



Change Management

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Abstract

Change Management and dealing with changes is a key project management function for any industry. There might be enormous variance in efforts, cost, schedule, quality of deliverables if changes are not handled effectively. Many projects are delayed and many other are closed (terminated) because project managers were not able to manage changes.

Introduction

Change management and dealing of with scope or requirements change is an importance function of project managers. However clear the requirements are, whatever the tool used for documenting requirements (right from Rational tools to Word document) and whatever the category of execution model (Pure Waterfall to evolutionary prototype) requirements are bound to change. The only difference to change is to what extent, and what is the impact on project success or failure. Having said this successful execution of any project relies on how good and effective is your change management mechanism.

This is the reason why Monitoring and Controlling Process Group (Section 3.2.4 of PMP handbook) is such an important section.

Why Requirements Change?

There are a number of reasons for change in requirements and these reasons depend on multiple factors like:

- Industry: Is the project related to Automotive or Aerospace or Jewellery
- Geography : APAC customers are precise in their requirements compared to US or European Customers (Based on the project execution experience I have on multiple engagements)
- Customers: Customers maturity
- Implementers: Experience of implanters with the same customer or similar customers or projects
- Execution Model: Fixed Price project executions model demands requirements to be crystal clear. So efforts taken on such projects to control scope are more compared to Time and Material or other models.

But whatever the reasons, the result is the same “Customer Dissatisfaction” or “Project Failure” in terms of:

- Schedule Variance: Failed to meet committed deadlines
- Cost Variance: Customer paying for changes or implementers bearing the cost impact affecting their bottom line.
- Quality: Not able to meet desired quality goals or metrics

Although there can be number of other reasons this paper will limit its scope to IT projects (more inclined to product implementations to meet customer needs)

Considering this scope I will consider few major reasons of requirement changes:

Customers:

Customers new to the Digital World

Customers who are mostly moving from a manual system to a digital systems (Example: Product Life Cycle Management (or Product Data Management) systems like MatrixOne from Dassault Systems or TeamCenter Engineering from Siemens or PDMLink from PTC) .

These customers normally fail to understand that their entire process cannot be replicated in the new systems. If you are developing new inbuilt system for your own business transactions then you can fine tune the system as per your requirements. But if you are using some product for your business process mappings there are few critical decisions they have to take to define a solution. Customers have to

- Follow process defined by basic product (Out Of the Box – OOTB features). You may need to change some of your processes.
 - Maybe you may have an Engineering Change Request (ECR) process coupled with Engineering Change Order process (ECO). If OOTB product is providing a separate ECR and ECO process, and it has some benefits, you should explore the option of revising your Change Management process framework.
- Change OOTB process to fine tune their requirements (Configure or Customize the product).
 - Your ECO process may have different workflow compared to OOTB product process. This means you need to configure or customize the product.
- Change product process as per your own process (Heavily customize the product. Sometimes this is over kill)
 - Your existing change management process does not match to OOTB process so you may have to develop a separate module to overcome this process gap.

These customers sometimes fail to map their requirements. Some customers we have seen instruct System Integrators (SI's) / development team to exactly replicate the manual system without understanding the benefits of new system. Such projects are a nightmare for project managers as requirements keep on changing slowly as they realize these issues at a later stage of execution. Issues such as:

- Technical issues on implementation
- Realize product features and related benefits after some time
- Performance issues due to heavy customizations,

We need to be extra cautious to deal with such categories of customers and some of the steps to avoid such problems can be:

- Document the manual system
- Features demonstration of new system if it's a product with key end users and IT staff to get their buy in on OOTB features.
- Gap Analysis (What they want and what new system can give)
- Convince them for some of the gaps where they need to fine tune their process in terms of efforts required for development and maintenance, performance, technical limitations. (with reference to best practices followed in industry)
- Develop a prototype solution and get a feedback

- Preferable follow an “Evolution Prototype” model for project execution where you get a set of requirements, develop, implement, test, get user feedback, refine solution and then define new sets of requirements. *Avoid following RAD (Rapid Application Development) model. It’s a big risk unless you know your customer well.*

Matured Customers

These set of customers are those who have already gone through one cycle of digital systems and know the benefits of new systems. Also they understand possible hurdles for these projects. Few of them understand the importance of requirements and its documentation but feel that with the knowledge they have on past systems they can cut short the requirements phase to save efforts or cost. They fail to realize that each implementation is new and goes through a number of iterations / phases. Some examples are customers moving from in house system or legacy systems (like Mainframe) to some new system like PLM or ERP system (like SAP or Oracle Manufacturing).

There can be substantial scope for change in requirements for such customers because:

- Very high expectation from new system.
- Approach taken while defining requirements (during Scope Planning section 5.1 and Scope Definition Section 5,2 of PMBOK) to compare problems they have faced while moving from manual systems to digital systems. They expect to resolve all problems faced during their earlier implementation without understanding the real caused of these problems.
- Sometimes customers think that implementers can understand their language based on the last experience so most of the requirements are defined on high level, we call these “Single Line Requirements”
- Sometimes they give less importance to the “Requirements Phase” and try to cut short this phase by defining very high level requirements or passing their own existing requirements documentation from earlier implementation.

Implementers

Below are possible problems faced by implementers. Unfortunately for most of them, they themselves are responsible

- Implementers (if they are part of the past few implementations for the same customer) think that they know the customer so well that there is no need to have a detailed customer requirements phase or documentation. In fact sometimes they get to bid against their competitors as they calculate the cost of requirements phase is very low. Maybe it’s a good selling point but should not be done at the cost of reducing the requirements phase which is most critical for successful project execution.
- Some of them have the approach to follow the old system which the customer is already familiar with so do not want to explore the benefits of a new system or new product released version.
- Sometimes they get carried away with the relationship one set of users.
- Few implementers want to make the customers unhappy so they follow what the customers suggest.

Geography:

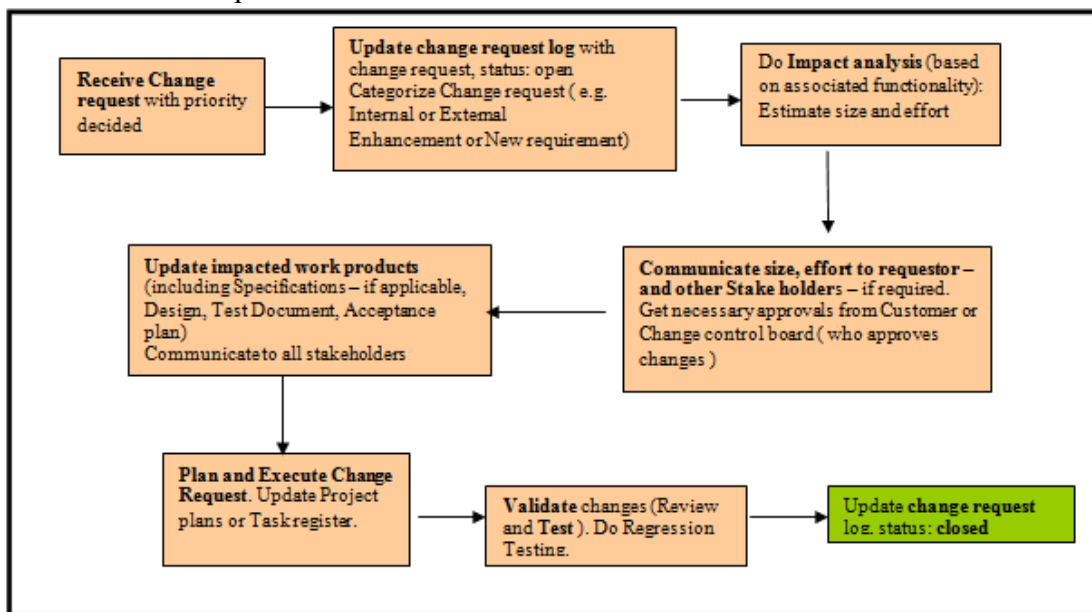
Some of the issues related to change management are because of geography or language barriers:

- Translators not able to document requirements effectively. For example translators take requirements from a Japanese end users but not able to document them as exact requirements
- Implementers failed to realize that although they are doing exactly similar implementations for the organisation in other country they are dealing with a totally different set of users.
- Technical limitations because of geography

How to manage change?

We can achieve better Scope management by following some basic steps.

- Define and understand the (Customer and Implementer) Change Management framework when you define a project Charter (Section 4.1 of PMP BOK) or before you sign a contract with the customer. In the ideal scenario change management should be part of your Statement of Work (SOW) or Master Service Agreement (MSA). Below is one such example of Change Management Workflow. This workflow can change based on the Customer and the Implementer



Change Request Workflow

- Freeze requirements or Scope before start of engagement.
- Define mechanism to identify and track changes:
 - All changes whether Internal or External regardless of they have effort or schedule impact should be documented

Type of Change

Internal Changes : These are the changes not suggested by the customer and may or may not need customer acceptance but they are required because of some new methodology or approach.

For example while estimating efforts we have not considered usage of tool like productivity improvement tools or technical tools for data migration or upgrade. These tools might have reduced efforts on the project but they should be tracked to ensure proper control of the projects.

External Changes: These are the changes which a good project manager would normally track if there is an impact on effort or schedule. But track the changes even if there is no change in effort or schedule or even there is positive impact on efforts (Efforts Savings)

Category of change: Categorize the changes as:

- Enhancements (or Bug fixes in some cases)
 - New Requirement
 - Scope Change
 - Technical Limitation
 - Any Other Category as per project type
- Follow Change Management workflow guidelines for approval or rejection of change request.
 - Do Impact Analysis for potential change requests and communicate the results to the Change Management Control Board (CCB) and end customer.
 - For major change requests it is preferable to develop a Proof Of Concept (POC) and understand impact / get end user buy in.
 - Define effective version control system (and Release Management) to track and control changes.

There will certainly be a few additional steps based on the nature of engagement and the type of customer. If we take care of these basic steps we can avoid some of the impact of “Requirement Changes”. It is though a herculean task to avoid changes in products or systems even if the scope is frozen before the start of the development phase.

Summary

Change Management plays a key role in the success of a project. All Project Managers should have a definite strategy for handling changes before initiating any project. Effective Change Management methodology can keep scope, efforts, cost and quality under control

About the Author

Manoj Deshmukh has engaged in the management of several offshore and onshore projects as a Project / Delivery Manager/ Delivery Head. Manoj is a PMP certified

Project Manager with around 15 years of experience in Engineering and Project Management. He has managed many projects / programs across the globe in US, UK, Europe, APAC. He has managed a number of different project types including Product Development / Services, T & M / Fixed Price.

He is BE (Mech), Post Graduate Diploma in Business Management, Post Graduate Diploma in Software Engineering and has extensive experience in the Automotive domain and IT.

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