Managing Project Risk Through Success Criteria

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Establishing a Success Criteria

Implementing an enterprise wide project can be an overwhelming assignment. A high level of planning is needed in order to meet the requirements of the organization and realize the business benefits being sought. Each phase of the software development cycle brings its own challenges and requires significant interfacing with vendors, customers and the Information Technology organizations. Proper communications and proactive risk management between the sponsor, stakeholders, and project team members will be critical to a successful endeavor.

Throughout the project's life cycle uncertainties arise that have a tendency to bring about emotional responses. (Virine, Trumper, 2008). Each team member's response and interpretation of uncertainty may even underpin decisions which are in conflict with the business objectives that the project is striving to achieve. According to a VokeStream® market snapshot report, 37% of all software development projects in Fortune 500 companies are abandoned or do not meet the needs of the users but may still be in use. The average project cost is $3.2 million, consumes 1,300 resource months, and lasts 17 months in duration. The cost of software development waste is astonishing, (Lanowitz & Dronzek, 2008, pg. 16).

To enable an organization to objectively and analytically evaluate when a project should be stopped a 'Probability of Success Criteria' with a minimum threshold must be established early on in the project life cycle. The criteria be of a balanced set of risks, which if met, will cause the project to immediately enter into a 'Closing' process or trigger a re-evaluation. The "Probability of Success Criteria" is the vehicle to guide organizations to the decision to terminate projects when the project's business case becomes compromised; thus, ensuring the companies interests are protected and enabling the re-assignment of resources to successful endeavors that create value. Risk can be either a "positive or negative uncertain event or condition that, if it occurs has a positive or a negative effect on at least one project objective", (PMBOK® Guide, pg. 238). This paper only focuses on negative risks. One of the greater challenges with risk identification and mitigation is in the management of people and their attitude towards different levels of uncertainties. Typically, when project objectives become threatened, team members have an inclination to get emotional toward a particular risk or set of risks. This reaction tends to be proportional to the amount of effort individuals have exerted onto a project. If not monitored, this emotional state can bring about decisions based on intuition instead of analytical and factual data. In fact, scientist believe that our reaction to risk was hardwired into our brains in prehistoric times, when people were concerned about judging the danger caused by predators,(Virine, Trumper, 2008, pg. 162). The organization's culture may even enable this emotional behavior by taking 'NO' action to rectify the situation thus putting a project in jeopardy. To be able to objectively plan, manage, and control a project's success criteria the appropriate set of risks and adequate processes must be established and followed.
This paper focuses on establishing a comprehensive set of risk classifications, a protocol to assess risk, and a method to communicate probability of success.

Establishing a Probability of Success Criteria

Probability of Success Criteria

Establishing a probability of success criteria is based on sound risk management fundamentals that are accepted and practiced throughout the project management community. The purpose of risk management is to identify and mitigate risks well before they become issue, (Chrissis, Konard, Shrum, 2006). By taking a proactive approach to managing risks, a project team can decrease the impact and probabilities of negative events and increase the probability and impact of positive events (PMBOK® Guide). In setting the foundation for an effective probability of success criteria, sponsors and stakeholders will need to provide the necessary leadership in creating an environment which fosters the discussion of risks without restraint. The criteria overall management process is comprised of the same components found in project risk management as depicted in Figure 1 which is based on The Standard for Program Management Second Edition: Program Risk Management.

![Figure 1. Risk Management Process](image)

Since risk and probability of success are opposite sides of the same coin, it stands to reason that high risk equates to low probability of success. Given that a low probability of success can be the impetus which triggers a project to enter the 'Closing' process, well-organized planning, organizing, controlling and leading is required. Noteworthy focus will need to be given to the identification of team members that are neither risk averse nor risk takers, the classification of risks and their impact on the business case, and finally the process used in assessing and communicating the risks to the stakeholders.
Use a Scorecard to Measure Success Criteria

Purpose

A probability of success balanced scorecard is a framework which provides a comprehensive view of different categories of risks aligned to the project's probability of success threshold. The probability of success balanced scorecard will layout the specific criterion in support of a project's probability of success threshold. The balanced scorecard will contain views across multiple dimensions such as:

- Scope/Requirements
- Budget
- Schedule
- Resources
- Technical Feasibility
- Adherence to Established Processes
- Business Benefit

Each dimension will include one or more risk, measured throughout the project in order to assess the project's probability of success level at a particular point in time. These assessments will ultimately be gauged against the project's probability of success threshold. The creation of the probability of success criteria is established with a risk based balanced scorecard. As a project advances through the project management life cycle and data is collected the uncertainties or project risks change. Therefore, it is important to realize that a balanced scorecard is a living document and modified throughout the project. As this progression happens the amount of change request to the scorecard may decrease since the number of uncertainties should start to diminish. When modifying the scorecard it is critical to have the appropriate sponsor level support and standard change control procedures in place. Any changes to the scorecard must continue to support the POS threshold. The scorecard will also serve as an effective way to communicate the project's POS to the stakeholders and sponsors.

Scope

As project tasks are completed, expected work products and/or deliverables are produced. The content of these project artifacts are inspected to ensure quality levels. A project artifact of sub-standard quality will have a negative impact on all consumers of that information. For example, a Requirements Specification with significant ambiguity will negatively impact the team members designing and testing the end product. There are many tools and techniques used for measuring phase end deliverables and are usually numerically based. The numerical data can be raw, composite or aggregate in nature. Examples of certain measures can be percentage of requirements volatility,
number of defects, ratio of inaccuracies in documents, (Chrissis, Konard, Shrum, 2006, pg 452). A simple and effective tool to measure the quality of projects artifacts can be through a survey given to the stakeholders. Other effective ways are via inspection of the deliverables by a subject matter expert who is not associated with the project.

The number of change requests should also factor into scope measurement. Change requests are typically driven by unplanned work, new deliverables, and poor requirements gathering to name a few. All of these are forms of scope creep and should be measured.

**Budget**

Project costs are usually incurred well before the project yields any efficiencies, savings, or generates revenue. A probability of success criteria must establish the maximum allowable costs a project can incur without adversely impacting the projects business case or goals. These costs will be a composite of "the sum of conformance plus nonconformance costs " (Schiffauerova & Thomson, 2006). The costs identified in the criteria can be represented as a percentage greater than the project’s baseline costs. As the project progresses through the life cycle, cost estimates are typically refined and the level of accuracy will increase.

As an example, "a project in the initiation phase could have a rough order of magnitude (ROM) estimate in the range of -50 to + 100%. Later in the project as more information is known, estimates should narrow to a range of -10 to +15%" (PMBOK® Guide, pg. 161).

Financials are a great performance indicator since it measures the cost of quality and does not discriminate between negligible or major costs. The majority of companies are able to accurately track and report costs on projects, programs and portfolios. The old cliché "death by a 1000 paper cuts" does not go unnoticed in a financial statement. Effective tools and techniques for measuring costs can be as simple as using an excel spreadsheet to track the projects plan costs to the actual costs.

**Schedule**

Schedule measurement is relatively straightforward. Schedule Performance Index (SPI) functions well as a metric. Historical SPI’s are used to determine when a project is simply in trouble or in danger of not reaching critical objectives.

**Resources**

All projects consume resources. Applying the right resource at the right time is critical to success. Resource key performance indicators such as availability is an obvious metrics. A balanced scorecard must also include other parts of the resource management plan such as skill and experience. In a highly matrixed organization the POS criteria should also consider other critical projects that are competing for the same resources.
Process Adherence

As the project advances through its life cycle it is important to measure and monitor the predictability, effectiveness and control of the endeavor from initiation to closure. To objectively evaluate in process activities, the project team must assess the current process being followed against that of the organizations standards and procedures, (Chrissis, Konard, Shrum, 2006, pg 427 - 437). As uncertainties are raised and risks are identified a root cause analysis will need to be performed on the potential impacts to achieving the project’s goals. Careful attention needs to be placed on the project performance during the execution process group since most of the work is conducted during this time. The In-Process activities of the probability of success criteria are geared towards measuring the quality of the overall execution of the project management plan. If the quality of the process is at sufficient level based on the customer’s perspective; the work product produced should in-turn be at sufficient level (George, Rowlands, Kastle, 2004). The cost and schedule performance indicators of Earned Value Management can be an effective way to track progress against timelines and costs by comparing planned work to actual work, (PMBOK® Guide). Change control procedures are also needed to support tracking in-process activities. Other effective ways to perform process evaluations are through formal audits, stage gate reviews, and/or peer reviews.

Business Benefit

The business case should be reviewed at multiple points in the project life cycle to ensure that the project justification is still valid and that the project will deliver the solution to the business need. At a minimum this review should happen as the project moves from 1 process group to the next and with every change request.

The result of a review may trigger the closeout process. The business case may also be subject to amendment if the review concludes that the business need has changed.

Conclusion

The balanced scorecard is a management tool designed to align the organizations activities to the vision and strategy of the organization. It also improves internal and external communications, and is a tool to monitor organizational performance against goals. As a project performance measurement tool, the balanced scorecard is used to provide management and executives a 'balanced' view of the projects probability of success. Establishing a probability of success floor will help to remove the emotional response to high risk project situations.

Basing a probability of success score on well established risk management practices, the project team can increase the project’s probability of success. Furthermore, the
realistic view of the project depicted by the probability of success and the thresholds set early in the project, enable the organization to objectively and analytically evaluate when a project should be stopped.