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by Don Jones, Series Editor

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Don Jones

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Top Five IT Project Management Challenges and How to Solve Them

Information technology (IT) operations are comprised of complex, multifaceted business processes. These can range from managing Help desks and responding to troubleshooting requests to managing a portfolio of strategic applications. Keeping these IT operations running smoothly requires significant coordination and communication. Project management practices and tools have evolved over the past several decades to address some of the challenges facing IT project managers and IT professionals in general. The top challenges include:

- Managing distributed and matrix managed teams
- Issue tracking
- Resource management
- Prioritization
- Synchronization

An inability to address any one of these challenges can potentially hamper IT operations and mismanagement of several of these needs can lead to increased operation and development costs, delays in service and product delivery, and an inability to respond to changing business conditions and demands. Project management tools can help to address all of these challenges, but it is first important to understand how these issues map to key requirements for project management applications.

Managing Distributed and Matrix Managed Teams

IT project teams are often structured differently than other business units. Hierarchical organizations are typical for ongoing operations. The finance office, for example, may be headed by a Chief Financial Officer (CFO) who oversees the usual back-office operations, such as accounts receivable, accounts payable, inventory, etc. Each of these may be further subdivided into groups with team leaders and managers reporting up a hierarchical management structure. This reporting structure is relatively stable over time and changes infrequently. It is also unlike a typical IT project team.

IT projects teams are created to address ongoing needs, such as information security management, or temporary requirements, such as developing and deploying new functionality for an enterprise application. In both cases, teams can require multiple skill sets. A security team will probably draw from network administrators, systems managers, developers, and IT executives. Software development teams will include software engineers, database administrators, and systems managers. IT departments are often organized around function, so team members are drawn from different management groups.

When organizations create teams with members drawn from different parts of the organization, they create a project management challenge: team members typically report to different managers. This situation can create obvious problems. Imagine if one team member is instructed by her manager to prioritize her work in one way while another team member receives incompatible instructions from his manager. The lack of coordination will hinder the ability of the team to meet its responsibilities.

The matrix management structure is used to avoid this kind of conflict. Within a matrix structure, employees report to a manager of their permanent group while working under the direction of project managers for short-term assignments. Project managers and group managers must have clear lines of communication and the means to resolve conflicting requirements for this structure to work.

Key Requirement for Project Management Tool

Project management tools must support communication across organizational boundaries. All managers must have insight into the project's process and progress.

Issue Tracking

It is convenient to think of development operations as different from support services. Developers focus on mapping business requirements into software that meets those needs. The process can entail discussing and refining detailed requirements, evaluating implementation options, and testing performance characteristics of code. Developers can work for weeks or months on the same development task before moving onto another project. Support work is different. Issues, such as bugs or unavailable applications, may need immediate response. Developers cannot plan for specific events but over time and with enough historical data, they can anticipate the number and types of issues that will arise in a given time period.

In many situations, the same staff that is responsible for development is also responsible for some support services. This reality is a challenge for project managers. A project manager might create a well-thought-through plan with carefully balanced resource allocations and ordered steps that meet dependency requirements. If that plan does not account for the possibility that one or more of the developers on the team will need to do support work, then the plan could be seriously flawed.

Project managers should not just manage the tasks they are in control of; they need to accommodate events that are outside the scope of their project but have a direct impact on team members. Issue tracking and responding to support services is one type of extra-project event that has to be addressed in project planning. Of course, project managers can't predict when a specific bug will occur or when an application will crash. They can, however, collect data on these incidents and use that to make reasonable estimates about the frequency and duration of non-project issues.

Key Requirement for Project Management Tool

Project managers must understand the scope and impact of operations issues on development. Project management tools should help issue tracking within the context of development projects for efficient resolution.

Resource Management

Resource management is closely related to the issue tracking challenge. In the case of resource management, the focus is on balancing the responsibilities of team members. In the case of issue tracking, the focus is on work that needs to be performed.

Project team members will have different kinds of workloads. Some might be dedicated to a single project while others will work on multiple projects at once. There might also be times where one project will demand someone's full attention while at other times the project may only need a small amount of the developer's time.

Consider a hypothetical workload for a software developer:

- Work with application architect to refine implementation plan for Project 1
- Mentor new team member on code management practices for Project 1
- Review test results for Project 2
- Work with systems administrators to deploy server cluster for Project 2
- Resolve bug with deployed application

In this scenario, the developer has responsibilities for two ongoing development projects as well as support responsibilities for a third, already-deployed application. This developer could be reporting to two project managers, an application manager, and an IT department manager. If you were one of those project managers, you would know about this person's responsibilities to your project but how would you know about the other responsibilities? Different team members will have different development and maintenance responsibilities.

Key Requirement for Project Management Tool

Project manager should have a unified view of personnel resources. This functionality includes the ability to view responsibilities outside the scope of a single project.

Prioritization

IT departments typically need to support a portfolio of projects. These projects can span a wide range of business and technical characteristics. For example, a midsize company might have a project portfolio that includes:

- Developing a customer self-service application
- Modifying a customer relationship management (CRM) system
- Creating a new set of compliance reporting procedures
- Upgrading data center networking equipment
- Expanding the scope of an existing business intelligence platform

Each of these projects will have advocates who understand the benefit of the project to the organization. Those advocates will likely have a deep understanding of a project's benefits, risks, and implementation details. Unfortunately, they might not have an adequate view of other projects within the portfolio. This shortcoming can lead to misunderstandings about priorities as well as costly mistakes in decision making because of a lack of information.

In order to optimize the way organizations manage a portfolio of projects, they need comprehensive information about resources and projects. For example, developers might need to support multiple projects at once. How should their time be divided between those projects? The answer to that question will depend on multiple factors, including the developer's skill set, the ability to coordinate with schedules with other team members, and the availability of other resources, such as development tools and workstations.

In addition to coordinating resources, IT managers and executives have to contend with the fact that there might be more projects in the portfolio than can be developed at once. When this occurs, management will need to prioritize development based on some objective criteria, such as a scorecard approach. A scorecard specifies criteria for evaluating projects. These criteria often include both financial and non-financial criteria:

- Cost of project development and implementation
- Expected return on investment (ROI) over time
- Contribution to strategic initiatives
- Potential risks and likelihood of success
- Timeliness

A number of multi-criteria analysis methods have been proposed and some are incorporated into project management tools.

When prioritizing, IT managers and executives also need to consider constraints and dependencies between projects. For example, one project might be ranked low-priority on its own, but if it is a necessary precursor to a high-priority project, then that low ranking will change.

Key Requirement for Project Management Tool

The tools should provide a portfolio-based view of all projects and priorities; it should include the ability to perform some form of multi-criteria scorecard analysis.

Synchronization

Business is dynamic. At any point in time, the assumptions underlying a project management strategy can change. For example, suppose a new software as a service (SaaS) offering provides the same functionality that is expected from an application under development; should you continue with your development effort or switch? The answer will depend upon several factors, including how well the service matches your requirements, the viability of the company offering the services, the state of development, and so on. In other cases, it might be the business requirements that change. Analysts might change the way they evaluate the effectiveness of marketing campaigns and this in turn changes the types of data and analysis reports they require from a business intelligence system.

Changes in requirements can range from relatively small modifications in program functionality to more significant alterations in the course of a project. Requirements changes can have ripple effects that influence how you manage other projects as well. To keep projects synchronized, it is important to have a project management tool that supports coordination across all your projects.

Key Requirement for Project Management Tool

Project management tools should allow for managing changing resource demands across multiple projects.

Summary

IT project managers face a range of challenges. Fixed, organizational structures do not always align with the way organizations create and manage project teams. Developers, systems managers, database administrators, and other IT professionals often have both development and support responsibilities that are difficult to manage. Managers also need to be aware of organization-level management considerations such as resource management, portfolio prioritization, and project synchronization.

Project management tools can help address these challenges. Two overarching requirements are the ability to provide a consolidated view of project activities and resource availability and support for communication and coordination between project managers. With those requirements met, project managers will have support for meeting the challenges outlined here.