

# Project Management Framework in Information Technology

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*Abstract*— Project Management Framework provides a centralized management of processes, methods and technologies employed by Project Managers and Engineers to research and jointly manage proposed, planned and current projects based on various key characteristics. The objectives of project management framework are to achieve the optimum resource combination for delivery and to plan jobs to best succeed at organizations operational and monetary objectives, while abiding customer's limitations, strategic goals and outer real-world factors.

**Key words:** Project Management, Project Portfolio, Project Lifecycle

## I. INTRODUCTION

Businesses should answer quickly to unsteady markets and altering project and program conditions, while encountering the requirement for visibility and actionable data covering various project groups across an organization. Project management framework allows project-driven organizations to judiciously handle the projects and programs – covering small and simple to large and sophisticated.

Project management framework is a progressively utilized, tool-supported method for choosing projects and handling the project portfolio with an aim of making most worth for the organization. Accomplishing Project management framework needs establishing administration and responsibility, new methods for data collection, and formal strategies for project and portfolio evaluation. It must also have key element which is aware of a way to determine the most effective outcomes.

The merits experienced by project management framework users include gains in performance, cost savings, innovation, productivity, project information, risk management, change management, forecasting, performance evaluation, accountability, consistency and efficiency, transparency in decision making, stakeholder confidence and workload balancing.

Project management framework drives better portfolio management decision by making available the end-to-end, real-time clarity to all relevant data. Project management framework in addition also facilitate the organizations to evaluate the risks and rewards related to projects and programs by furnishing project management, collaboration and administering capabilities required to manage modifications and successfully deliver projects on time, within budget and with planned design and quality.

## II. PROJECT PORTFOLIO MANAGEMENT

The aim of project based organizations is to speculate within the very best set of outcomes and invest in the best possible set of projects. The “best” portfolio is the one that is anticipated to come up with the most value, taking risk into consideration.

In Project management framework, projects are observed and the projects which are performing below

expectations can be brought to an end, so that the resources may be utilized for new or other existing projects. Projects may perform below expectations due to various reasons such as cost overruns, benefit erosion or change in needs.

In case of both financial investing and project investing, the key to triumph is to make sound and superior decisions, and the best way to attain that is through a disciplined, well-reasoned, decision-making logic.

The frameworks available to support project management vary considerably in their capabilities. However, a standard capability common to all frameworks is to gather and arrange the information about proposed and ongoing projects in a centralized database. The information stored also can vary considerably depending on the requirements of the organizations. Some of the stored sample data include: project names, objectives, scope, resource needs, timelines, reports, cost etc.

It also provides the managers and executives a bird's eye view of all the projects, resources and costs, enabling easier mechanisms to detect inefficiencies in the project portfolio via reporting and graphing capabilities. It also provides the ability to quickly and easily assess, review and compare the project funding decisions and other key financial and business decisions that the organization should make.

It embraces models for estimating project performance and logic for recommending projects and programs. Beyond the basics the frameworks differ considerably. Some are designed specifically for the use by organizations in specific industries and others are general purpose. Project management frameworks differ in their functionality and the degree to which they support project management and resource assignment. Most of the frameworks employ simplistic, unreliable strategies for prioritizing the projects. Whereas few of the frameworks employ strategies as rigorous as those habitually used for financial investing for evaluating projects, assessing project and portfolio risk and optimizing the project portfolio.

## III. PROJECT MANAGEMENT CHALLENGES

Large organizations require well-defined and effective IT-Governance. Project management is a critical governance capability that addresses below challenges:

- Balancing demand from varying sets of business customers
- Maintaining alignment with overall business objectives
- Delivering global stability while providing localized value
- Delivering value within exacting financial and resource constraints

#### IV. NEED FOR PROJECT MANAGEMENT FRAMEWORK

Project management framework provides numerous benefits which affect all functional areas of an organization and include:

- Identification of functional responsibilities so as to make sure of all activities are accounted for, irrespective of personal turnover
- Encouraging continuous enhancements and documentation of best practices
- Identifying the time limits and risks
- Identifying trade-off analysis methods
- Measuring the accomplishments in reference to baseline plans
- Early problem and risk identification enabling appropriate corrective actions
- Improved forecasting ability for future planning
- Capability to determine the inability to meet the objectives
- Ability to increase efficiency in terms of both work and cost
- Increased profitability due to the increased efficiency
- Early identification of scope changes and its effect on the project and in turn organization
- Ability to increase organizational stability
- Ability to enhance quality
- Ability to reduce authorization issues

#### V. PROJECT MANAGEMENT PARTICIPANTS

Project management framework is for organizations with large number of investments, and with a need of enhanced governance or execution. It is generally the concern of three groups of people:

- Executives – includes executives and portfolio managers who are responsible to set strategy and direct the organization to meet its objectives. The main tasks of executives include :
  - Vision, Mission and Strategy
  - Demand management
  - Portfolio selection
  - Capacity planning
  - Portfolio reporting
- Managers – includes resource managers, product managers and project managers who are responsible for planning and successful execution of projects and programs. The main tasks of managers include :
  - Resource management
  - Financial management
  - Project prioritization
  - Project reporting
  - Project scheduling
  - Program management
  - Performance tracking
- Project Teams – includes engineers and other set of people who are assigned to a project and are responsible to perform tasks and yield deliverables. The main tasks of teams include :
  - Requirement assessment
  - Project proposals

- Project deliverables
- Time reporting
- Team collaboration

#### VI. PROJECT MANAGEMENT LIFECYCLE

Alignment is the eventual goal of business governance. That is allocating the proper resources to the project activities at the proper time. When resource allocations are made, an organization's strategy, operational structure, execution process and technical expertise are all evaluated. Resource allocation decisions impact portfolios, programs and projects. Accordingly, a systematic approach to collect, select, plan and manage them is the key to high-quality IT Governance method.

Portfolios, programs, projects and processes all share a common lifecycle, which are formed around four key project management phases:



Fig. 1: Project Management Lifecycle

##### A. Create:

Create phase encompasses actions for defining strategic goals, metrics and work demand intake. The pertinent core processes in this phase are:

- Demand management
- Portfolio reporting
- Team collaboration
- Program management

Key benefits and capabilities are:

- Capture all requests, from work orders to discretionary projects
- Standardize metrics, valuation criteria and templates
- Control investment through governance workflow

##### B. Select:

As soon as the project portfolio inventory has been formed in create lifecycle phase, it moves on to select phase, which includes all activities related to go/no-go decision-making and the prioritization of requested programs and projects. The pertinent core processes in this phase are:

- Portfolio selection
- Financial management
- Team collaboration
- Program management
- Portfolio reporting

Key benefits and capabilities are:

- Objectively prioritize business drivers and drive consensus
- Derive varying priority scores to evaluate competing investments
- Identify portfolios that align with strategy and maximize ROI
- Adopt a rational rather than emotional portfolio selection methodology
- Utilize advanced portfolio analytical techniques to reach the efficient frontier

### C. Plan:

Plan phase includes activities to both plan and also perform resource assignment. This can be viewed from two perspectives – a portfolio perspective and a project perspective. In a portfolio perspective activities in Plan phase revolves around overall capacity planning and project portfolio delivery schedule maintenance. In a project perspective activities in Plan phase includes detailed project planning and allocation of named resources to the project. The pertinent core processes in this phase are:

- Capacity planning
- Resource management
- Team collaboration
- Portfolio reporting
- Project scheduling
- Financial management
- Program management
- Project reporting

Key benefits and capabilities are:

- Identify gaps between overall resource availability and demand at the skill level
- Finalize and release roadmap and headcount requirements to maximize resource utilization
- Search for team members with availability and assign to project
- Finalize plan and baseline moving into execution

### D. Manage:

Manage phase includes activities supporting the delivery of projects and tracking the project progress. Quality delivery of projects is measured by project's performance in delivering on scope, within budget and on schedule. Project tracking is focused on monitoring forecasted divergence from planned scope, budget and schedule. The pertinent core processes in this phase are:

- Resource management
- Project scheduling
- Financial management
- Time reporting
- Portfolio reporting
- Project reporting
- Team collaboration
- Program management

Key benefits and capabilities are:

- Collaborate to effectively deliver selected projects
- Proactively monitor portfolio performance and visualize trends
- Drill down to the project level for assessing risks, issues and status
- Track and compare budget, actual and forecast values and make corrective actions to improve project performance
- Re-optimize the portfolio to maintain alignment with business strategy

This simple framework can serve as a foundation for evaluating and improvising governance parties. Organization-wide adoption of this 'Create-Select-Plan-Manage' lifecycle leads to consistent definition and common understanding of its underlying core processes:

### E. Demand Management:

It begins with normal ways and structure capturing all tasks starting from simple support or change requests to large and complicated projects and programs. It conjointly includes the definition of workflow for appropriate categorization, analysis and characterization of the job request.

### F. Portfolio Selection:

It is a method of evaluating a portfolio of project requests, prioritizing them and either approve or reject those requests. To work out the most effective combination of projects, portfolio managers ought to use multiple criteria and analyses, as well as strategic, monetary and risk. A portfolio selection that maximizes the portfolio's value within the given budget and resource constraints is regarded as optimized.

### G. Capacity Planning:

It is a continuous method of assessing an organization's resources and performance to decide its capability for work production. It comprises of setting of utilization targets for defined sets of people and includes a set of project metrics for better understanding of productivity and utilization target adjustment. Proactive capacity planning enables organizations to finalize the project roadmap with maximum resource utilization.

### H. Resource Management:

It is all about allocation of resources to projects and tasks. Resources can be manpower, money, equipment, facilities, materials, information, technology or any company assets. Resource management in a large organization involves shuffling of resources to fulfil the demands of projects.

### I. Financial Management:

Financial management can exist both at project as well as portfolio levels. At the project level it involves the estimation of project costs and benefits, and tracking expenditures incurred by the projects against the planned project budget. At the portfolio level it focuses majorly on gaining visibility into spent budget and tracking overall project portfolio budget.

### J. Project Scheduling:

It involves developing project schedules, defining repeatable best practice efforts which enable reinforcing efforts to understand project interdependencies.

### K. Time Reporting:

It involves defining process and structures for individual report on the time spent on projects and tasks by the resources, which can be fed as the information to the project and portfolio reporting to provide better visibility to actual work progress, current work status and remaining work.

### L. Team Collaboration:

It involves structured information sharing supporting knowledge sharing, change management, communicating schedule milestones, issues and risks management.

### M. Portfolio Reporting:

It enables visibility of project portfolio to executives and managers. It provides sound decision making with operational efficiency. It minimizes the inefficiencies,

conflicts and miscommunication between various executives and managers of the organization.

*N. Project Reporting:*

It ensures consistent project tracking and effective communication of project objectives, scope and status.

*O. Program Management:*

It can be viewed as managing large initiatives comprising of multiple projects. Programs must be aligned with an organization's strategy.

## VII. CONCLUSION

The main goal of this paper is to introduce and explain the need, benefits and lifecycle of Project Management Framework in Information Technology. The Project management framework has very much importance for an organization's success and growth. Organizations that do not implement the project management framework may have to suffer in terms of resources, time and money. Project management framework helps the organizations utilize its resources efficiently and minimize the costs. It has the power to drive a project and project driven organization to success, therefore every organization must think about implementing it.

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