Cost Management Software

Buyers Guide

PROJ STREAM
THINK FORWARD

A Guide to Organizing and Documenting Business Requirements

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INTRODUCTION

This guide is intended to help you organize your business and functional requirements and gather fact-based information for evaluating your options for cost management software tools. This guide focuses on the cost management software tool that complements or integrates with other project control software tools such as schedule and risk to ensure technical, schedule, cost, and profit objectives are met.

The content is organized into three steps:

1 **Defining Business Requirements**

2 **Documenting Requirements**

3 **Implementation**

What is your objective? What problems are you trying to solve?

How will a cost management software tool support or improve your project control process?

Taking the time to articulate your issues, business needs, and objectives provides a documented basis to determine which software tool provides the best return on investment.

Create a simple framework to capture your top cost management process issues.

Define specific actions to eliminate or mitigate the root cause of the issue.

Where possible, identify a means to measure the business impact of eliminating the issue.

This approach can help you create the functional requirements list for the software tool.

The following example illustrates this thought process.

Issue:

Project managers use ad-hoc Excel spreadsheets to manage budget, actual costs, and cost estimates for remaining work. Cost estimates lack details necessary to verify rationale. This limits the ability to create credible cost at completion forecasts for corporate financial analysis.

Root Cause

Lack consistency in how project teams create and manage their budget data as well as track actual costs expended. Project teams lack direction on how to produce estimate to complete data.

Requirements

Establish a central database for all project teams to maintain budget, actual cost, estimate to complete, and estimate at completion data. Tool should provide a collaborative working environment where all team members can manage and view the data as well as track changes.

Expected Outcome

A significant increase in the consistency and quality of project time phased cost data for corporate financial analysis across business units. Eliminates manual process to collect and transform data from over 50 projects. Anticipate a reduction of at least 70% in the time required to produce financial reports.

Issue:

Unable to gather quantifiable data to determine resource availability and demand for existing projects as well as pending or likely contract awards. Business units are often lacking key resources that require temporary higher cost resources which impacts profit margins.

Root Cause

Lack credible source data for resource planning and management. Business unit managers produce inconsistent ad-hoc Excel spreadsheets that lack substantiation.

Requirements

Establish a central cost database to consistently produce time phased resource requirement data views for in process or planned project tasks across business units. Leverage resource profiles and learning curves to increase the accuracy of time phased resource requirements.

Expected Outcome

Can routinely assess the likely resource demand to proactively manage resource requirements. Significantly increases resource planning predictability and accountability as well as employee retention. Anticipate a 60% reduction in temporary hires for surge support.

Issue:

Unable to proactively manage projects because of limited visibility into project status. Project manager progress assessments are often inconsistent and incomplete. This limits management's ability to make timely decisions. Cost growth issues often surface without warning. The financial impacts are often significant and impact profit margins.

Root Cause

Project teams use a mix of ad-hoc Excel spreadsheets and legacy tools to manage time phased cost data that are not integrated with the schedule tool. Project teams lack direction on how to define objective performance measures and how to proactively use them to the manage work effort. Project managers lack the tools needed to manage time phased cost data and produce performance metrics.

Requirement

Establish a single cost management tool as a central database to maintain the time phased cost data. The tool must support industry standard methods for measuring work performance and calculate standard work performance metrics. The schedule and cost tools must be integrated to create schedule driven budget and estimate to complete data with schedule status as the basis for claiming performance.

Expected Outcome

Incrementally improve management visibility into the current status of projects over the next 18 months. Enhanced process establishes the means to identify potential issues early so appropriate actions can be implemented quickly to mitigate or otherwise limit cost impacts to the projects. Reduce costly project surprises that adversely impact the company's profit margins by 70% within that 18-month time frame.

Identify how you intend to measure the impact of an issue in time or cost.

Use the same measure to quantify the expected outcome by eliminating or reducing the impact of the issue.

Use this data to calculate the return on investment and how quickly results can be achieved.

Documenting your requirements is useful for establishing an objective means to determine which software tool would work best for your environment. An example framework for gathering requirements follows and is organized into five categories.

Required Functionality ---- **User Community** ---- **Deployment Environment** ---- **Process Improvement Support** ---- **About the Vendor and Tool**

REQUIRED FUNCTIONALITY

Make a list of the functionality you need. Organize the items to align with your cost management process or other grouping that aligns with your business requirements. This can help you during the software implementation process to verify the tool meets your needs.

Consider ranking the line items to identify which ones are more important. This can be as simple as noting whether a line item is required or a nice to have – a bonus when the functionality is included. Or establish a weighted methodology.

Add a column for each software tool you are evaluating so you can easily do fact-based comparisons. Add a notes column to include details about tool functionality you can reference during the evaluation process. For example, perhaps one tool partially supports a requirement. Make a note of any limitations. Or, perhaps another tool includes functionality you didn't think about. Make a note of other capabilities that can help address other business needs or make things easier for a user.

An example requirements list organized by process follows.

Configuration, Setting Up Core Data

Functionality	Rating	Tool A	Tool B
Can establish a standard accounting calendar template	Required	✓	✓
Can define project specific reporting calendars as well as resource calendars	Required	✓	
Can establish a standard base project configuration new projects can use as a template to enable cross-project reporting and analysis	Required	✓	✓
Can create an unlimited number of user defined code lists and structures, add a variety of different types of user defined fields (text, codes, flags, Boolean, dates) to support project unique data views and reporting requirements	Required	✓	✓
Can establish a standard rate template and rate calculations with ability to create custom expressions	Required	✓	
Can build complex rate structures with ability to apply escalation factors	Required	✓	
Can create an unlimited number of rate structures for different cost types (budget, actual costs, estimates)	Required	✓	
Can import current rates from the accounting system	Required	✓	
Can establish a standard hierarchical resource structure template with element of cost categories (labor, material, travel, other direct costs, subcontract)	Required	✓	
Can easily import data from other systems using Excel	Required	✓	

Planning

Functionality	Rating	Tool A	Tool B
Build WBS structure	Required		
Import WBS from Excel	Required		
Import WBS from scheduling system (identify specific tools such as Microsoft Project or Oracle Primavera P6)	Required		
Can produce a WBS dictionary	Required		
Can parse statement of work (SOW) document paragraphs into a code structure to map to WBS elements	Bonus		

Budgeting

Functionality	Rating	Tool A	Tool B
Easy to use grid view similar to Excel to enter data with built-in hierarchical structure to view the data at summary, intermediate, and detail levels	Required		
Ability to change the order of the columns, hide or show columns, sort and filter the data in the grid view similar to Excel	Bonus		
Project team members can collaborate and share the cost data with optional user locks	Required		
Ability to import proposal cost estimate and basis of estimate (BOE) rationale as the initial basis for the time phased budget			
Can enter budgets in hours, full time equivalents (FTEs), or cost and select the rate structure to apply direct and indirect rates	Required		
Can create custom budget distribution spreads and learning curves			
Import resource loaded activity data from scheduling system to produce the time phased budget data	Required		
Ability to enter BOE, statement of work, and other text documentation with the budget data at user determined level of detail	Required		
Can create hierarchical bills of material (BOM)	Required		
Supports standard performance measurement techniques: 0/100, 100/0, 50/50, User Defined, Percent Complete, Milestones, Level of Effort, and Apportioned Effort	Required		
Supports rolling wave planning techniques	Required		
Built-in budget log to track management reserve and time phased budget changes	Required		
Can create a library of historical project performance data for future proposals and basis of estimates	Required		

Measuring Performance

Functionality	Rating	Tool A	Tool B
Import schedule activity status as the basis for the work package performance claimed in the cost tool	Required		
Import actual costs from accounting system on a weekly and monthly basis	Required		
Enter estimated actuals for materials and subcontractors to align performance claimed and actual costs in the same accounting month	Required		

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Analyzing Performance

Functionality	Rating	Tool A	Tool B
Built-in cost data validation analysis view and report to identify common data anomalies	Required		
Import resource loaded activity data from scheduling system to produce time phased estimate to complete (ETC) data	Required		
Web option for technical users or teaming partners to enter time phased ETC data	Required		
Web option for technical users or teaming partners to enter progress or percent complete when schedule is not integrated	Bonus		
Ability to do what-if analysis and create different ETC scenarios	Required		
Ability to enter or calculate an unlimited range of estimates at completion (EACs)	Required		
Calculates standard work performance and cost metrics	Required		

Reporting

Functionality	Rating	Tool A	Tool B
Built-in ad-hoc and pivot table reporting	Required		
Easy to use built-in report wizard	Required		
Ability to establish report templates	Required		
Built-in element of cost reports including time phased resource planning reports, travel expense tracking reports	Required		
Ability to combine time phased cost data and documentation in one report	Bonus		
Single project, multi-project, or enterprise level portfolio analysis reporting	Required		

Workflow, Change Tracking

Functionality	Rating	Tool A	Tool B
Ability to define user roles, routing rules and workflow queue to manage the development, entry, and maintenance of project data	Required		
Workflow available in the web to identify responsible parties for ETC or progress entry	Required		
Ability to manage baseline change requests and track them to closure	Required		
Ability to manage work authorization forms	Required		
Approved baseline change requests automatically update work authorization forms and budget log	Required		

USER COMMUNITY

Identify the functional roles of the people who will be using the tool. Functional roles could include project managers, schedulers, cost analysts, and potentially technical experts. Functional or business managers may want a say in the decision-making process or at least be informed about introducing a new tool into the project control process.

Develop a role-based training plan to encourage user acceptance of the new tool. How many people will need to be trained? How do you plan to conduct the training? What is the format, timing, and duration of the training? Engage the functional users so they can learn for themselves how to use the software to accomplish their project control tasks. Consider conducting different types of training sessions to target specific functional roles.

Determine the likely number of software users. The software vendor will need this information for pricing. Depending on the vendor's pricing model, be prepared to identify the likely number of core users and occasional users that provide budget, status, or estimate to complete data to the project control team.

DEPLOYMENT ENVIRONMENT

Identify the requirements for deploying the software. You may need help from your CIO or IT resources to document specific technical, user access control, or security requirements the vendor must comply with. An example of a basic list follows.

Deployment Requirements	Tool A	Tool B
SaaS subscription option available, meets FedRAMP security requirements		
Access controls: Project level		
Access controls: Role-based or user locking at WBS element level		
Access controls: Subcontractor (external entity) specific grid view to enter or update data for specific WBS elements		

Document how the cost management software tool may help to simplify or enhance process and procedures. This can help you identify additional items to add to the required functionality list.

Implementing new tools often facilitates needed changes to outdated process and procedures.

- How can the tool help to save time, streamline a workflow, increase data traceability, or enhance the value of the cost data?

- Is it possible to create an environment where there is a single reliable source for schedule, cost, and risk data?

- What can help project personnel implement practices so it is easier for them to create quality schedule and cost data from the start, accurately plan resource requirements, objectively measure completed work, proactively manage the remaining work, and implement approved changes?

For example, perhaps the tool can help to establish a set of base templates project teams can leverage during the project initiation phase to reduce the time required to create the project's time phased budget plan. This could include a foundation template for creating a new project that reflects a standard base configuration that enables cross-project reporting and analysis at the corporate level.

Other templates could include base work breakdown structures for routine task orders or a process library of repeatable tasks with resource and material requirements designed to help project teams save time and produce quality data. Establishing report templates can streamline the process and reduce the time required to produce expected resource planning, performance analysis, or financial analysis reports.

A tool with built-in workflow as well as automated transaction audit trails, forms, and change tracking helps to simplify the change control process. Easy to use report wizards helps project teams to create data views and reports to proactively manage resources as well as the remaining work on the project.

As part of your assessment, you also want to gain an understanding of the tool's architecture, history, update cycles, and how the vendor responds to software issues.

Use your professional network to talk with other users of the software. Ask the vendor for client referrals you can contact.

Here is a short list of things to consider.

Single database?

What often happens is that vendors acquire tools from other companies. As a result, the data may reside in different databases requiring users to continually import and export data between the tools. There is an automatic process penalty when the data doesn't reside in a single, central database.

What is built into the tool or are add-ons required?

Verify what functionality is built into the tool. For example, does the tool include built-in:

- Change control?
- Workflow?
- Project and enterprise level reporting?

If not, do you need to purchase other tools or utilities?

Implementation risks are higher with additional tools in the mix because they add a layer of complexity and are external to the main tool's database. They often have a different user interface that requires additional training. They also increase the total cost of ownership.

✓	**What is the average release cycle for updates?**	This provides a gauge of how quickly the vendor responds to user enhancement requests or to address software issues. Does the vendor do periodic major releases? How often do these occur? Twice a year, once a year?

Or, does the vendor follow an Agile approach where they do fast, incremental releases to continually enhance the product? If yes, ask the vendor about their sprint cycle. |
✓	**What is the average response and resolution time for issues?**	This is where other users of the software can provide useful information. Does the vendor respond in hours, days, or weeks? Are the support personnel knowledgeable?
✓	**Does the software architecture support web services?**	This provides a gauge of whether the software architecture is dated or current. Recently developed software is often available as a web service or web application (browser access) for a broader user base. Web services are self-contained, modular, and dynamic applications that use open protocols and standards. Web services allow the application platform and technology to be independent.
✓	**How easy is it to exchange data with other business systems?**	Verify what options you have. Excel import/exports only? Or does the tool include APIs? APIs are a superior method to exchange data between systems because they are a direct connection between databases.
✓	**How configurable is the tool?**	The intent is to gain an understanding of the scope of the configuration options in the tool. Is it flexible enough to accommodate your business environment? Can you create the necessary user defined codes, structures, and other fields to align with your business needs? Can you organize, sort, select, and group data as desired? Can you produce the results, outputs, or reports you need?

This can help you identify and document the configuration details for your environment.

Software features and functions are only part of the equation. You also need a plan and schedule for how you intend to implement the software. How do you reduce the risk of implementing a new tool? How do you produce fact-based information that justifies the investment? How do you encourage user adoption of the new tool?

One approach is to create a priority list of specific use case requirements with a clear definition of done. Similar to Agile development methodologies, the objective is to define a specific set of requirements with limited scope that can be delivered and demonstrated in a short time frame working with a core set of software users. These could be milestones in your implementation schedule as each use case is completed.

Define use cases that directly address the root cause of an issue identified in Step 1 with a measurable return on investment. The software is then configured and implemented to support the requirements. As additional use cases are implemented, more software functionality is engaged to support the larger set of business objectives and requirements.

SOFTWARE IMPLEMENTATION STEPS
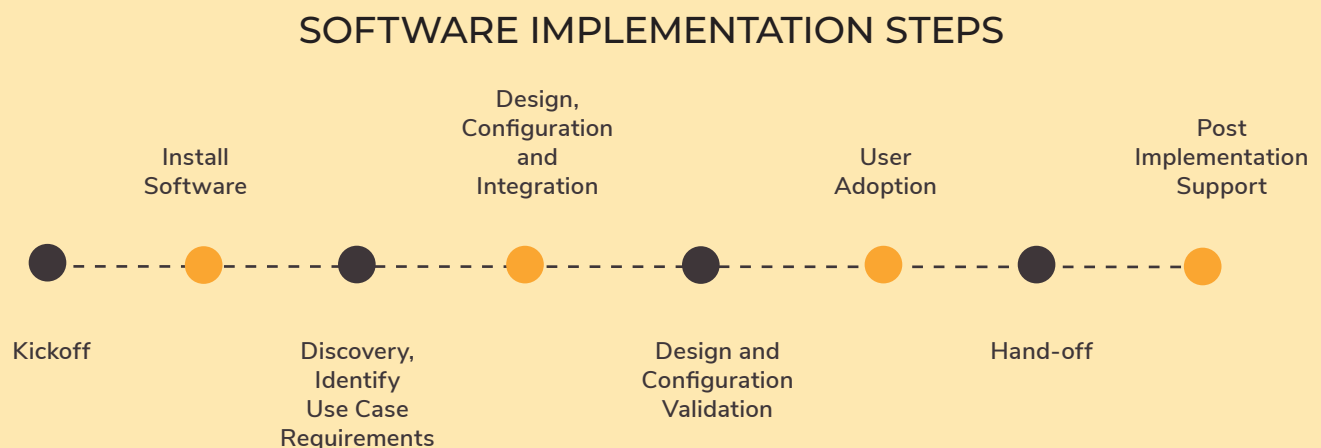
Benefits of this iterative and incremental approach is it reduces the time required to:

- Build a base of core users who know how to use the tool because they were part of the process to define and implement the use cases.

- Set up common core data or a library of templates for a broader base of users.

- Generate specific work instructions so other users can easily learn how to apply the tool for their cost management tasks.

- Identify training needs, produce training materials, and conduct targeted training.

- Discover ways to streamline process and procedures as well as improve the quality of the cost management data.

Steps to Get Started

1 Start with the list of issues, defined root causes, and how you intend to measure results. Identify items with the highest return on investment.

2 Create a priority list of use cases that address specific root causes. These use cases should have a specific scope of work and duration with a clear definition of done.

3 Incrementally implement use cases that can quickly deliver results, reduce risk, and provide fact-based justification to implement the tool.

Call us today to learn more about ProjStream's end-to-end solutions for cost estimating and project execution.

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