Control and Governance of Multi-dimensional IT Projects

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Abstract: - Corporations today embrace formal strategies and technologies for managing IT projects. Even small or secondary projects must be formally tracked as they tend to be part of larger operational plan, where activities are dependent upon the completed projects. In recent years, it has become the practice of Multi-dimensional IT Project Control and Governance (MITPCG) that has evolved as the standard project management methodology. By definition, companies are involved in MITPCG when having to manage many levels and facets of IT components in order to achieve desired goal. The paper discusses the evolution, methods and resulting problems that emanate from Multi-dimensional Project Control and Governance as well as a conclusive answer to those issues..

Key-Words: - Information technology, project management, control, governance, multi-dimensional projects

1 Introduction

Corporations today embrace formal strategies and technologies for managing IT projects. Even small or secondary projects must be formally tracked as they tend to be part of larger operational plan, where activities are dependent upon the completed projects. As corporations grow, IT project become more numerous, and typically employees must serve on multiple project teams. Additionally, IT projects tend to encompass several participants from different departments or divisions within the organization, and often must also include contractors and vendors from outside the company.

From the corporate and divisional planning perspective, every new IT plan results in a new IT project; every new event means managing multiple projects affecting multiple divisions, participants, documents and budgets. These layers of projects, subprojects and assignments encompass various activities, resources and locations.

These events and plans require each component to be resourcefully and comprehensively managed, and also require proper prioritization, accountability and communication throughout. There must be assurances that deadlines are met, resources are allocated and optimized wisely, bottlenecks are identified and risk of project failure is mitigated.

The shift towards project complexity and its associated 'interlocking parts' has occurred as demands for corporate IT efficiency and downsizing have risen, placing even more focus and pressure on IT project governance, resource control and optimization [1]. Given that such multi-level and compounded environments must be included within IT project management, it has become the practice of Multi-dimensional IT Project Control and Governance (MITPCG) that has evolved as the standard project management methodology.

By definition, companies are involved in MITPCG when having to manage many levels and facets of IT components in order to achieve desired goal. The many dimensions within corporate IT projects include information assets, risks, documents, internal and external resources, budgets, departments, schedules and activities. Each of those components must be associated with one another under the overall project umbrella, necessitated by strategic, tactical and operational view across all projects within the enterprise.

On the other side, organizations are multi-project systems themselves that must remain organic in order to be flexible and adapt to all circumstances [2]. Day-to-day operations by default consist of complex, multi-layered projects which, unless managed by proper technology and tools in a comprehensive and proficient manner, could curtail and degenerate a company's expected performance and gains.

The paper discusses the evolution, methods and resulting problems that emanate from Multi-dimensional Project Control and Governance as well as a conclusive answer to those issues.

2 The Evolution to MITPCG

Although 'project management', in its most derivative form, would have been practiced for centuries as a natural organizational method, formal Project

Management developed from basic business management practices in the early 1900s. It has been adopted in the area of IT management in the 1970s. As analyses of these new methodologies were reported, it was found that overall business improvements could be made through compartmentalizing and measuring each element of a project.

As theory of science continued to be applied to IT project management and adaptations were made to competitive influences and modern technologies, project management became more multi-faceted and dynamic in nature. In order for enterprises to continue cost-effective practices, it became conventional wisdom that integration of all of corporate dimensions were essential for successful IT project management.

By the 1990s, while multi-dimensional IT projects touched every part of the enterprise, surveys concluded that the most valuable asset and greatest liability lie in the participants' knowledge and business processes [3]. The needed processes to tie together disparate locations, a non-finite team and multiple disciplines or departments did not, and still do not, for most parts, exist.

In addition, neither the evolution of technology not the Internet did anything to advance IT project management software beyond the digitalization of the paper graph made available for faster distribution; no real-time interactive IT project management technology was present that could meet the needs of multi-dimensional project requirements.

Only by empowering project participants with the suitable means of integrating workflow processes that transcended departments and divisions, functions, activities and locations would MITPCG ensure that objectives would be met in a timely and cost-effective manner.

3   Some Details of MITPCG Methodology

The basic premise of any type of IT project management is to utilize an organizational method so that the full life cycle of any initiative is governed from inception to completion, on time, within budget, and with all functions achieved.

Fundamental components of any IT project management include planning, implementation and defining egresses while capturing and scheduling all resources, activities and transactions associated with the project. Factors contributing to successful IT project management include:

- Organization – Optimization of IT project resource including noted roles, rights and responsibilities; effective team organization accompanied by advanced methods of communication;
- Prioritization – Aligning IT project initiatives with strategic goals of the business;
- Process – Utilizing reusable and repeatable processes that are transparent to any type of project management for any department in the organization;
- Metrics – Having timely and accurate performance measurements for project activities, possible budget overruns and participant contributions:
- Adjustment – Incorporating the ability to prevent, detect and correct obstacles which could derail, delay or inhibit any of project initiatives;
- Storage – Ensuring that all plans, schedules, associated documents and workflow are stored in a centralized and anytime to anyone accessible location.

It should be noted that complex IT project that is multi-dimensional differs from multi-project management. Most companies have many IT projects being developed and implemented at one time, in some cases even managed by the same project leader; a multi-dimensional IT project, in its most basic form, can have additional sub-projects, or child projects, and therefore additional and separate budgets and resources, associated with each of the projects.

The difference between multi-project management and multi-dimensional project governance is shown in Fig. 1.
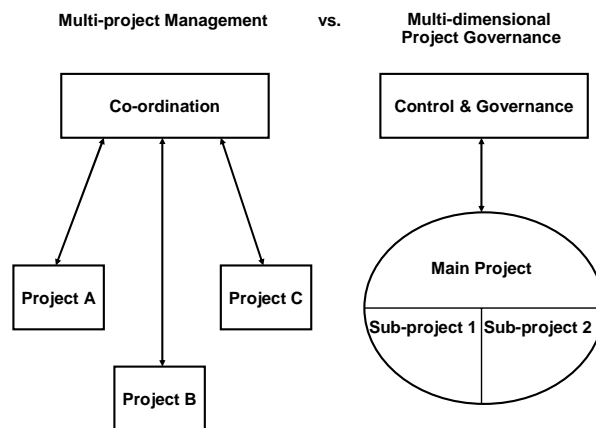

Fig. 1 – The difference between Multi-project Management and Multi-dimensional Project Management

The innate structure of MITPCG places most modern organizations at the helm of practice; virtually all IT projects at some point involve other departments, external resources, and therefore budgets.

Multi-dimensional IT projects can occur in two different types:

- hard projects, when they support mostly tangible logistics management, and
- soft projects, when they support mostly business services.

Example of the hard multi-dimensional IT project may be found in construction. A project of this sort of any magnitude requires one project manager who is considered the main point of contact. However, multiple suppliers of goods, installers and sub-contractors are constantly interfacing through this manager. Raw materials, consisting of hundreds or thousands of inventory items, must be accounted for during multiple phases of the project. Deliverables, including contracts, permits, budgets, timelines and technical documentation, must be stored, referenced and adjusted on a constant basis.

Example of soft multi-dimensional IT project is the IT support to a marketing campaign. An advertising agency, when planning the marketing campaign, puts in place an account executive as the project manager, who reviews goals, owns the budgets and schedules and works with internal and external resources. Multiple employees have input, decision-making power and project requirements, such as copywriters who interface with clients on the ad content and creative directors who approve the strategy, copy and design. External vendors, such as Internet Service Providers, printers, photographers and Web masters are hired, each having specific contract conditions requiring approval. Constant customer input, shifting schedules, document revisions and fluctuating expenses can be abundant, necessitating immediate action.

In both examples, each IT project takes on many dimensions, all the while requiring review or oversight by many resources.

There are many contributions to the various aspects and magnitudes of Multi-dimensional IT Project Management:

- Resources – Typically there are many individuals assigned with responsibilities for any given project, which might require different access rights to information. Examples include: business partners, sub-contractors, vendors, suppliers, employees, customers and executive management.
- Logistics – Project participants often do not reside in the same place; more often then not, they are distributed throughout multiple office sites, varying departments or divisions and vendor or client business locations, domestically and internationally. In such circumstances, in spite of possibilities to do lot of work online, some kind of additional logistics is usually needed.
- Finances – Although a project might have a single overall budget, financial requirements can remarkably affect other internal or sub-budgets and may rely on additional external resource expenditures.
- Documents – Multitude of documents can accumulate at rapid pace, ranging from contractor quotes, marketing collateral, vendor contracts, print materials, expense receipts and meeting notes. The famous concept of paperless enterprise and its projects is unfortunately just an idea which is still far from being practical.
- Assets – Each IT project has an association to inventory, which could include such examples as office supplies, product updates, trade show badges, accessories, light food and soft drinks or customer giveaways, each of which is related to project budgets and timelines.
- Processes – The workflow and disciplines of various resources produce dissimilar processes throughout a project, which is typically not visible to other project members.

Given the nature of compound levels of components within MITPCG, the catalysts for success lay in a foundation where all components are required to be:

- Integrated and associated – Every document, resource, item or workflow within an IT project must be associated with other project components. This insures that all parts of a project are connected and accessible when necessary, for strategic or analytic views, or immediate updates.
- Accessible from one centralized location with consistent models – All IT project team members require secure access to information pertinent to projects, and based on their roles and responsibilities, can actively participate in projects with definable and constant standards.
- Event-triggered and based upon preset parameters – Cost overruns, delays and missed deadlines or lack of participation are examples where any component of a project should trigger further action, from simple management notification to customer updates.
- Tracked for accountability – Each IT project participant is held to responsibilities that make a project successful; the ability to monitor workflow adherence must also always be available.

Figure 2 shows an example of IT project which goal is to develop a Web page customized to requirements of a certain marketing campaign.
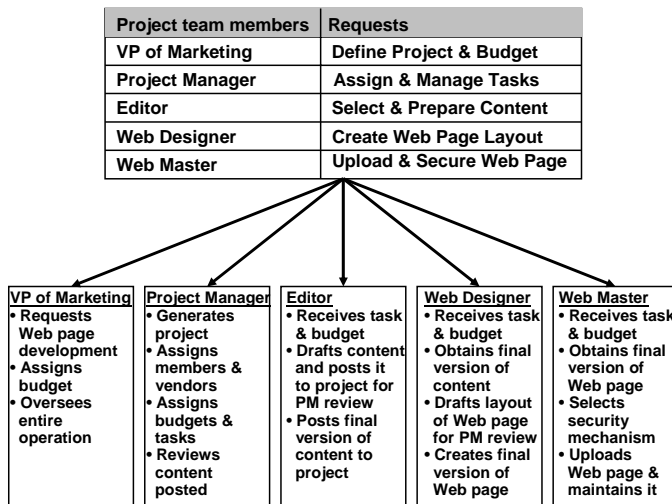
Project team members	Requests
VP of Marketing	Define Project & Budget
Project Manager	Assign & Manage Tasks
Editor	Select & Prepare Content
Web Designer	Create Web Page Layout
Web Master	Upload & Secure Web Page

VP of Marketing	Project Manager	Editor	Web Designer	Web Master
• Requests Web page development • Assigns budget • Oversees entire operation	• Generates project • Assigns members & vendors • Assigns budgets & tasks • Reviews content posted	• Receives task & budget • Drafts content and posts it to project for PM review • Posts final version of content to project	• Receives task & budget • Obtains final version of content • Drafts layout of Web page for PM review • Creates final version of Web page	• Receives task & budget • Obtains final version of Web page • Selects security mechanism • Uploads Web page & maintains it

Fig. 2 – A project of customized Web page development

4   Current Challenges with MITPCG

Contemporary methods of general project management have utilized improved communications and technologies for greater project management success, e.g. on-time completion, within budget, original features and/or functions accomplished. However, industry analysts believe that costly and failed IT projects continue to be the norm.

The likelihood of IT project failure increases due to a number of factors. Any lack of collaboration between project team members greatly alters the success of a project as it depends upon how the resources work and communicate together.

In addition, if common review metrics for IT projects do not exist, critical project information, including audit trails, resource management and knowledge management, cannot be captured,

Lastly, if project managers or executives cannot strategically view the project as a whole, they have less control over a project's success. Projects are conducted within a delicate mix of finances and users amidst changing organizational relationships and dependencies. Not being able to analyze an entire IT project, including changes or even diversions, from a single, high-level scope, produces a greater rate for failure for projects.

Only in the last few years has project management technology included some organizational business processes and role based definitions. The problem is that these technologies do not take advantage of the integration path of software in order to incorporate component technologies that are affected by product management. In addition, the ability to collaborate, review and verify project information in real-time by utilizing common storage of intelligence is virtually non-existent.

Industry watchers and researchers [4] have found that there are currently few pre-built solutions that bring together all the components for IT project management within a project environment that can be accessible by project stakeholders. Multiple departments, offices and locations typically use isolated technologies in order to perform those specific tasks.

The challenges faced in MITPCG cannot be alleviated with current technologies that do not address the standardization of processes, nor provide broad-based views and ongoing collaboration practices. When scheduling software, collaboration tools, document management software, and other key solutions are not integrated, then coordination suffers and IT projects usually fail.

5   Making MITPCG a Success

Companies cannot treat IT project management as isolated, self-contained, linear plans that can be completed with different technologies, software tools, reporting formats or status meetings. Underestimating the importance of collaboration amidst all resources, a centralized location of project governance information and integrated project components can result in staggering costs for a business.

IT project initiatives innately have their own return-on-investment factor. Project that are on time and budget are a success; projects that are over budget, past schedule deadline or worse, cancelled, can cost a company a lot of money, measured both in wasted expenditures and man-hours. According to Standish Group, a consulting organization in project and value performance, the success rate for Fortune 500 companies in executing IT projects in 2004 was approximately only about 35 percent [5], which is, of course, unsatisfactory.

Our opinion is that 'missing link' to appeasing such astonishing failure rates is a broad-based method of communication, control and governance that encompasses and actively incorporates all the elements of the business for each IT – and not only IT – project – a business management solution that can unify all activities, processes and components within projects. Those discrete facets need to include all available financial, resource, technological, knowledge and document information.

An integral and underlying component of such a solution is that it be contained in a single, shared, collaborative portal environment in order for communication to be direct, as much as possible paperless, immediate and inclusive. The entire operations of an organization have to be contained within such a business management solution so that all IT and other project processes are accounted for.

An example of such a broad-based approach to Multi-dimensional IT Project Control and Governance is that of software development and product rollout. A true multi-dimensional project governance solution would enable both linear and closed-loop approaches to:

- Separate secure portal logins for all developers, consultants, outsourced professionals, experts in quality assurance, marketing professionals and customers, for access when and where from needed during whole project life cycle.
- One shared environment containing content knowledge such as consultant contracts, specifications, marketing collateral, source code, vendor payments, etc. that are affected by the project.
- Association of all project-related business components with visibility triggers or semaphores for missed deadlines, budget overruns and resource accountability. In this sense, dashboards seem to be one of the most appropriate solutions contemporary business intelligence technology can offer today [6].
- Standard, customizable and repeatable IT project infrastructures including enablement of sub- and parallel projects and automation of key business processes.
- Utilization of all resources and skills sets across departments, business units and geographical boundaries.
- Broad- and role-based views for high-level IT project planning, analysis, communication, interaction and reporting.

The above facets, by default, must be contained within a solution that can satisfy and move forward a multi-dimensional IT project to success. They must also contain triggers for accountability and bottlenecks, and whose business components are linked to one another.

6 Conclusion

Project Management has evolved from static or linear methodology consisting of basic schedules and task lists to a multi-dimensional level of complexity touching every part of the business, including multiple office locations, remote resources, and diverse skills and roles.

We believe that Multi-dimensional IT Project Control and Governance requires an enterprise-wide tool that recognizes and associates all business operations and processes within the organization as well as all involved resources inside and outside the organization.

Any type of IT project management solution need not be a separate entity rather, a natural extension of the core business that seamlessly integrates with the overall organization.

Current discrete technologies that try to attend to Multi-dimensional IT Project Control and Governance will not provide the necessary business infrastructures; only a business management solution that covers all project processes and elements can address the complexities of MITPCG.

A single business management solution requires one and only one centralized place for all project data as well as one and only one secure portal accessible by many, including employees, vendors, suppliers, customers and all other business partners. Of course, with different roles, rights and secure access abilities.

By having all aspects of the business share information, greater efficiencies, more fluid decision-making processes including reduced operational costs, will evolve through centralized Multi-dimensional IT Project Control and Governance. By associating and incorporating affected processes from all departments, offices and individual resources, only then can MITPCG achieve a significantly greater success rate.

Through greater centralization of critical business information, companies can put themselves in an improved position to have better-trained staff and foster more immediate and seamless communication throughout the organization.

Businesses will ultimately decrease complexities of Multi-dimensional IT Project Control and Governance, while increasing productivity and return-on-investment.

References:
[1] Paul, S., A Shift in the Paradigm: Project and Portfolio Management Solutions, http://www.kmproject.com, 2002.
[2] Webb, S., Robertson, M., Enabling IT Governance with Project Portfolio Management, http://www.primavera.com, 2004.
[3] Bollinger, A., Smith, R., Managing organizational knowledge as a strategic asset, *Journal of Knowledge Management*, Volume 5, Number 1, 1, 2001, pp. 8-18
[4] ***, Enterprise Project Management (EPM) Solution Overview, http://www.microsoft.com/office/project/prodinfo/epm/components.mspx, 20. 10. 2003.
[5] ***, Executives' Nightmare: IT Project Management, http://www.standishgroup.com, 02/2005.
[6] Orts, D., Dashboard Implementation Methodology, http://www.dmreview.com/editorial/dmreview/, 06/2005.