

AC 2007-1113: CRAFTING AN INTERNATIONAL ROAD MAP TO GLOBAL LEARNING AND PROJECT MANAGEMENT

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Crafting an International Road Map to Global Learning and Project Management

Projects do not fail from a lack of reports, data sheets, graphs, or statistics; they fail due to a lack of effective communication and coordination. Whether the work is local and small in scope or large and coordinated over several continents, information access influences a team's productivity and performance.

The coordination of international engineering distance learning and research project management is inherently complicated. The need for simple to use, easily accessible tools to assist with distance learning communication, research project management, and process tracking is rapidly growing. These tools can help to control local and international relationships between professors and students, research leads and associates, industry project managers and development team members and headquarters and satellite offices.

In this paper, we are proposing new techniques in utilizing off-the-shelf software to effectively provide project stakeholders with a common road map to ensure consistent delivery of information and data tracking via the web.

Introduction

In order to effectively respond to the diverse challenges of rapid globalization in both industry and higher level education, effective management tools and techniques are required to balance the needs for information access, resource synchronization and task execution. The process of managing the complex and often times disparate elements within a project must be optimized in order to provide stakeholders with the most desirable outcomes.

Project management methodologies, regardless how good, are simply pieces of paper¹, unless there is a culture to experiment, accept, and use project management tools.

The project management tools and techniques discussed in this paper are applicable for project coordination efforts for both industry and academic projects such as distance learning course delivery.

Sample techniques used in industry

In an effort to drive high performance and results while keeping costs down, outsourcing project development efforts is a growing trend throughout industry. At Harcourt Inc., a variety of techniques are used to manage software product development. These standardized tools and techniques are used for both small scale internally developed projects as well as large scale projects whose development is coordinated over multiple continents.

The use of Microsoft Project software partnered with a fully accessible project-dedicated web site provide a highly effective tool set that allows for the coordination and reporting of project tasks, timelines and resources.

Although there are multiple software programs available to track project schedules, the use of Microsoft Project software is a powerful management tool in that it allows for links to attach additional critical task information than what is listed in the project schedule, compare progress against baseline work and run a multitude of reports.

Once the base information is populated within a schedule template, this software allows any stakeholder to generate key information in a variety of different formats to meet their particular needs.

Posting schedules, project documents and software products throughout their development cycle to the web, benefits project stakeholders in a variety of ways. For team members who work in different time zones, using the internet as the project headquarters allows for asynchronistic communication providing all stakeholders access at any time. This maximizes productivity as posting updates, additions, risks or additional resources is not limited to any zone. This is critical when team members depend on each other's deliverables to execute their tasks and they work on separate continents. Additionally, team member's contributions to a product during its development cycle can be viewed at the same time by some or all of the stakeholders. This is particularly effective during product and process review cycles.

Delivering and managing distance learning courses

Undoubtedly distance learning is gaining popularity among non-traditional university students and also with those who are required to work in order to support their education. Most of Florida state universities are facing a shortage of classroom space due to a rapidly rising student population and budget cuts. One reasonable and viable option for this situation is to take the classroom to student via the internet.

Successfully delivering online courses to distance students can be managed much like a project by utilizing the same tools and techniques used by industry for product development. At the University of Central Florida, Engineering Technology Department, we have experimented with different models and techniques and have examined the results in order to improve our ability to effectively deliver courses to distance students.

Treating course delivery as a project, requiring careful analysis of tasks, timelines, resources and assessments, consistently delivers desirable results for both professors and students.

In this model we define delivering a course any series of activities and tasks that:

- Have a specific objective to be completed within certain specifications
- Have established desired outcomes that need to be achieved
- Have known start and end dates
- Have announced how outcome will be assessed

Course delivery project, on the other hand, involves project planning and project monitoring².

In order to utilize project management techniques in delivering courses we took the following steps:

1. Identify objectives and desired outcomes for every course.
2. List all topics that need to be covered within a course.
3. Consider each topic as a task and identify all activities that need to be completed such as lectures, posting assignments or projects.
4. Define all assignments or projects elements clearly such as research activities, deliverables, due dates, etc.
5. Assure communication if more than one student is involved in any project.
6. Facilitate a mechanism for student communication and exchange of information.
7. Identify a time line that clearly marks important dates such as exam dates, topics that need to be covered in a certain time period, deadlines for returning assignments, Monitoring student projects, etc.
8. Provide an interactive course website allowing students access to all recorded lectures, class notes, e-mail, access to grades, professor feedback and communication, a bulletin board, calendar, discussion and chat room for all involved in the course. (These sites can be created by using available commercial software or can be developed in-house. This site must be capable of providing real-time access to information and capable of accepting documents to be loaded by students.)
9. Identify appropriate evaluation methods. Ensure assessment of all tasks performed including identification of grading criteria. Require a peer review by project team members after each project as a part of the student's overall grade. (In one case, we identified 10 projects for a course and grading was based on the number of successful projects completed and submitted on time.)

If an online distance learning course is considered a project, then the professor assumes the role of project manager. In this role they need to:

- Define work requirements – what needs to be done in an assignment or a project
- Define the quality of work – determine baseline of acceptability
- Define the resources needed
- Track progress
- Compare actual outcome to expected outcome
- Make adjustments

A successful course delivery can be defined as having achieved the course objectives. This model creates a multi-dimensional learning environment that allows students not only to be involved in assimilating course content but also exposes them to tools and techniques used in a real-life work environments.

This model allows professors to monitor students' progress at any given time by checking the course web site to evaluate status of their team projects and every student's assigned task, and also to read team leaders weekly evaluation of their project status. In this site all students have the right to read, write, and post their part of work so all team members can review and provide feedback.

| Course Evaluation Form | | | | | | |
|------------------------|--|------------------------|--------------------|--|----------|--------------------|
| Course Number | | Course Instructor | | | A Grades | |
| | | | | | B Grades | |
| Course Name | | First Time Instructor? | | | C Grades | |
| | | | | | D Grades | |
| Semester /Yr | | Course Coordinator | | | F Grades | |
| Course Outcomes | | | Assessment Process | | Measures | Assessment Results |
| CO1 | | | | | | |
| CO2 | | | | | | |
| CO3 | | | | | | |
| CO4 | | | | | | |
| CO5 | | | | | | |
| CO6 | | | | | | |
| Comment Section | | | | | | |
| | | | | | | |

In order to evaluate the success of this course delivery method, a number of surveys were given towards the end of the each term. One of the course evaluation form that is currently used shown above.

Among all distance learning students, the methodology of teaching was highly regarded and students were satisfied with their learning experience. Among live class students, there was an equal split in preference between face-to-face lectures and online lectures, with the majority of students showing no preference. While all students approved of the other aspects of online delivery including flexibility, the capability of easy access to other students via the course website, 24/7 access to course materials and the capability of multiple lecture review.

Conclusion

Project management tools and techniques are critical in assuring the successful execution of tasks associated with a project. While these discussed techniques are currently used widely in industry, the innovative application to use them for online course delivery requires further research. Although student surveys show that online lectures provided in distance learning courses need enhancement, initial results of applying project management tools and techniques for the delivery of engineering courses has proved promising.

References

- [1] Harold Kerzner, Project Management, Case Studies, 2nd.Edition, John Wiley & Sons, Inc. 2006, pp 153.
- [2] Harold Kerzner, Project Management, A systems Approach to planning, Scheduling, and Controlling, 6th.Edition, Van Nostrand Reinhlod, 1998, pp 2