

Managing Large Projects

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SURVEY RESULTS

EXECUTIVE SUMMARY

Introduction

While much work performed by staff in academic libraries is ongoing in nature, project work that requires careful planning and management is increasingly prevalent. A project can be large or small but can generally be defined as a temporary organization of staff and other resources needed to produce a specific and pre-defined outcome within a given period of time.

Formal project management practices and techniques have a long history in the defense industry and the business world. However, their application in research libraries is more recent, having gained more attention as research libraries' budgets began to erode in the 1980s. ARL's Office of Leadership and Management Services created its first Library Project Management Institute in 1999 "to address the growing need for libraries to engage in outcomes-based planning, implementation, and evaluation." (See <http://www.arl.org/training/institutes/pmi.html>.)

This SPEC Kit is based on a survey of ARL member libraries that attempted to garner insights into the nature and prevalence of formal project management practices in contemporary research libraries. Following the data summary section are samples of project documentation submitted by respondents. A bibliography on project management is also included.

Background Information on Projects

This survey was distributed to the 123 ARL mem-

ber libraries in February 2005. Fifty-five libraries (45%) responded to the survey. Of those, all but five reported having undertaken at least one large-scale project since 1995. In fact, project management seems to be alive and well in research libraries with these 50 libraries reporting a total of 339 projects—an average of almost 7 projects each—with a total cost of over \$43.5 million.

As might be expected, the responding libraries reported a good deal of commonality in the projects undertaken: digitization projects (90%); physical moves of people and collections (88%); transfer of large quantities of materials to storage facilities (76%); implementation of a significant new service, such as electronic reserves (76%); implementing a new integrated library system (68%) or a particular module of such a system (46%); barcoding projects (44%); retrospective conversion (44%); development of institutional repositories (30%); large-scale preservation projects (24%); and construction or renovation projects (12%). Almost half of the respondents reported having undertaken other unique projects, such as processing a large collection backlog, a large-scale reclassification from Dewey to Library of Congress, the development of a catalog of video holdings, and an organizational assessment.

For the purposes of completing the current survey, respondents were asked to select one project and to answer all remaining questions in reference to that project. The top three project categories were implementation of a new integrated library system

(20%), physical moves of people and collections (18%), and transfers of large quantities of materials to storage (12%). These were followed by digitization projects (8%), implementation of a particular module of an integrated system (4%), retrospective conversion projects (4%), barcoding projects (2%), and implementations of a significant new service (2%). Fourteen respondents (29%) chose to describe other kinds of projects not covered by the categories above. Brief descriptions of all projects are reported in the responses to Question 3 of the survey in the following Survey Questions and Responses section. These give the interested reader an idea of the types, scope, and complexity of large-scale projects being undertaken in today's research libraries.

The primary driving factor for the largest percentage of projects (43%) was a top-down decision made by library administrators (middle managers or other staff initiated only 6% of the reported project proposals). User demand was a distant second at 10%. Other driving factors for undertaking projects were successful grant proposals (8%) and mandates from the parent institution (4%). Fourteen respondents cited "other" factors as being primary to their decisions to undertake certain projects; among these were the need to address deferred maintenance issues with library buildings, the obsolescence of an existing integrated library system (ILS), the need for more space to address collection growth, and, in one case, a large gift from a donor for a digital media laboratory.

Project Preparation

Thirty-six respondents (73%) reported having a formal project proposal. While the contents of project proposals varied somewhat, all but a few included the following important components: project definition and scope, project goals and objectives, a statement of resources needed, a timeline, a budget, expected outcomes, the tasks involved, and an implementation strategy. While 13 of the responding libraries (27%) actually conducted pilot projects—most for the purpose of testing processes and procedures—only six (17%) included this ele-

ment in their proposal. Roughly half of the formal proposals included strategies for reporting on and communicating about progress as well as an assessment component. About a third included contingency plans.

Since all of the libraries that responded to the question "Do you consider this project to have been a success?" answered in the affirmative, no statistical correlations between the lack of any of these components and the actual success of a project could be established. Nonetheless, these components are generally considered by most project management experts to be among the important ingredients of successful projects.

Achieving the buy-in of various stakeholders—those holding financial or operational interests in a project's outcome—is an essential component of good project management. Communication was the key strategy: 82% of the responding libraries periodically reported on project progress to achieve stakeholder buy-in, 76% involved stakeholders in project planning, 71% employed various information-sharing strategies, and 65% made presentations. A handful of respondents offered incentives for staff, such as T-shirts, celebrations to mark milestones, and prizes. During physical moves of collections, campus faculty were offered longer hours of access to collections, document delivery services, and an opportunity to have input on selecting materials to move to storage.

The length of a project's planning phase varied according to the type of project. Overall, however, 10% of respondents reported planning phases of less than one month, 33% from one to six months, 25% from six months to one year, and 31% of more than one year. Only one project—a staff space renovation—did not have a planning phase. The longest planning phases were reported for implementations of new ILS systems and physical moves of people and material.

The length of time for the reported projects' implementation phases followed a similar pattern with a slight increase in the number that took more than a year to complete. Again ILS projects and

moves took more time to implement, as did digitization and cataloging projects.

The majority of respondents (59%) reported that their projects completed the assessment phase within six months. Following their previous patterns, ILS projects and transfers to storage required longer assessment times.

Details of each project's planning, implementation, and assessment phases are provided in the responses to Question 7 in the following section.

Budgeting

Seventy-three percent of the projects were funded by a separate budget allocation. In the absence of a stand-alone budget, costs were most often covered by reallocating staff or other resources. Some building and moving expenses were paid for by the parent institution. In one case, software and hardware were donated as part of a codevelopment agreement with a vendor.

Library administrators developed the budget for 70% of the reported projects, followed by project managers (50%) and project staff (30%). Finance managers, architects, and campus facilities staffs were also involved in budget development. In only one case—a shared ILS system—did consortium staff help develop the budget.

The reporting libraries used a variety of sound budgeting techniques. The most commonly reported technique relied on vendor quotations for products and services (85% of respondents). Almost half of the respondents did in-house cost/time studies for the various components of the project. More than a quarter made cost/time estimates based on industry standards. Fifteen percent built in budgetary safety margins. Other projects based budgets on competitive bids and the expertise of staff and consultants.

Budget size ranged from a low of \$7,600 for planning and holding a "Library Summit" to \$10 million for a major, three-year, collection backlog project. Due to the variety in types and duration of projects, averages are most informative for categories of projects, rather than all projects. For ex-

ample, software purchases accounted for half the costs for the six implementations of new integrated library systems, followed by supplies (20%), services (12%), and staff (9%). The percentages of budgets allocated to staff, supplies, services, and other components for each project are detailed in the responses to Question 14 in the following section.

Of the 39 libraries that answered the question pertaining to cost and time overruns, seven reported cost overruns and fourteen reported time overruns. In some cases, cost overruns were caused by time overruns (a project taking longer than originally planned and budgeted for). In others, original cost estimates turned out to be too low, whether due to bad estimating, sudden increases in the cost of materials, or other factors. Causes for time overruns included the unavoidable (e.g., a manufacturer's error), the underestimated (e.g., insufficient staff), and the unplanned for (e.g., lost productivity due to frazzled nerves).

Staffing

Project Managers

A project manager was appointed to oversee and coordinate all but one of the projects—a move of collections and services from one branch library to another. Librarians accounted for 65% of project managers (32 responses); 12% were other library professionals (6 responses). A staff member managed one ILS module implementation project and an external temporary hire managed one of the retrospective conversion projects. Otherwise, 16% of project managers were categorized as "other" and included teams of various library employees, library administrators, and facilities management personnel, among others.

Sixty-three percent of the librarians or other professionals who served as project managers assumed this responsibility in addition to their regular responsibilities. (This survey defined "additional assignment" as one where the project manager was a current employee whose unit was not compensated and the project manager was still responsible for his or her regular assignments.) The librarians

spent an average of 32% of their time in this role for the project's duration. Other library professionals spent an average of 37.5% of their time on project management. Individuals who served as project managers for implementations of new integrated library systems consistently devoted a higher percentage of their time to this activity than did project managers on other types of projects.

Temporary reassignment to the position of project manager occurred significantly less often—in only eight cases or 16% of the time. (This survey defined “reassignment” as meaning that the project manager was freed from all or most of his or her regular duties and the unit was compensated for the project manager's absence.) Reassigned librarians spent an average of 60% of their time serving as project manager, reassigned other professionals spent 40%, and reassigned staff spent 50%.

Teams and Other Staff

The appointment of a formal team was the most common method for coordinating or staffing a project (43 responses or 88%). Even those libraries that reported no formal teams nonetheless described a loose network of individuals working together in some kind of informally coordinated fashion. In other words, there were no one-person projects reported! Twenty-two respondents (52%) reported teams of six to ten members. Teams of two to five members were next most common (11 responses or 26%), followed by teams of eleven to fifteen members (14%) and teams composed of over fifteen people (7%). The largest team had forty-five members, the smallest only two. Average team size was nine members.

Team members were appointed by criteria that sought expertise in various areas. Ninety-five percent of respondents appointed team members based on functional expertise. The majority of respondents indicated that team members were also selected either to represent particular constituencies, on the basis of managerial or supervisory expertise, to serve as liaisons to particular stakeholder groups, or because of prior successful project ex-

perience. Workload considerations were a criterion for only nine projects of various types. “Other” criteria included personal interest in the project, subject knowledge, and communications skills.

The survey attempted to solicit information on six different categories of staff—librarians, other professional staff, support staff, student assistants, temporary extra help, and “other”—for each project for both team members and non-team members. Respondents were asked about the number of persons in each category who worked on the project and the average number of hours per week each person worked. Projects to implement a new integrated library system and transfer material to storage made the heaviest use of all levels of permanent staff (librarians, other professional, and support staff). With the exception of one barcoding project, most projects made little use of student assistants. Detailed staffing data for individual projects is presented in the tables for Question 17.

The survey also asked about the kinds of training that project participants received. Different levels of staff received different combinations of training. The most common type of training was task specific. Eighty percent of the 40 responding libraries provided this type of training and, for the most part, provided it for all levels of staff. The responding libraries also provided project management training (22%) and team building training (15%), primarily for project managers, librarians, and other professional staff. Productivity software training was provided for four various projects and other types of training, such as on hardware or integrated systems software, were provided for eight.

Project Tracking and Resources Management

Large projects require careful management of staff and material resources so that schedules are met, budgets are controlled, stakeholders are kept informed of progress, and problems are identified and resolved before they jeopardize project success. A variety of software packages are available to assist project managers in all these tasks and re-

spondents to this survey were asked to report on the types of productivity software they employed and for what purposes.

Three-quarters of the responding libraries used productivity software for reporting purposes and to track project progress. Half used it to schedule tasks, manage material resources, or manage costs and overruns. A significant number used it to manage staff resources and schedule staff. Only three used it to manage risk. Two respondents used computer-aided design (CAD) software for construction design.

Spreadsheets and word processing software were used most often to manage one or most aspects of project-related work (79% and 69%, respectively). While more libraries used word processing software for reporting purposes, spreadsheet software was by far the most popular for managing most other activities. Database software was a distant third at 24%. It is interesting that only 19% of libraries reported using project management software, which typically can assist with all the tasks listed above. Instead, libraries showed a definite preference for using a variety of different software packages for a variety of tasks. Only one respondent reported using scheduling software; six used other types of software, including financial software and Microsoft Outlook. Unfortunately, the survey did not ask why certain types of software were preferred for certain tasks over others. It may simply be that the capabilities of project management software, used so pervasively in business contexts, are unfamiliar to librarians and other staff who are managing large projects in library settings.

Communication

Communication with a project's staff and stakeholders is a crucial component of effective project management and respondents were asked what types of communication strategies they employed and their effectiveness in communication with both groups. The top three strategies were e-mail, in-person information sessions, and periodic written progress reports. Updates on Web pages and

newsletter articles were also frequently used. Other forms of communication included giving updates at large staff meetings, signage, and public speaking engagements.

While all these forms of communication were used to some extent with both project staff and stakeholders, e-mail, in-person information sessions, and progress reports were used more often with staff. Conversely, newsletters and FAQs were used more often to communicate with stakeholders. The use of Web page updates as a communication vehicle was roughly equal for both groups.

Not surprisingly, on a scale of one to five, in-person communication was rated the most effective strategy with both project staff and stakeholders. E-mail was the next most effective strategy for communication with project staff, and periodic progress reports ranked second in effectiveness with stakeholders. Web page updates were among the least effective strategies with both groups. Not only are they less direct forms of communication, but also the onus is on the recipient to seek out the information rather than having it delivered to them.

Quality Control and Assessment

Respondents were asked if they built any quality control measures into their projects and, if so, to briefly describe them and their effectiveness. Roughly two-thirds had quality control measures in place during their projects while the rest did not. Obviously, the actual quality control measures implemented depended on the nature of the project. Test loads of bibliographic records were important for ensuring data integrity during new ILS system implementations; shelf-reading following a physical move of a collection was commonplace; spot-checking and benchmarking were used in a variety of different types of projects; and industry standards were followed in various areas. One respondent reported that quality control measures were implemented belatedly: "A review step was instituted regarding the quality of diary transcription and XML encoding. This process was done way too

far into the process and only after we realized that there was considerable inconsistency in transcription quality and XML encoding application.” Another respondent lamented, “We did not do nearly enough performance testing.”

Respondents were also asked about the use and nature of assessment measures to assure project success. Sixty percent reported that they used assessment measures; the remainder did not use any assessment measures. When asked to describe the measures employed to gauge project success, some described actual measures or assessment metrics, but many described goals and desired outcomes and made subjective statements about having achieved them. Several libraries mentioned outcomes related to completing projects on time and within budget. System migrations and retrospective conversion projects cited data accuracy, minimal loss of data, and no significant service interruptions as measures of successful outcomes. Some quantifiable performance metrics were very specific, for example, “Each bibliographer was assigned a target number of volumes to transfer based on volume count and circulation histories of LC class segments used in our conspectus,” and, “Three-year goals were set for reclassification and stacks reorganization with thresholds for each year.”

As mentioned earlier, all respondents considered their projects to have been successful and were naturally inclined to refer to their successes rather than to failed projects in answering this survey. In hindsight, perhaps we would be able to report a whole other useful set of findings had we thought to encourage a few libraries to risk describing their failures to the research library community! Nonetheless, the responses to Question 23 (“Do you consider this project to have been successful?”) reveal the excitement and sense of accomplishment that can follow from a well-managed project. One respondent commented, “It was the first automation project in a decade to be completed on schedule, within budget, and without any significant

interruption of service.” Another reported, “The Learning Commons itself is hugely popular with students and implementation of the ‘scholar’s work station’ throughout the library has greatly increased the gate count.” Yet another wrote, “Overall, the changes made and the resources developed for the staff to use in their work will be beneficial in the long run.”

Lessons Learned

In one of this survey’s last questions, respondents were asked to list up to three lessons learned during their project that they think would help new project managers. They were generous in sharing their accumulated wisdom and interested readers who go beyond this executive summary are referred particularly to the detailed responses to Question 24 in the following section. Three strategic lessons emerge from this wealth of commentary:

- *Human beings are your most important resource.* “Develop a team of appropriate experts who build mutual commitment and collaboration to achieve goals.” Recognize people’s contributions and hard work, celebrate their successes, and allow occasional failures.
- *Communicate! Communicate! Communicate!* Communication with project staff and stakeholders alike can rarely be too often, too early, or too much. Consult widely and listen attentively. Document decision making.
- *There’s no substitute for formal and deliberate planning.* Involve stakeholders in planning. Set clear goals and determine how you will measure outcomes. Data is essential. If time permits, undertake a pilot project to work out the kinks and collect needed information. Expect problems. Build in extra time and resources—projects always cost more and take longer than you anticipate they will.