

A Structure for Project Management and Collaboration in a Higher Education IT Organization

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ABSTRACT

The University of Pittsburgh is a five-campus Research I institution, with more than 12 schools and interdisciplinary programs. The student population is provided with a robust networking environment and numerous services that support their academic pursuits. In addition to public computing devices (more than 1800 seats) and residential network attachments (6,000 Ethernet ports), the Microsoft Campus Software Program provides every student with a high-quality selection of software. On-line courses and course material are abundant, with nearly 1000 courses available through the CourseInfo environment. With 32,000 students, more than 2,500 faculty and 5,500 staff, the total number of Network Authorization Accounts exceeds 50,000.

Computing Services and Systems Development (CSSD), with a staff of 150 professional and 100 part-time students, provides support in five functional areas: Administrative Applications, Development Services, Help Desk, Resource Services and Support Solutions. A sixth functional area is the Project Management Group (PMG). The PMG has two individuals assigned to the area full-time (one technical, one management). The PMG has eight other members from the five abovementioned functional areas permanently assigned to the team.

The PMG is designed to function horizontally across the CSSD organizational structure, providing guidance and coordination for all project activities. When a project is proposed to CSSD, a meeting is convened by the PMG to review the goals, scope, schedule, and develop a project plan. A project team is formed with representatives from the appropriate areas, and a project plan takes shape.

The PMG has responsibility for monitoring activities and

coordinating with the various teams throughout the duration of a project. The PMG is designed to provide models for project planning and mentoring to staff who are new to project management.

The presenter will describe the CSSD organizational structure and detail the extent to which the PMG has fostered organizational communications, cooperation and training.

Keywords

project management, organizational structure, project acceptance process

1. OVERVIEW OF UNIVERSITY'S IT ENVIRONMENT

The University of Pittsburgh is a five-campus Research I institution, with more than 12 schools and interdisciplinary programs. The student population is provided with a robust networking environment and numerous services that support their academic pursuits. In addition to public computing devices (more than 1800 seats) and residential network attachments (6,000 Ethernet ports), the Microsoft Campus Software Program provides every student with software including Office 2000 for Windows, Office 98 for Macintosh, FrontPage 2000 for Windows, Visual Studio 6.0 including Visual Basic, C++, FoxPro and J++. On-line courses and course material are well established, with nearly 1000 courses available through the CourseInfo environment. The University Library System has implemented the Endeavor Voyager solution for library management, providing continuous access to electronic journals, databases and other library resources. The University's administrative computing environment is Oracle based, with the Financials segment in place since 1997 and implementation of the HR component scheduled for late 2000. Student information and registration systems are from SCT (ISIS). With 32,000 students, more than 2,500 faculty and 5,500 staff, the total number of Network Authorization Accounts exceeds 50,000.

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2. Organizational History

For most of the past 20 years the University of Pittsburgh's IT technical and support staff was contained in one organization, reporting to the Vice Chancellor for Business and Finance. In the late 1990's the organization's reporting structure was moved under the Provost in order to better align with the academic and research mission of the University. The central IT organization remained one unit which included network services, telecommunication, support services, administrative computing and academic computing. In the spring of 1999 the unit was further reorganized into two separate departments, Computing Services and Systems Development (CSSD) and Network Services (NS), each with its own director reporting to the Provost. Computing Services and Systems Development completed the final stage of reorganization at the end of 1999, and on January 1, 2000 Project Management had become a new functional unit with CSSD (Figure 1).

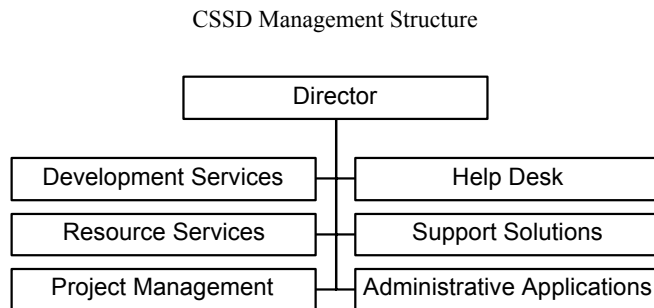


Figure 1

3. Historic Use of Project Management

Project management was used very sporadically throughout the former organization. Some areas had never attempted to apply the techniques or tools that are common to basic project management practice. Large administrative computing projects had project plans, but the documents were not always used for resource planning. Very few infrastructure and telecommunication activities required project planning or forecasting. The support service area generally did not use project planning as a part of its normal routine. The new Director of CSSD had previously managed the support services area and realized that the magnitude of the activities in the new unit would require comprehensive project planning and coordination throughout the new organization and also with the Network Services group.

4. Charge of the Project Management Group

The purpose of the Project Management Group is to coordinate all project activities within Computing Services and Systems Development (CSSD). For any project undertaken by CSSD, a meeting will be convened by the Project Management Group to review the project goals, scope and timeframe. A project team will then be formed with representatives from the appropriate areas, and a project plan will be developed. The Project

Management Group will have responsibility for monitoring project activities and coordinating with the various project teams.

The Project Management Group is not structured vertically—members of the group do not report to the two group leaders. Project Management Group members are appointed by the Director and work in a collaborative fashion across organizational lines. Functional areas and sub-areas represented on the Project Management Group include Development, Help Desk, Training, Database Administration, Server Administration, Resource Services, Student Systems and Administrative Projects. The Project Management Group leaders also have primary responsibility for coordinating and communicating with the Network Services group and advocating on behalf of any CSSD project leader. The Project Management Group leaders are expected by design to work horizontally across the CSSD organization and to a certain extent across the Network Services organization. One additional function of the Project Management Group is that of communication and dissemination of information regarding proposed and ongoing projects. Team members are expected and encouraged to share information with their co-workers and colleagues who are not members of the Project Management Group.

5. Early activities of the Group

The early activities of the Project Management Group focused on developing a template for documents and materials used to propose and track projects. The team employs a combination of MS Word, Project and PowerPoint to develop a concept and build a rationale for a particular project.

It became very clear early on that CSSD needed to perform an inventory of all ongoing and proposed projects. A Project Questionnaire was developed and sent to all CSSD managers and supervisors (see below). The results were analyzed and a prioritization was developed.

Project Questionnaire

1. Project name (RFS number, if appropriate):
2. How did the project originate (requesting department or person)?
3. Does a detailed project plan exist?
4. Is the project for internal or external users (name the departments or individuals)?
5. Is the project dependent on external groups or departments (percentage)?
6. Is the project dependent on Network Services (percentage)?
7. Is the project dependent on CIDDE (percentage)?
8. Project start date:
9. Projected completion date:
10. Anticipated duration:
11. Briefly describe the project's impact - students, faculty or staff:

12. Number of staff involved on the project (approximate hours per week/month, FTEs):
13. Does the project have a budget?
14. Operating budget impact of the project?
15. Capital budget impact of the project?
16. Are sufficient human resources devoted to the project? Elaborate if necessary.
17. Are sufficient operating (non-salary) resources devoted to the project? Elaborate if necessary
18. Is the project on schedule? What percentage complete?
19. Is the project on budget?
20. Is there a training component to the project?
21. Is there a documentation component to the project?
22. Is there a contract negotiation or software license component to the project?
23. Are there SLAs required for the project?
24. Are there any other features of the project that should be noted?

During the development of templates it became clear the Project Management Group needed to devise a project acceptance process that would help provide a basis for expectations and establish the path that proposed projects would take as they moved through the CSSD organization. The Project Acceptance Process is outlined below:

Project Acceptance Process (See Figure 2)

1. All Concepts for CSSD projects should move through the established CSSD organizational structure and be presented to the CSSD Director in the form of a proposal or executive summary that addresses the following items:
 - a. Project name
 - b. Project origination (requesting department or person)
 - c. Project goals and objectives
 - d. Project's impact on students, faculty or staff
 - e. Project dependency on external groups or departments
 - f. Estimate of the Project non-salary budget requirements
 - g. Identify any risks that the project might encounter or create.
 - h. Identify contingencies that might need to be deployed.
 - i. Identify any Change Management justifications for the project
 - j. Outline the project tasks
2. If the concept is routine and does not require a project plan, the activity can be assigned to normal CSSD workflow. If the concept is determined to be of sufficient scope to require a project plan and a project team, it will move to the next

step. The Project Leader will be identified early in the process.

3. If a project receives endorsement from the CSSD Director, the originator (or Project Leader) will present the concept to the Project Management Group.
4. CSSD projects presented to the Project Management Group will use the following framework:
 - a. All items from the Project Questionnaire must be addressed (attached)
 - b. A detailed project plan will be developed using MS Project
 - i. Any task with a duration exceeding five days must be broken into sub-tasks.
 - ii. A minimum of 10% of the total time planned for a major task group must be devoted to documentation .
 - iii. Training must be incorporated into the plan and identified.
 - c. The project plan will use seven major tasks headings:
 - i) Architecture Plan and Design Specifications
 - ii) Identification of Resources
 - iii) Development Phase
 - iv) Testing Phase
 - v) Implementation Phase
 - vi) Post Project Analysis and Reporting
 - vii) Follow-up Phase (30, 60 or 90 day)
5. The Project Management Group will review the MS Project plan. The Project Management Group may request additional information, a finer level of detail in the project plan or make a recommendation to the CSSD Director.
6. The CSSD Director will provide final approval, rejection or modification to the proposal.
7. When a project plan has received approval from the CSSD Director, the following guidelines take precedence:
 - a. The Project Management Group will work in concert with the appropriate CSSD area manager to select a project leader and a project team.
 - b. The project leader will be responsible for reporting to the Project Management Group on a regular basis (to be established when the project commences). The project leader will also be required to post and update documents on the Exchange server under "CSSD Projects".
 - c. The project leader will present a final report to the Project Management Group at the conclusion of the project

6. Project Management Training and External Consultants

Several months after the formation of the Project Management Group, the issue of project management training was discussed by members of the group. The group consensus was that a large scale training initiative could help to jump-start the process of departmental acceptance and consciousness raising. One of the Project Management Group leaders began to explore options for project management training and to seek input from peers at other higher educational institutions. A consulting firm was recommended by a higher education CIO who had very positive experiences during a five-year enterprise implementation. The company was contacted and one of the PM group leaders enrolled in a one-day workshop to assess the program. The company and the training program were deemed to be a good fit for CSSD and the process of selecting and scheduling dates commenced. The training consists of two phases, project management concepts and hands-on training with the MS Project application.

7. Conclusions

Computing Services and Systems Development has spent nearly eight months implementing a strategy for managing projects across the organization. Training is still ongoing, but initial indicators support the notion that a systematic approach to managing activities whether large or small has a tremendous impact on the success of the effort. The increased communication alone is quite valuable. The process of Project Acceptance has helped foster improved planning and justification for IT development activities. The Project Management Group has worked to develop a central source of information and status of project activity. The establishment of a Project Management Group as a functional unit within CSSD has given credibility and has created value for planning, communication and collaboration.

Figure 2 Project Acceptance Flow Diagram

