Concepts Meet Reality…

Optimizing Capital Through the Use of Project Controllers

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Introduction

In an effort to optimize the deployment of capital, many organizations are increasingly employing controllers for large projects with budgets exceeding $10 million. These essential resources provide the detail-oriented focus required to ensure projects are delivered within the constraints of scheduled completion date, budget, and scope. While project managers are tasked with providing strong vision, leadership, industry knowledge, communication, and negotiation skills, the project controller provides an essential counter-balance by focusing on the details and analytical rigor necessary to ensure the project is on time and within budget.

Controller Value Realization

Controllers perform many important functions throughout the lifecycle of the project, including:

- Developing predictable cost estimates and budget models
- Monitoring budget alignment and correcting spend errors
- Managing scope and the change control process

These activities ensure the validity of the project baseline by first establishing the most accurate baseline possible and then managing against it, thus mitigating possible risks throughout the project.

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Developing Predictable Cost Estimates and Budget Models

Typically, budget is the primary focus of upper-level stakeholders. On large-scale projects the project controller can make a big difference in creating accurate budgets and predicting availability of funds. Submitting a valid budget is key to managing stakeholder expectations and complying with the organization's guidelines for capital stewardship. The practice of padding budgets with large contingencies or allowances to cover potential cost overrun is problematic for a number of reasons, most notably because it violates the organization's desire to optimize capital – specifically why project management strives for precise budgeting. When a project is significantly under budget without a change in scope, suspended capital could have

been better utilized elsewhere. As a basic example, consider a company that averaged 20% budget surpluses across its project portfolio over a five-year period. The organization is not realizing a return on a year's worth of projects during this period. Perhaps other projects could have received funding had better project controls been implemented.

Optimal budget development utilizes subject matter experts (potentially including vendors), historical benchmarks, and a number of other predictive data sources. While the controller is not necessarily the subject matter expert for providing cost estimates, they play a pivotal role in facilitating data collection and validation to ensure reasonable outcomes. Data gathered from this process should be consolidated into a cost model to produce an uncertainty range and confidence interval (e.g. raw materials will cost $121,000 to $167,000, while labor will range from 78 to 96 hours – all with a 90% confidence interval). In this instance, rather than working toward an exact target, the project is managed within a range deemed reasonable by project leadership. Factoring uncertainty into cost estimates need not be a cumbersome process. An effective project controller should be able to develop a right-sized budget model – one that is refined but incorporates a minimal uncertainty range. This commensurate value reduces the uncertainty. For example, on a recent project with a budget of more than $200 million, a project controller was able to improve the budget to actual run rate from a 15% to 3% contingency with a much higher degree of confidence and predictability. The 12% difference allows the company to free up an additional $24 million for use in other areas.

Monitoring Budget Alignment and Correcting Spend Errors

In addition to setting realistic budgets, project controllers perform variance analysis to determine whether budgeted project costs are aligned appropriately with actual expenditures. Typically, variances are due to several contributing factors, including unreliable estimates in the budget, invoice timing issues, work being performed more or less efficiently than expected, misapplied charges, or undocumented changes made to the scope or schedule. As mentioned previously in this paper, project budgets can often include large cost contingencies. Aside from diverting these funds from other objectives, these contingencies can mask misapplied charges for project labor and/or materials.

These extra charges are not uncommon among large capital projects. Typically, they represent mistakes made in accounting for costs. Though some are easy to recognize, far more are difficult (if not impossible) to detect without a detailed, month-to-month focus on spending. It is not uncommon to see 5-10% of the budget eaten by these costs in complex projects, which is where a controller can make a significant impact.

One common occurrence of misapplied charges is inappropriate intercompany and sales tax entries. On a recent large capital project, this accounted for a $2 million variance that was included by the internal tax department and applied to areas they assumed to be taxable. However, the taxable labor costs were already included in the budget.

Over-accruals often are a product of the work breakdown structure (WBS) not being set up properly or an errant system that incorrectly tags entries as taxable. In some circumstances, certain types of labor are not taxable. However, the accounting department will assume these are taxable costs if not separated from taxable types. This illustrates why the project controller role is a critical counterpart to project management.

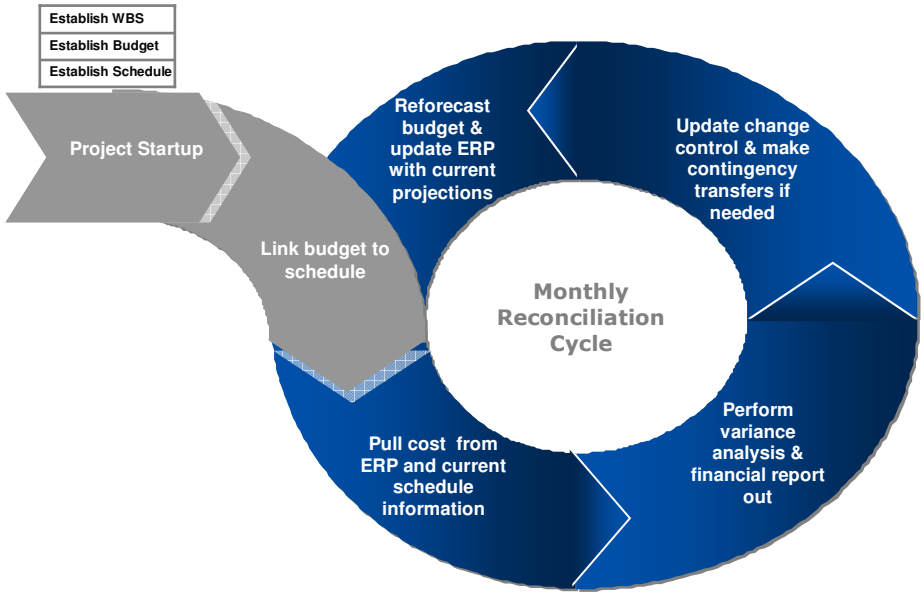

Figure 1: Controller monthly reconciliation cycle

The project controller identifies the reasons for the variances and takes corrective action – including adjustments to or from contingency reserves – to restore validity to the budget **(see figure 1)**. The remaining budget for the project is then allocated across the duration through utilization of integrated schedule and cost tools, while being realigned with the schedule. Finally, revised cash flow projections are generated. The project controller can thus optimize funds for the organization by providing accurate and frequent cash flow projections.

Managing Scope and the Change Control Process
Early in the planning process, the project controller establishes a change control process that defines guidelines, procedures, and mechanisms by which to measure the baseline. Specifically, the change control process ensures that proper reviews of changes to project scope, priorities, and new insights are conducted so that change requests are identified, quantified, documented, and communicated to the appropriate levels of management throughout the project. Impacts to the scheduled completion date, approved budget, and scope – as well as the strategy to minimize these impacts – are analyzed before decisions to accept or reject the proposed changes are made.

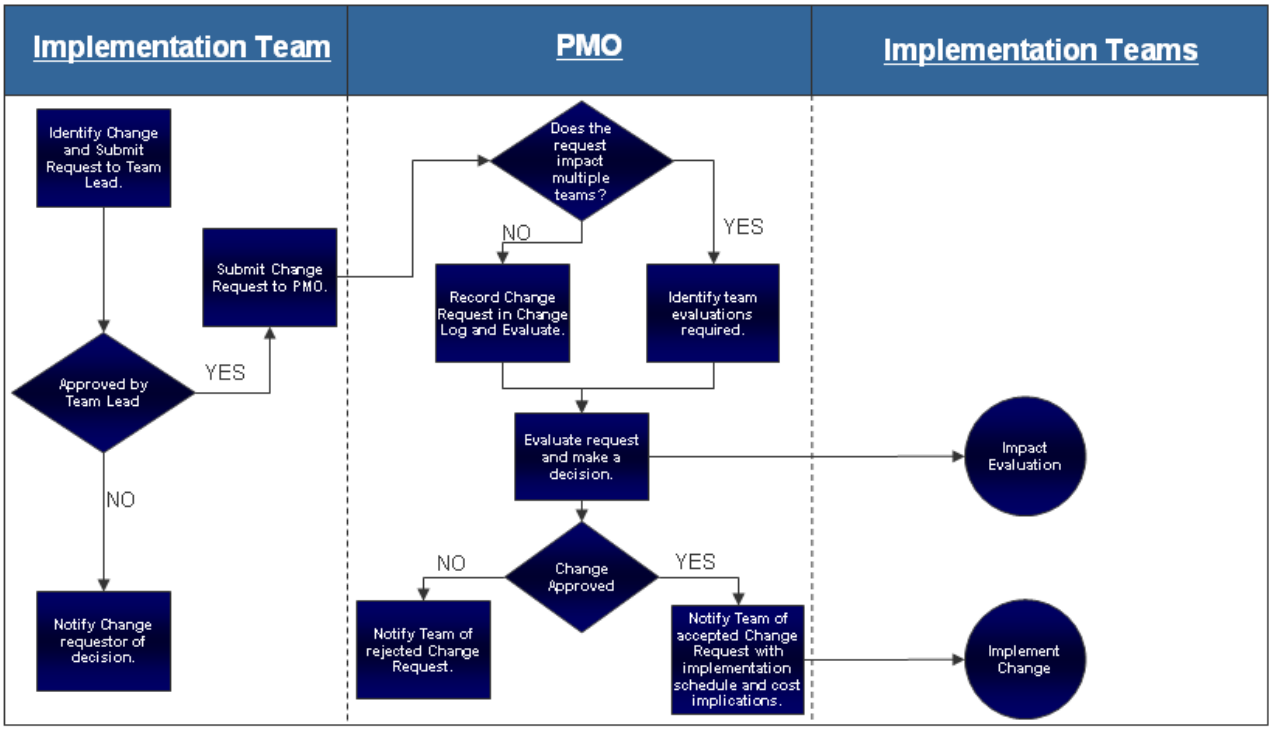

Figure 2: Sample Change Control Process

A controller should be able to record the requested change and usher it through this process. Usually this includes information collected from across the project and potentially the enterprise **(see figure 2)**. However, the scope of any actions depends on the magnitude of the change.

A change control process allows leadership to weigh possible outcomes of their decision before action is taken…

The change control process is critical to preventing scope creep or sharp changes in direction. While nearly all projects begin with a baseline, these changes can quickly render the baseline meaningless. Experience has shown that even small changes can wreak havoc as they go largely unnoticed until they begin to accumulate. For example, prior to the addition of a project controller and formalized change control process, a large energy client experienced a budget increase of more than 125% in a multi-year transformation engagement. The original baseline budget had become obsolete, and the client was required to develop multiple supplemental budgets. Once the project controller came in and established a change control process and documentation procedure, the project became more predictable, with manageable vendor price increases and risks and controlled spending, improving decision-making capabilities.

A change control process allows project leadership to weigh possible outcomes of their decisions *before* action is taken – mitigating potential impacts on the project. The process also serves to validate the project scope, ensuring members stay focused on the same objective. A skilled controller unites members' unique project insight with control of project constraints to optimize the effectiveness of the process.

Conclusion

The project controller offers an invaluable counterpoint to the broad scope of the project lead. The focus a controller provides is instrumental in ensuring the project is in compliance with the capital goals of the organization. This is achieved first by establishing an accurate budget without large contingencies, followed by subsequent monitoring and correcting for changes and actual costs *as* they occur. Stakeholders want to know if the project is progressing or trending as planned, that estimates are reasonably accurate, and whether delivery dates and estimated final costs are likely to change. Controllers can address these concerns.

Organizations are becoming increasingly aware of the value controllers bring, even turning to outside consultants to handle project control functions when expertise is not available internally. An experienced controller can bring the specialized skills and tools necessary to insure optimal capital utilization, improve budgeting precision, and reduce project risks. Integrating external consultant controllers into project teams has the added benefit of bringing the approaches outlined above in-house, thereby increasing the general expertise. Regardless of the source, the controller is a vital component of a well-executed project and should be seriously considered when establishing new project teams.

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