etc. the problem is magnified.”

"I felt that this experience has really given me insight as to what it means to be part of a global team. It's amazing to actually have been given the opportunity to work with a group member on the other side of the world and be able to effectively collaborate and deliver a substantial final product. I sincerely hope that I will be given similar opportunities either in my career or in the remainder of my curriculum."

"Overall, I am very happy to have had the experience to work with people outside of my normal environment."

"In the area of communication one of the most important lessons learned was an improvement in my cultural intelligence. Working on a team with students from an Asian country helped me to learn more about other cultures from both a personal and academic level."

"As far as planning, one of the most important lessons learned was that we had to design assignments to take advantage of the time difference. We used a system where team members on both sides would complete a task during the day and leave it for the other team to review and correct, which they could do while the original team was sleeping. It worked out well."

"Not only have I learned to work internationally with people from different time zones but I successfully learned to convey my ideas through the Internet. However, I never thought that this project would be so different from my imagination."

"We have learnt that on paper, globally distributed project management sounds easier than it is in reality. As with most project management methodologies, we believe it would take us a bit more time and many more experiences to fully be able to attain the maximum output from working in a globally distributed team."

"After the lesson on cultural intelligence, I think it is very important to do some background 'research' to understand the culture and work ethos of your counterparts in a global team. For this project, that means reading up more about the partner university, the culture of their students, the differences between the students from different schools (i.e. CS, Humanities and Social Sciences, etc.) so that I can better prepare myself and 'speak their language.'"

“We ended on a high note with our own mini follow-the-sun scenario. After finishing our usual meeting at 2pm (Singapore), I tidied up my parts of the report and sent to CMU (3am EST). When it was morning at Pittsburgh, CMU edited their portion and sent out our final copy at 4pm EST, I was greeted by a completed report when I woke up for my morning class that day!”

From our course assessments, observations, and student feedback we gather a few main themes for improvement and direction:

1. Concentrate on course logistics. Instructors need to carefully manage different academic calendars, academic

credits awarded, class meeting schedules, grading and assessment expectations, creating and maintaining common student expectations and commitment.

2. Concentrate on team communications. Instructors need to provide effective means for student teams to “break the ice,” get acquainted and 'bond' early and to quickly become familiar with available technologies. Some students need encouragement to communicate with their partners informally and often, to take initiative, to get started early and to gain momentum, and to communicate their expectations clearly, recognizing and respecting cultural differences. A 10+ hours' time difference hinders synchronized communications; students need specific lessons on managing their time and communications to reduce 'down time' or lost time due to missed cycles.

3. Concentrate on project management and emphasize project management tools. In spite of the fact that these are courses in Project Management, students need reminders to apply the principles and practices to their own projects. Since we did not require intermediate work products and project plans, some students and teams fall back to the undisciplined, ad hoc methods typical of uncoached student projects. Students need to understand the connection between the project management lessons they study and the implementation of their team projects. While the instructors may suggest tools and good practice, a requirement for project plans, metrics and intermediate status reports might be useful.

4. Concentrate on personal factors: motivation, commitment, sense of shared responsibility and accountability.

5. Concentrate on accessibility and availability of clients and stakeholders. We learned that providing students with stakeholders' contact information (even when the stakeholders had been briefed and engaged in advance) does not necessarily mean the students will follow through and establish contact. Being more proactive and arranging early client and stakeholder communications is essential to gaining early momentum. Further, students at both institutions need to have equal access to primary stakeholders, clients and source materials.

6. Concentrate on sourcing projects that are of wide appeal and interest. Projects need to be interesting and engaging to everyone on a team. While we tried to arrange projects with interesting project management aspects and live clients, projects that are local potentially create 'home court' advantages for some team members and disincentives for others.

Conclusion

With the world of work changing so rapidly, we expect more students to enroll in project and project management courses allowing international collaboration. Such “real world” experience at the undergraduate level will undoubtedly benefit students in ways that we cannot yet measure. Through these guided hands-on experiences, students will learn more, retain more and develop a deeper appreciation for the challenges and opportunities facing them upon graduation.

As the faculty gain more experience, we expect the international collaborations between our universities to be richer and deeper. We therefore expect these early student project collaborations to be the first of many between these universities and others who may wish to work with us in the future.

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