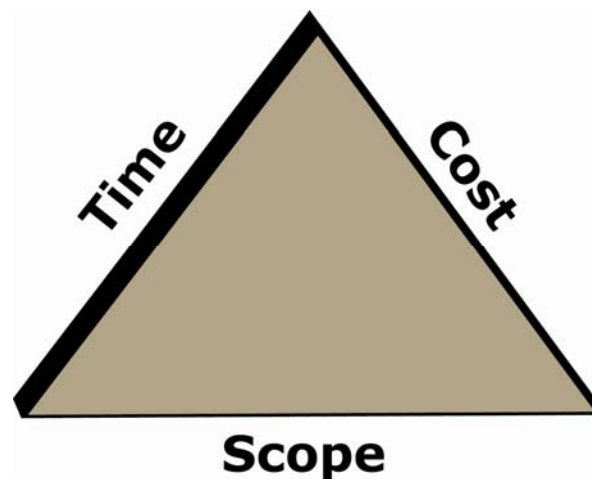




ERP PROJECT SCOPE MANAGEMENT AND ITS IMPACT ON PROJECT BUDGET

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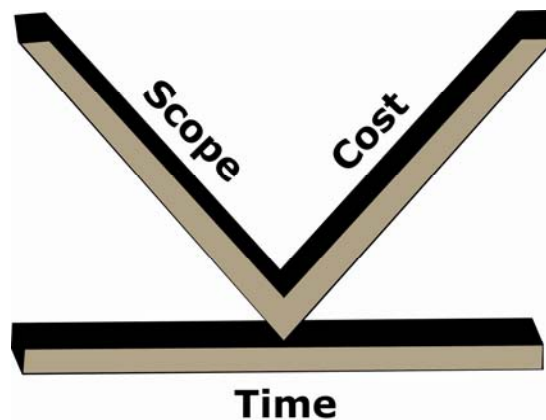
If you ask any Project Manager to explain the concept of the triple constraint triangle (also known as the Iron Triangle) of Project Time, Cost and Scope, the answer will be “You cannot change one side without changing one or both of the other sides.”



While this is true for projects that follow the common project life cycle such as software implementation or construction projects, it does not usually apply to Higher Education ERP implementation projects. ERP implementation projects differ significantly when it comes to the Time side of the triangle. ERP implementations require specific go-live dates that are set at the beginning of the project which specify when the new system goes into a full-user mode. For example, the go live date for a Finance system is usually the beginning of the fiscal year and moving the date by a week or a month would leave the enterprise with no Finance system. The go live date cannot be easily adjusted. Due to constraints with support and licensing, most enterprises opt to change Cost and Scope rather than Time.

An option available to institutions faced with challenges to meeting a fixed go live date is a partial or limited go-live. This type of go-live ensures that the critical modules in the system are scheduled for AND do go-live as planned. The remaining modules are scheduled for subsequent go-live dates. A good example is a Finance ERP implementation where the institution opts to go-live with core modules such as Ledgers, Purchasing and Accounts Payable. Other modules such as Fixed Assets, Cost Accounting and others are scheduled for future phases,

We suggest redefining the triple constraint triangle as follows: Scope and Cost are the two main factors that affect each other while time remains fixed.



What are the prerequisites of a successful and effective methodology of managing Scope/Cost? The prerequisites always include detailed project budgeting and a scope change management plan.

PREREQUISITE 1: PROPER AND COMPLETE DETAILED PROJECT BUDGETING

It is imperative to have an accurate and detailed project budget prior to the start of the project, and it should include a contingency fund of at least a ten percent of the total project cost. This initial planning budget should be completed during the initial planning phase of the project. During the final planning phase of the project and upon completing tasks and training scheduling, a tracking detail level budget should be created for the project. Creating and using a tracking detail level budget is not a simple task. Project managers should use some kind of a tool to help track and report budget variance. There are no standard tools for tracking and reporting an ERP budgets. However, standard software tools such Excel Spreadsheets and Microsoft Project can be used to track and report on budget consumption rate and variance.

Readers may want to review 3 budget articles in the CPS website articles library. The first article “ERP Budget 101: Constructing the Initial Planning Budget”, outlines the steps involved in creating an initial planning budget for an ERP project. The second article “ERP Budget 101: Part II – Constructing the Managing-Level Budget” summarizes the steps involved in developing the detailed budget used to manage and track the ERP Project expenditures. In the third article “ERP Budget 101: Part III – Tracking

and Controlling Your Project Budget”, we focused on how to manage and control budget expenditures to ensure on or under budget performance.

PREREQUISITE 2: PROPER AND STRICT PROJECT SCOPE CHANGE MANAGEMENT

Change Management processes and procedures must be established to prevent scope creep that might increase the budget. Project managers should implement project change management procedures that include budget impact analysis. Including budget impact analysis will ensure that any changes to the scope of the project will be carefully analyzed and the impact on project budget will be considered and evaluated. Scope change management including budget impact analysis will ensure that all project stakeholders understand the impact of scope changes on the budget. The analysis may indicate that the project budget needs to be adjusted.



There are many different approaches and methodologies for Scope change management. A good scope management plan will focus on a methodology that ensures change requests are well analyzed. To minimize scope changes after the beginning of the project, a well defined, documented and communicated project scope must be completed in the planning phase. A project plan should include: (1) a well defined project scope that lists all of what is “in scope” and; (2) a well defined scope change management plan including tools such as change request forms, logs and approval procedures.

A good scope management plan begins with an understanding of the institution’s need to control scope. Usually the purpose of the plan is to ensure the project is completed on time and within budget, and Time is usually fixed. When scope expands, the necessary budget has to increase as well. Because cumulative small changes at a low level can have a large impact on the project, it is important that change be managed at the institutional level.

By identifying the goals of the change management plan, change requests can be prioritized. Higher education projects often set a goal of limiting modifications to the ERP software since the cost of modifications grows over time as they are re-applied after every software upgrade. Another goal of many higher education change management plans is to encourage process and policy changes rather than software modifications to fit existing processes and policies. Both of these goals try to minimize scope changes in order to avoid going over budget. A third goal is to encourage communication between users and support decision making at the institutional rather than the departmental level.

Inevitably there will be scope changes that are necessary to handle the gaps between institutional requirements and the ERP software capabilities. A good scope management plan will help align project efforts and resources to meet institutional needs.

A formal process for approving scope change requests will prevent ad hoc decisions to change scope without project management involvement. A good formal process provides for initiation by any project team member and review by project management before submittal to a change management board or team. Every effort should be made to evaluate the impact of the change on the following:

- Budget
- Schedule
- Project Resources
- Other Departments

In addition to these four categories, the analysis should address the risks associated with NOT making the change as well as the risk of making the change. Alternatives that might be less costly should also be considered.

CASE STUDIES

The following are several case study examples of CPS managed and/or completed projects. The actual client name was withheld to protect client privacy. However, the data collected are actual and reflective of projected or final project cost:

| Institution | Initial Project Budget | Project To Date (PTD) Planned Expense | PTD Actual Expense | Budgeted and PTD Expense Variance | Planned Budget Consumption Rate | Actual Budget Consumption Rate |
|--|------------------------|---------------------------------------|--------------------|-----------------------------------|---------------------------------|--------------------------------|
| Case Study 1 <i>(ongoing more than 80% complete)</i> | \$8,120,978 | \$7,223,793 | \$7,223,793 | - 0 - | 96.0% | 89.0% |
| Case Study 2 <i>(ongoing more than 80% complete)</i> | \$3,034,506 | \$2,497,945 | \$2,761,985 | (\$264,040) | 82.3% | 91.2% |
| Case Study 3 <i>(project completed)</i> | \$4,923,731 | \$4,678,553 | \$4,678,553 | - 0 - | 100.0% | 95.0% |

Case Study 1

Institution A implemented a full ERP suite including student, financial aid, finance and human relations. The initial project budget included a reasonable and sufficient consulting budget and a ten percent contingency fund. Strict change management procedure was used to minimize and prevent unnecessary software modification. There were scope changes in the project such as addition of auxiliary software

that were not included originally in the project scope. However, the contingency fund was able to cover all expenses resulting from approved scope change requests. Most of the project budget surplus was due to savings in the project consulting budget. Strict schedule management was applied to this project to ensure that training and consulting resources were utilized appropriately and efficiently.

Case Study 2

Institution B also implemented a full ERP suite including student, financial aid, finance and human relations. The initial project budget did not include any contingency fund. There were scope changes in project primarily due to approved Change Requests (CR's) for software licensing, maintenance and services for additional systems. However, the software vendor's time and materials project to date expenditures are under budget.

Case Study 3

Institution C implemented a complete student administrative solution including reporting analytics. The implementation encompassed multiple education systems with dozens of geographically separated campuses. The approved project budget was \$4,923,731. Project expenditures came in 6% under budget even with the approval of change requests for additional services not included in the original statement of work. Furthermore, there was a line item for backfill within the approved project budget which was not used.

During project execution, an additional education system with multiple campuses was acquired by the institution. The project scope was expanded to implement the student administrative solution at the newly acquired campuses. This decision required an additional expenditure equivalent to 7% of the original budget reducing the 6% budget shortfall to 4%. Time remained constrained and the original schedule remained in place.

All three of these case studies dealt with the need to constrain Scope and Cost within a fixed implementation time frame. The project management teams analyzed the Scope/Cost tradeoffs required to meet the original implementation deadlines. Changing the implementation deadlines for these institutions was simply not an option.

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