Nurturing Project Management in Higher Education IT

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Imagine that you are about to spend millions of dollars and invest hundreds or thousands of staff hours over a period of 18–24 months to replace your institution’s administrative computing systems with up-to-date applications. After years of research and due diligence, your institution has realized the strategic importance of this upgrade and has decided to move forward to install the full suite of new systems at once to minimize campus disruption. You’ve spoken to your peers at similar institutions to see what they are doing. You’ve spent months identifying requirements, locating vendors and consortia whose products appear to meet your needs, and investigating their organizations’ stability and support. Now you’re ready to move forward. Although your vendor has offered to supply a project manager for the work, you feel that’s a bit like asking a fox to guard your henhouse.

You’ve decided to bring in a consultant to help train your staff to manage the project. During the first day of the three-day training, the consultant talks about the importance of a project management process or methodology. She talks about work breakdown structures, project plans and schedules, PERT and Gantt charts, and earned value calculations. The tension in the room is almost palpable; the looks of confusion begin to spread across the faces of the attendees. At the first break, people rush out to use their cell phones and laptops to convey a single message back to their respective offices. The message? “We’re going to fail!”

As we know, some information technology (IT) projects are massive, expensive, and drawn out. They can be enterprise-wide, involving departments and schools from across the institution. After receiving institutional approval, these large projects require that staff work, budgets, timelines, deliverables, communications, and reporting be effectively and efficiently managed to successful completion. Like a seasoned orchestra conductor or film director, the project manager must ensure that for the duration of the project (which can be weeks, months, or even years), each project participant understands the program, knows the score, is motivated to work, participates effectively in scheduled activities, plays well with others, follows directions, is willing to share the spotlight, performs brilliantly, and delivers flawlessly on time and within budget. In addition, the project manager must monitor progress toward milestones, report to the project sponsors, revise strategies in response to adjusted goals, manage the budget, coordinate the resources allocated to the project, manage internal and external relationships that impact the project, respond to ever-changing technology, security, and service requirements, and keep everyone smiling. No sweat—piece o’ cake.

Recognizing that large IT projects carry high stakes for our colleges and universities, institutional leaders have been investing in professionalizing the management of these projects. Sometimes, project managers are obtained through contract services; sometimes they are members of the staff or faculty. Some project managers are
certified, while others are not. Some report within the IT organizational units; some report through a project management office (PMO) either within or outside of IT; some report elsewhere. To date, there appear to be no universally accepted project management structures within higher education.

This research bulletin provides an overview of PMOs in higher education in terms of the motivation for establishing one, the problems they are designed to solve, their organizational structure and services, where they report, and lessons learned from the experiences of five institutions of higher education: Carnegie Mellon University, Cornell University, Massachusetts Institute of Technology, Princeton University, and Syracuse University.

**Highlights of Project Management Offices**

According to Larry Bossidy, chairman and former CEO of Honeywell, and Ram Charan, noted author and business strategist, “Strategies most often fail because they aren’t executed well.” PMOs are designed to help organizations execute the work associated with their projects. The PMO assists with the early work of initiating a project, the ongoing planning of project work, the control and management of tasks, and the project closure and knowledge capture. It helps get projects done.

Like many colleges and universities, Syracuse University uses a shared governance approach to decisions about IT services. The Information Technology and Services division (ITS), led by the VP/CIO, is the centralized IT unit that strategically partners with IT units across the university’s schools, colleges, and administrative units to get things done. To coordinate and manage the work of its large IT projects, in late 2005 Syracuse decided to establish a PMO. A small, focused group developed the overall approach that would be used to identify the PMO services and describe the processes by which the office would serve the institution and communicate project information to the campus.

The group reviewed the project management literature and identified key references on related topics. Individual group members read and reviewed the references and conducted meetings on their findings. Other members met with skilled project managers in a number of organizations within and outside of higher education to discuss the specifics of their organizations and to ask for advice. All this information served as input for a strategic plan that resulted in the identification of the PMO services that would be provided to campus and a five-year plan during which these services would be rolled out and incrementally improved.

In an effort to continuously refine the PMO services, additional research was conducted by interviewing leaders of other PMOs in higher education to learn how their institutions had approached project management, what they had decided to do, and what insights they would share with others. Instead of surveying the broad higher education community, the author of this bulletin identified individuals with whom he had a good working relationship and conducted a series of interviews and subsequent correspondence on the topic. The following individuals were gracious enough to be interviewed:
Interviewees were asked questions in order to ascertain the reasons their institutions had established PMOs, where the PMOs report, which services the PMOs provide and to whom, and what the institutions have learned from the experience. The following sections report on the findings from these discussions and include a comparison of PMOs across institutions.

**Why Establish a Project Management Office?**

While the specifics of PMOs vary by institution, one of the interesting observations is that PMOs in higher education seem to share many characteristics with PMOs in both government and the corporate world. The Project Management Institute (PMI), perhaps the most well-known international project management organization, defines a PMO as:

> ...an organizational body or entity assigned various responsibilities related to the centralized and coordinated management of those projects under its domain. The responsibilities of a PMO can range from providing project management support functions to actually being responsible for the direct management of a project.²

The PMO provides services such as defining and maintaining project management standards; standardizing practices across projects; sourcing project documentation; and supplying overall guidance to the institution about metrics related to project management. Another way of defining a PMO is that its goal is “to support the organization’s mission, vision, values, and strategic initiatives through the effective implementation of the ‘right projects.’”³

Successfully implementing a PMO begins with a clear understanding of, and agreement about, exactly what problems you are trying to solve. Although a PMO is not the silver bullet to which all ills of higher education are vulnerable, a carefully conceived and implemented PMO will address some of the institution’s important challenges. Each individual interviewed for this research bulletin carefully identified what problems they sought to address by starting such an office so they could determine whether a PMO was, in fact, the proper strategy. Their motivations and problems to be addressed varied:

- “In 1996, Princeton embarked on a strategic plan to replace its central administrative information systems. This became a highly visible, multi-million dollar initiative that involved basically all the functional areas at the university as well as our IT organization. It was also recognized at that time that we didn’t have the project management expertise or background experience for handling
such highly interdependent, cross functional projects that were part of this strategic initiative. This was the impetus for establishing a project office.\textsuperscript{4}

- “At MIT, we had more projects that spanned the institute and required client involvement, and resources were constrained. These factors caused the control and management of the various project initiatives to become more difficult than in the past. When I started, my boss wanted to develop and produce a document to describe a framework that project managers could begin using immediately to improve the probability of project success. The catch: we were limited to eight pages.”\textsuperscript{5}

Some institutions, like Princeton, were at the beginning of huge IT initiatives and didn’t feel certain about their success. Some wanted to overcome cultures they described as resistant to planning and project management. Two organizations wanted to develop internal project management expertise to avoid the expense of hiring external consulting firms and to facilitate the ability of project managers to work with many areas across the institution.

With a clear understanding of whether or not a PMO will solve some set of an organization’s problems, the next piece of the puzzle is gaining agreement about that understanding. Does a critical mass of the institution agree the selected problems are, in fact, problems? And, are these problems considered to be important enough to address? If the answer to either question is no, carefully consider whether or not to proceed. Perhaps now is not the correct time, or perhaps there are other organizational problems that must be addressed first.

Often a burning issue such as an institutional accreditation evaluation can create the level of urgency and motivation that will help drive success. An institution embarking on an enormous, expensive, multifaceted project may be ready for formalized project management. Having such an incentive may reduce the time it takes to implement a PMO, and it may result in more quickly influencing the culture.

Once an institution decides there are certain problems that need to be solved and that some project management rigor is the way to solve them, goals can be identified. Obviously, specific goals depend on exactly which problem is being addressed. They may include:

- Delivering a project management methodology to campus
- Training the entire IT organization in project management fundamentals
- Providing project managers for selected projects
- Facilitating project planning for identified projects
- Conducting reviews of ongoing projects
- Coaching or mentoring specific project managers
- Developing a series of project management training programs
Regardless of the specific goals initially imagined, each of the interviewees suggested that the most effective approach is to start with a few clearly defined and thoroughly vetted targets and modify them as the effort proceeds and campus acceptance increases.

**Where Does the PMO Report?**

Two factors are of critical importance when planning to establish a PMO: perspective and perception. Where a PMO sits in an organization will influence where it stands on certain issues. Does it report to the CIO, or does it report to a specific service area within or outside of IT? PMO organizational position and reporting will influence, although hopefully not determine, which factors come into play when working to accomplish the PMO’s goals.

PMO placement will also be, at least initially, a strong factor in where people outside the PMO believe the PMO’s allegiances lie. Because projects in which the PMO will most likely become involved include people from across IT and the institution, perception of objectivity will influence how willing people are to be engaged with the PMO and its services.

A number of considerations relevant to organizational placement and reporting are good to examine in planning for a PMO:

- What problems are we trying to solve, and what parts of the organization do these affect?
- Who is most affected by the initial goals of the PMO?
- Who is the executive sponsor for this initiative? Who will champion its efforts?
- What services will the PMO provide, and to whom will these services be available?

PMO placement must meet the needs of the institution and the IT organization, but just as important, it must fit into the overall institutional culture (even if it is seeking to modify that culture). At MIT,

> The way we’ve established our Project Services Organization, the project managers don’t report to a central location, but rather to different functional areas of our central IT group. Given the nature of our organization, this model makes perfect sense for us.6

At Cornell, however,

> The PMO has become the “homeroom” for six project managers. It began with no staff; it was strictly a consulting practice. Then we decided we needed a "neutral zone" where project managers could report. By having them report to the PMO, which reports to the vice president’s office, it helped position them as neutral and objective. This, by itself, has value.7
Perspective and perception. Whatever organizational position and reporting are selected, credibility is key. Whether that credibility is derived from objectivity/neutrality or specific organizational engagement depends largely on the culture of the institution within which the PMO will reside.

What Services Does a PMO Provide, and to Whom?

Three factors must be considered when determining what services a PMO will provide to the institution: institutional and IT needs; clients to be served; and resources to be devoted to meeting these needs. Certain needs will readily translate into service offerings. For instance, a history of failing to deliver projects within the triple constraint of time, budget, and scope/quality as a result of inconsistent project management could be addressed by providing the development, maintenance, and evolution of an organizational methodology or approach to project management. Other services may result from careful research of existing project management literature, conversations with individuals at peer institutions, and/or brainstorming possible offerings.

Whom should the PMO serve? Some offices start out serving a clearly defined segment of their overall institution. Often this is the central IT group and the projects IT either “owns” or those in which it is a major player. Because the nature and cost of installing and maintaining IT mean that IT is involved in many projects, PMOs frequently start off within central IT organizations. Based on the research conducted here, project management success, regardless of the initial range of clients, leads to an increasing number of requests from an ever-broadening institutional audience.

What investment are you willing to make in a PMO? Services that can be provided by a single individual will differ markedly from those that might be provided by 20 people. A single highly respected individual with exceptional credibility and project management expertise may be effective at training others in project management fundamentals. But if there are five large IT projects that have immediate need for project managers, more than one individual will be required. And, if there are a significant number of organizational needs that you were planning to meet with a small number of resources, consideration will have to be given to determining the criticality of each need or increasing the amount of project management investment.

The PMO services resulting from the interaction between organizational need and the application of institutional resources appear almost as varied as the organizations to which the services are provided. In addition, some of the services provided by PMO-type organizations drift beyond what might theoretically be classified as project management services. The research participants identified the following services:

- **Project management**: Providing skilled project managers to manage specifically identified or selected projects. Some institutions identified project managers who would only manage projects in specific organizational areas. Others have project managers who move from project to project, regardless of organizational areas and boundaries.
- **Methodology:** Develop or purchase, maintain, and evolve an approach to managing projects for the organization. This methodology usually includes an overall framework or set of related processes and some additional guidance in the form of templates, questions, and/or more advanced tools.

- **Training:** Provide training about project management. The topics for training ranged from fundamentals of project management to using a project management methodology; using templates, questions, and other guiding tools; and special-topic “lunch and learn” sessions.

- **Facilitation:** Assist in any phase of project management, from planning meetings and early work to ongoing reviews of project progress and conducting lessons-learned sessions to provide benefit to future projects.

- **Mentoring/coaching:** This assistance to individuals given project management responsibility—or groups of individuals who made up a project team—ran the gamut from being available to answer questions and help the individual or team to carefully crafted developmental assignments with regularly scheduled meetings, to clearly identified objectives and assessment of success or failure.

- **Project information repository:** Some PMOs were responsible for developing, maintaining, and encouraging the use of a store of information about each project.

- **Process improvement:** Often provided for projects it manages, this service may include analysis, redesign, mapping, and other approaches to enhance the effectiveness and efficiency of institutional processes. Many, if not most, process improvement efforts are carried out using project management techniques to do the work.

- **Portfolio management:** A number of the institutions were involved with management of the projects that compose the portfolio of projects in which their organizations were engaged. The service included developing an overall schedule of projects proposed or planned for a period of time, helping an organization determine which projects would be undertaken and when, and identifying areas for senior-level examination and discussion throughout the life cycle of projects being managed.

Although each institution’s PMO provided different services based on the problem(s) it was designed to solve, on its clientele, on its position and reporting line, and on its resources, each PMO provided some form of three of the above-mentioned services (project management approach or methodology, some type of training about project management, and mentoring or coaching for individuals and/or project teams). Whether or not the other services listed above were provided depended on the institution’s original and evolving goals, the institutional investment (in terms of both labor and non-labor dollars), and the institution’s level of project management maturity and culture.
How Do PMOs Compare across Institutions?

When Syracuse did the initial research and had conversations with project management experts, our initial feeling was that PMOs were as different as the organizations they were designed to serve. The interviews conducted for this ECAR research bulletin revealed a smaller set of differences among such offices. The areas of comparison and possibilities within those areas are displayed in Table 1.

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<tr>
<th>Area of Comparison</th>
<th>Possible Selections within the Area</th>
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<td>Problems the PMO was designed to</td>
<td>While not specifically defined as such, one way to classify a major problem each PMO was designed to address was to develop an organizational culture capable of managing projects that would allow them to deliver on time, within budget, and with expected results (that is, to meet the “triple constraints” of project management). Other problems included deciding which projects to work on, knowing the schedules and the dependencies across projects, slowing (or stopping) the migration of institutional dollars to external consulting organizations, and increasing the value and efficiency of internal staff who managed and/or worked on projects.</td>
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<td>solve or address</td>
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<td>Where the PMO reports</td>
<td>While all PMOs from the interview group were within the central IT group, differences did exist in whether the PMO reported to the CIO (or equivalent) or lower in the organization.</td>
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<td>What services the PMO provides</td>
<td>While all PMOs agreed on the three areas of service noted above, only some provided individual project managers, facilitation, project management repositories, process improvement, or portfolio management services.</td>
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<td>What constituency the PMO serves</td>
<td>About half of the PMOs started providing their services only within the central IT area. (NOTE: All PMOs have since expanded their scope beyond those boundaries.)</td>
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<td>How many people are part of the PMO</td>
<td>The number of staff ranges from 1 to about 20. This number depended on whether respondents included only direct, solid-line reports within the actual PMO or also included virtual or dotted-line reports (see placement below).</td>
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<td>Placement or reporting of PMO staff</td>
<td>Most, but not all, of the PMOs began with their staff reporting into the PMO itself. Over time, many of the PMOs have placed (or are presently experimenting with placing) PMO staff within other areas of their IT organizations. Some of these are permanent placements, and others are extended but rotating assignments. Of those that have placed individuals outside the PMO, most also maintain an informal or formal reporting relationship between the individual and the PMO.</td>
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<td>Qualifications for PMO staff</td>
<td>Initially, many of the PMOs required some portion of the staff to have PMP (Project Management Professional) certification from PMI. Over time, all the organizations have made this a nice-to-have but not required qualification for the staff. Steve Winig of MIT said, “My personal experience is, I have not seen a correlation, either positive or negative, between the quality of a PM and their having certification. The people we hire have extensive, real-world experience managing projects, working with customers, and using different methodologies for managing projects. Additionally, they are senior enough to consult and mentor other project managers across the organization as needed.”</td>
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<td>How long it took to put the PMO in place</td>
<td>The range mentioned was from six months to several years. While this range was dependent on the originally defined goals and number of people involved, a factor more greatly influencing the answers had to do with how success was measured. The longer times were for those organizations whose initial goals were more numerous or complex and, especially, those whose goals had to do with changing organizational culture.</td>
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<td>Ownership of projects the PMO</td>
<td>While over half of the early projects the PMOs were involved with were owned by their central IT organizations, the others had functional or project-specific ownership. All PMOs now identify a specific individual (usually referred to as the project sponsor) for each project.</td>
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What Have PMO Institutions Learned?

Each individual interviewed had thoughts to share about their institution’s PMO experience. Combined, the lessons learned provide a path of steps to take, as illustrated in Figure 1.

**Figure 1. Steps to Establish a Project Management Office**

1. Clearly define what you want to accomplish with a PMO.

2. Carefully and thoroughly generate a critical mass of support.

3. Determine the services required.
   - A project management methodology
   - Project management training
   - Project management coaching/mentoring

4. Develop a plan to establish the PMO. Use your methodology.

5. Regularly reexamine PMO effectiveness.

- Identify organizational issues/problems and dream big about solving them.
- Executive support is critical, as are champions and supporters across the organization.
- Be sure the services concentrate on identified needs.
- Minimally, include these three services.
- Take your big dreams and start small by addressing immediate need and growing incrementally.
- Use these examinations to celebrate accomplishments, provide motivation to continue, consider lessons learned, and revise your plan.

Although the details and specifics will vary from institution to institution, these steps provide a minimum framework for success in starting a PMO.
PMOs are important in higher education because they can help an organization achieve its goals and objectives. PMOs enact the institutional governance decisions to help ensure alignment between institutional goals and costly IT projects; they create opportunities between the academic, business, and IT offices of a university; and they initiate, execute, control, measure, monitor, and communicate about project progress.

CIOs play a number of roles in the institution. One of the most critical is the management of the university’s IT portfolio. While that management begins with the choice of categories for investment and continues with the prioritization of possible opportunities and obligations for ongoing service maintenance, in some ways it “ends” with making sure the work either to take advantage of new opportunities or to maintain existing IT is done in a way that is maximally efficient and effective. Well designed, with carefully selected services, a PMO is a key tool to accomplish this.

When considering whether to implement a PMO, the interviewees all agreed with Mary Pretz-Lawson of Carnegie Mellon that “there are parts of what the corporate world has been doing that are applicable within higher education” and that “we can learn from the corporate world.”9 Higher education is beginning to adopt and adapt some of the best aspects of corporate culture. And when thinking about PMOs and what they can do, Hetty Baiz of Princeton nicely summed it up:

I think what a PMO does, if I were to boil it down to the simplest terms, is that it provides a way to put structure around the way we communicate on a project. And by putting that structure in place, it takes a lot of the questions and uncertainties out of the project. Things become transparent. It enables all the players to know what their roles are on the project and what the status of that project is. If there are issues that need corrective action taken, it allows that to happen in a timely way.10

Key Questions to Ask

- What is our present level of project management maturity? How often do we deliver our projects on time, within budget, and with expected results?
- What factors do we need to consider in determining if a PMO will serve the needs of our institution?
- What would we want the PMO to accomplish in the first three months of operation? First six months? First twelve months?
- What governance structure or organizational oversight would need to be in place to ensure the success of a PMO?
How will we effectively measure the success or failure of our PMO and modify our approach when appropriate?

Where to Learn More

- New York State Chief Information Officer, Office for Technology. [http://www.oft.state.ny.us/Policy/projectmanagementindex.htm](http://www.oft.state.ny.us/Policy/projectmanagementindex.htm).

Endnotes

6. Ibid.
About the Author

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