

An Information Technology Project Funding Process

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Abstract

We describe a process for information technology project funding from opportunity identification through project funding. This general process was developed through work with a large global organization, but is applicable to other large information technology organizations. The process encourages early effort in budget development, captures resource time requirements, and ensures accurate designation of expensable and capitalizable items. The proposed process is rigorous and transparent, and should result in more accurate project budget estimates, more accurate financial reporting, eased management burden, and project portfolios that align well with IT executives' strategic vision.

Keywords: Project management, financial budgeting, project selection, business processes, IT strategy, system analysis

1. INTRODUCTION

Information Technology executives express their strategic vision in the portfolio of IT projects that they choose to fund. However, capital and resource allocation depends on the quality of information executives have. In many cases, the financial budgeting and capital allocation process for IT projects is haphazard and non-standard, limiting executives' ability to choose projects that support their strategic vision.

In this paper, we describe a common scenario regarding the IT project funding process, and suggest a general process for gathering project budgets, and presenting the information to executives. The proposed process addresses the problems in existing processes and should result in better capital allocation, eased management burden, and high-quality baseline budgets for IT projects that are funded. The general process was developed for a large global conglomerate business where a more customized system was implemented. The general process described should help IT executives and managers improve their IT project funding process.

We begin by describing the IT project funding scenario, its goals and constraints, and the stakeholders involved. Next we describe the problems that arise from this scenario and the effects on the stakeholders and organization. We then present the proposed IT project funding process and the benefits of the process. Finally, we discuss several issues that may arise in the implementation of such a process.

2. SCENARIO FOR IT PROJECT FUNDING

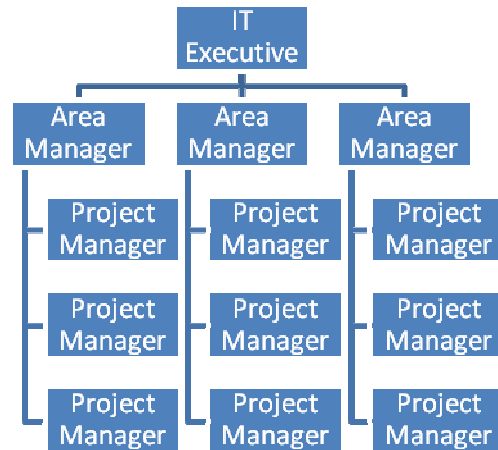
A typical organization chart for a large IT organization is shown in **Error! Reference source not found.** Project managers are responsible for direct management of individual projects, and must manage budgets for those projects. Area managers have multiple project managers that report to them, and must manage aggregate budgets. IT executives have multiple area managers that report to them, and must manage even more aggregated budgets.

Project managers formulate pro-forma budgets for potential projects. This information is aggregated at the area

manager level and ultimately at the executive level. Project selection is performed with this aggregated information.

The actual number of levels in the organization may, of course, change, as may the span of control. However, the information flow and general hierarchical nature of the organization is common.

Figure 1: IT Organization Chart



The life cycle for projects is presented in Figure 2: Project Life Cycle. The first step is Project Identification, where opportunities to create value are first identified. The ideas may come from nearly any area or person. If initial screening suggests that the project may be worthwhile, it is assigned to a project manager who creates a pro forma budget. Area managers aggregate the many project pro forma budgets into an area budget, which they present to the IT executive(s). The IT executive selects projects to be funded. Once approved, projects go to implementation. It is worth noting that the pro forma budget becomes the base budget during project implementation, and budget variances can be tracked against the pro forma.

IT executives must choose a portfolio of IT projects subject to resource constraints. Their goals in this selection are to support their strategic vision, and effectively use available resources. Good project selection will hopefully create value for the organization.

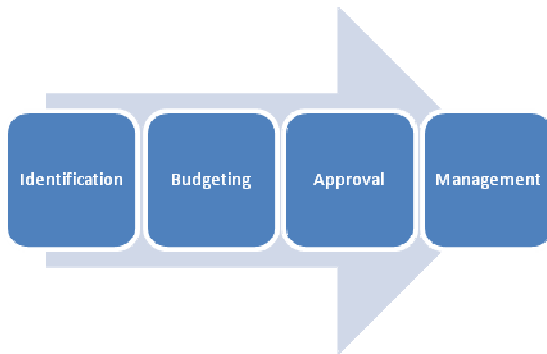
However, there are constraints that IT executives must satisfy in their selection:

- Capitalizable budget

- Expensable budget
- Human resources
- Ongoing operations

The capitalizable budget is the dollar amount in their budget for capitalizable items. For instance, an investment in infrastructure such as a data center is eventually reported on financial statements as a depreciable asset. Executives and managers are constrained by how much they can capitalize in a given time period.

Figure 2: Project Life Cycle



The expensable budget is the dollar amount of directly expensable items. For instance, human resources for development of a system are typically expensable in the current year. Both development and ongoing maintenance expenses need to be considered.

Human IT resources must be considered for both quantity and timing. The number of project managers constrains the number of projects that can be undertaken. Furthermore, a project manager may be able to undertake one project during the first half of the year, and another in the second half, but not both together in the same half.

Of course, ongoing operations must be supported. Not only is this a financial consideration, but it often affects timing of human resource availability. A significant system upgrade may monopolize IT professionals' time and conflict with a new development project.

Many of these constraints are soft, and are not explicitly addressed in the decision making process. Human resource constraints can be addressed by time-limited staff augmentation during crunch times, and effective budget management can address resource constraints during implementation.

However, ignoring these constraints can lead to serious problems.

3. PROBLEMS

The scenario above may seem straightforward and clear. In practice, it can be haphazard, time consuming, and prone to errors. Projects are proposed by many different project managers, with varying levels of detail and accuracy, and various methodologies. In practice, one project manager may give a rough estimate of the bottom line for the entire project. While another may give very accurate estimates and timings of every individual resource required through the project. One project manager may provide an excel spreadsheet of their own design, while another may use a project planning tool. Project managers may over- or under-estimate a project to influence its funding. Project managers may not be financially astute enough to accurately identify expensable and capitalizable items accurately.

Not only does the lack of standards in the process make the aggregation of the budgets time-consuming and haphazard, but the resulting information is error prone. Specifically, pro forma budgets can contain:

- Over-stated requirements
- Under-stated requirements
- Mis-designated requirements
- Mis-timed requirements

A project that over-states causes several problems. First, it may cause other worthwhile project to not be funded. Second, it may cause under-utilization of resources. Third, it causes management issues, in that variances must be explained and dealt with. In some cases, this is actually desirable from a project manager's or area manager's point of view, since it may allow them to shift resources from over-funded projects to under-funded projects during implementation. However, consistently over-stating requirements clearly leads to under-utilized resources, and is usually identified in budget variances.

A project that under-states requirements can most directly lead to its own failure. In the event that the project is believed to have high value, other projects may be dropped in order to fund the under-funded project. Of course, dropping projects and re-allocating

resources comes with a high management cost and wasted effort.

A common error in the pro forma budget is to mis-designate items: expensable items might be designated as capitalizable or vice-versa. Organizations must report items correctly according to Generally Accepted Accounting Procedures (GAAP), and thus expensable and capitalizable items are budgeted separately, and reported on financial statements differently. The effect mis-designating is under-stating one area, while over-stating the other. For example, mis-designating \$1M as expensable, creates a \$1M budget surplus in expensable items, and a \$1M budget deficit in capitalizable items. This causes the same problems listed above such as dropped or failed projects and high management cost. Furthermore, it leads to poor capital management for the finance function of the company, and possibly legal ramifications due to inaccurate financial reporting.

Pro Forma budgets commonly leave out, or only roughly describe the time periods during which specific resources are required. This can lead to periods where resources are double-booked, and other periods where resources are idle. In the extreme case, this can lead to dropped or failed projects due to resource conflicts. This problem can sometimes be addressed with on-the-fly project management creativity, staff augmentation, or overtime. However, it can also create peaks and valleys in demand for resources, increasing the overall management cost.

A less-visible result of the problems described above is a high amount of effort in aggregating the information for middle management. It is common for many iterations to occur between project managers and area managers, in clarification of items. The area manager must ultimately present an aggregated pro forma budget, typically of their own design, which may be different in format from other area managers.

The ultimate result of the problems identified above is poor information on which the IT executive must make their important project portfolio decision. The many tactical issues identified ultimately affect the ability of the organization to pursue its strategic vision.

4. PROPOSED PROCESS

The proposed project funding process is presented in Appendix 1: Proposed IT Project Funding Process. The process proceeds from left to right, and crosses functional areas.

Key to the success of this process is a system for capturing and presenting pro forma budgets. This system is necessarily specific to the organization, but can be generally described. To capture budget items, a budget worksheet can be filled out by project managers. A screen shot of a rough prototype for such a tool is shown in Appendix 2: Budget Worksheet.

The budget worksheet allows for hierarchical entry of high level tasks and subtasks. It also allows for allocation of general resource categories to tasks, with associated costs. Note that allowable resources are enforced through drop-down lists. The actual items in the drop-down lists could be specific to the organization. The budget worksheet also subtotals by capital and expense items, and totals the pro forma budget.

The budget worksheet enforces a standard for entry of pro forma budget items. It is similar to a project management system, in that tasks and resources are identified. It differs in that

- it is too high level for actual project management
- it also captures purely financial resources
- it forces designation of items as capitalizable or expensable

The data captured by the budget worksheet is too rough for actual project management purposes. For use during project implementation, the high level tasks must be broken down into much more detailed sub tasks, and specific resources must be identified for the general resource categories. The budget worksheet certainly provides a high-level project plan from which project managers can add details to obtain a workable project plan for use during implementation. Project management software does not capture purely financial items, such as purchased hardware and software licenses, or vendor sub-contracts. In a large IT organization, these can be the major items for budget approval purposes.

Pro Forma project budgets entered through the budget worksheet are captured in a database common across project managers. In this way, data gathering is achieved in a standard way, and aggregated information is available in reports for Area Managers and Executives.

The IT Project Funding Process begins with the identification of a project opportunity. If the project concept is judged to be valuable, it is assigned to a project manager. Not addressed in this paper is valuation of the return of the project. For instance, in a simple Return On Investment (ROI) analysis, both the Return and the Investment are estimated, and the ratio compared to other projects. The system we describe is useful for estimated the Investment, but not the Return.

We advocate due diligence in estimating Return. However, selection of a project portfolio cannot be done purely by the numbers. Return is often made up of many intangibles and hidden benefits. Costs are typically more concrete and estimable. Furthermore, project selection must not only consider ROI, but it must also support the strategic vision of executives. Suffice it to say that projects return should be evaluated and used in the project selection process. The system we describe, however, only addresses the cost side.

After Project Opportunities are identified and assigned to a Project Manager, budget items and estimates can be entered. Then an iterative process between the Area Manager and Project manager begins. Area Managers may ask for more detail subtasks, or clarification of resource items. Furthermore, Area Managers can provide their input to resource estimates and timelines. Area Managers must approve the pro forma budget before forwarding to the Finance Area for review.

Review by the Finance area is a key step that can be missing in funding processes. It is important because budgets for capitalized and expensed items are different. As mentioned previously, mis-designating items causes budget shortfalls in one area and surpluses in the other. The finance area reviews pro forma budgets mainly to judge the appropriateness of the designations of expensed or capitalized items. This ensures that items are designated appropriately, and

that GAAP can be satisfied. This may require clarification from Area Managers and/or project managers. In the end, the Finance Area shares responsibility for appropriate designation of items.

After individual pro forma budgets have been approved through Finance, Area Managers can generate aggregate budgets for their area. Assuming the budget worksheet has been used, and budgets are entered in a common system, the generation of an aggregate budget is a simple matter of running a report. Aggregated budgets are then forwarded from Area Managers to IT executives for review and project selection. It should be noted that reports can also be run from a resource and time perspective to highlight potential problems.

The process thus far ensures that projects have been systematically reviewed by Project Managers, Area Managers, and the Finance Area. Furthermore, budget information was captured in a consistent manner, and thus should provide high quality information on which to base resource allocation decisions.

Upon funding approval of a project, budget accounts are created based on the pro forma budgets. This can be done readily, since the pro forma budgets are standard and well-reviewed. Limited adjustments are necessary from Area Managers and Project Managers. Budget variances can be tracked directly against original estimates. This is a key difference from other processes, where approval and budgeting can be widely separated. In many cases, projects are approved on rough estimates, and more detailed budgets are only created on creation of accounts. This can lead to disparities between budgets on which projects are approved and on which variances are calculated.

As a final step, the pro forma budgets can be used as a guide in creating detailed project plans for use in implementation. High level tasks and resource needs have already been identified. Furthermore, a rough timeline is also in place. This conserves project manager effort, since the work done to gain project approval is useful when creating their project plan.

5. DISCUSSION

The process we have presented for IT project funding encourages two major effects:

- Effort moves toward the beginning of the process
- Less ambiguity

In this process, project managers spend more time fleshing out details of their pro forma budgets early in the process. This effort certainly helps downstream participants, but also helps the project managers later in the process. We've observed project managers making significant revisions to their budgets through approval and into implementation. Thus rigor in the initial analysis reduces rework and management costs later.

The proposed process reduces ambiguity and achieves a much more transparent process. Project approval can be a political process, and some managers utilize the ambiguities to achieve ends that may be counter to the overall organization. In some situations intentional mis-statement in pro forma budgets may be used to influence funding decisions. In this process, there is a direct link between budgets used in project selection and budgets used to calculate variances during implementation.

The benefits of the proposed IT project funding process include:

- More accurate requirements capture for projects
- Smoother project funding process
- Smoother implementations
- Better resource utilization
- Better alignment of projects with IT strategy

In the Problems section, we identified specific problems surrounding errors in requirements: over-stated, under-stated, mis-designated, and mis-timed. In our suggested process, Area Managers can spend less time aggregating wildly disparate formats and budget estimates and spend more time reviewing budget estimates for realism. The budget form can validate cost entries, and restrict entries to valid cost categories. In particular, mis-designated items should be greatly reduced by review by the Finance Area. Since mis-designation

simultaneously creates budget over-runs and under-runs, a great benefit is generated by reducing mis-designations. Since start and end times are captured for high level tasks, potential conflicts can be detected early.

In general, the project funding process can be haphazard and ambiguous, with much rework and effort through the process to approval. In many cases, the work done to gain approval is not helpful later in implementation. In the proposed process, early capture of pro forma budgets in a standard manner save all stake-holders time and effort.

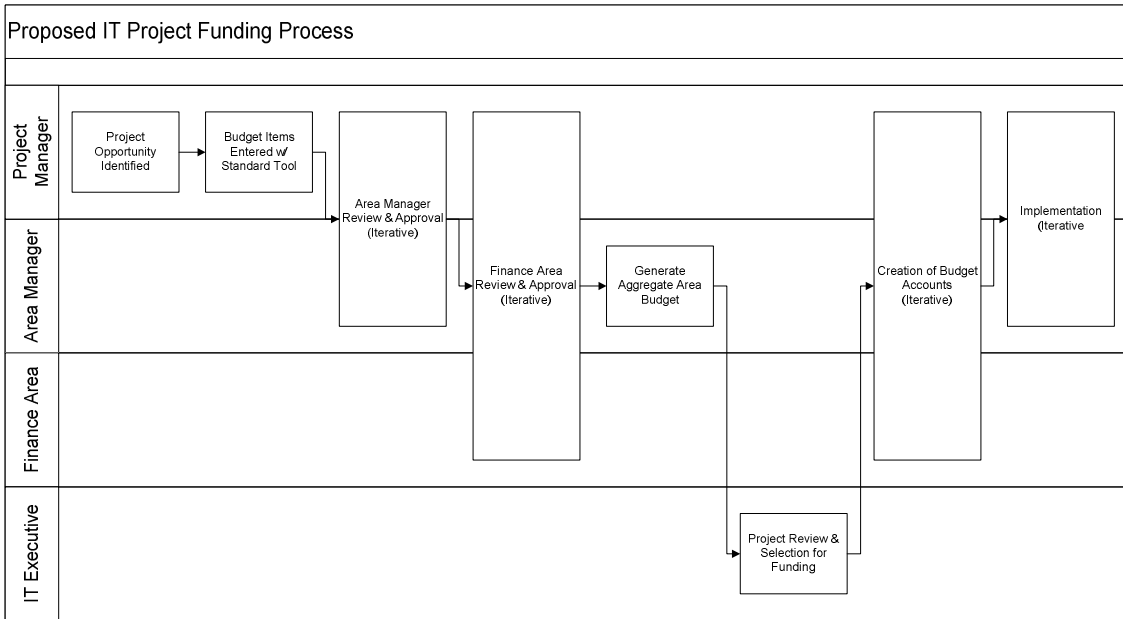
Because of more accurate budget estimates, the effects of poor budgets should be lessened: failed, cancelled, or delayed projects, re-allocation of resources, resource need conflicts, etc. These all lead to high management cost and stressful project implementations.

The proposed process should result in better resource utilization. At a high level, executives can choose a portfolio of projects that accurately and efficiently uses resources, because pro forma budgets are more accurate. With less accurate pro forma budgets, resulting portfolios may under-utilize overall resources, over-utilize overall resources, or overburden some areas while others are idle.

Ultimately, the proposed process should result in better alignment of IT projects with IT strategy. With inaccurate pro forma budgets, executives may be constrained away from their ideal portfolio of projects. In other words, based on the inaccurate budgets, they believe their ideal portfolio is unattainable. Thus a less desirable portfolio is chosen, even though their ideal portfolio was actually attainable.

This general process should provide guidance to other organizations. Custom organization-specific systems and processes can be designed and implemented from this process.

APPENDIX 1: PROPOSED IT PROJECT FUNDING PROCESS



APPENDIX 2: BUDGET WORKSHEET

File Tasks

Add Task Project # Project Name

Add Sub Task Top Task # Task Name Start Date Duration End Date Cost \$

Add Resource Task # Task Name Start Date Duration End Date Cost \$

Resource Quantity Cost \$

Resource Quantity Cost \$

Add Resource Task # Task Name Start Date Duration End Date Cost \$

Resource Quantity Cost \$

Resource Quantity Cost \$

Add Sub Task Top Task # Task Name Start Date Duration End Date Cost \$

Add Resource Task # Task Name Start Date Duration End Date Cost \$

Resource Quantity Cost \$

Cost Totals

Capital	Cap \$
Expense	Expense \$
Total	Total \$