A Project Management Perspective on ITIL® V3

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"Be keen for what benefits you. Seek God's help. Never give up."
Mohammed (PBUH)

Abstract

This paper is a trial to view the ITIL® V3 framework for IT service management from a project management perspective, highlighting the aspects of project management in ITIL® V3 that represent intersection points between project management and IT service management, viewing project management from the point of view of PMI's *PMBOK® Guide*, and IT service management from the point of view of ITIL® V3 framework, towards the objective of successful integration of ITIL® processes within PMP® processes. Preceding this correspondence is an overview, collected from literature, on ITIL® and IT service management, focusing on the ITIL® V3 framework.

What is ITIL®?

According to the IT Service Management Forum (itSMF), "ITIL (IT Infrastructure Library) provides a framework of best practice guidance for IT service management and since its creation, ITIL® has grown to become the most widely accepted approach to IT Service Management in the world."

ITIL® is a public framework that describes best practice in IT service management. It provides a framework for the governance of IT, the "service wrap," and focuses on the continual measurement and improvement of the quality of IT service delivered, from both a business and a customer perspective. This focus is a major factor in ITIL's worldwide success and has contributed to its prolific usage and to the key benefits obtained by those organizations deploying the techniques and processes throughout their organizations.

History and Objectives

The primary objective of service management is to ensure that the IT services are aligned to the business needs and actively support them. It is imperative that the IT services underpin the business processes, but it is also increasingly important that IT acts as an agent for change to facilitate business transformation.

ITIL® was published between 1989 and 1995 by Her Majesty's Stationery Office (HMSO) in the UK on behalf of the Central Communications and Telecommunications Agency (CCTA)—now subsumed within the Office of Government Commerce (OGC). Its early use was principally confined to the UK and Netherlands. A second version of ITIL® was published as a set of revised books between 2000 and 2004.

The initial version of ITIL® consisted of a library of 31 associated books covering all aspects of IT service provision. This initial version was then revised and replaced by seven, more closely connected and consistent books (ITIL® V2) consolidated within an overall framework. This second version became universally accepted and is now used in many countries by thousands of organizations as the basis for effective IT service provision. In 2007, ITIL® V2 was superseded by an enhanced and consolidated third version of ITIL®, consisting of five core books covering the service lifecycle, together with the Official Introduction. (See the *ITIL® V3 Components* section for details.)

IT Service and Service Management

Service Definition

According to itSMF, "A service is a means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks."

The outcomes that customers want to achieve are the reason why they purchase or use the service. The value of the service to the customer is directly dependent on how well it facilitates these outcomes.

A simple example of a customer outcome that could be facilitated by an IT service might be: *Sales people spending more time interacting with customers* facilitated by *a remote access service that enables reliable access to corporate sales systems from sales people's laptops.*

Service Management Definition

According to itSMF, "Service Management is a set of specialized organizational capabilities for providing value to customers in the form of services."

These "specialized organizational capabilities" include all of the processes, methods, functions, roles and activities that a service provider uses to enable it to deliver services to its customers.

Service management is concerned with more than just delivering services. Each service, process, or infrastructure component has a lifecycle, and service management considers the entire lifecycle from strategy through design and transition to operation and continual improvement.

The inputs to service management are the resources and capabilities that represent the assets of the service provider. The outputs are the services that provide value to the customers.

Adopting good practice can help a service provider to create an effective service management system. Good practice is simply doing things that have been shown to work and to be effective. Good practice can come from many different sources, including public frameworks (such as ITIL, COBIT, and CMMI), standards (such as ISO/IEC 20000 and ISO 9000), and proprietary knowledge of people and organizations.

IT Service Management (ITSM)

Wikipedia: "IT Service Management (ITSM) is a discipline for managing information technology (IT) systems, philosophically centered on the customer's perspective of IT contribution to the business. Providers of IT services can no longer afford to focus on technology and their internal organization, they now have to consider the quality of the services they provide and focus on the relationship with customers.

ITSM is process-focused and in this sense has ties and common interests with process improvement frameworks and methodologies. The discipline is not concerned with the details of how to use a particular vendor's product, or necessarily with the technical details of the systems under management. Instead, it focuses on providing a framework to structure IT-related activities and the interactions of IT technical personnel with business customers and users.

ITSM is generally concerned with the 'back office' concerns or operational concerns of information technology management, and not on technology development. For example, the process of writing computer software for sale, or designing a microprocessor is not the focus of the discipline, but the computer systems used by marketing and business development staff in software and hardware companies would be. Many non-technology companies, such as those in the financial, retail, and travel industries, have significant information technology systems which are not exposed to customers."

ITIL® V3 Components

Exhibit 1 shows the service lifecycle within the processes of ITIL® V3 framework for service management.

Exhibit 1 – ITIL® V3—The Service Lifecycle

Service Strategy

The achievement of strategic goals or objectives requires the use of strategic assets. The Service Strategy guidance shows how to transform service management into a strategic asset.

Key Processes and Activities

In addition to *Strategy Generation*, Service Strategy also includes the following key processes:

- *Financial Management:* Financial Management covers the functions and processes responsible for managing an IT service provider's budgeting.
- *Service Portfolio Management (SPM):* SPM involves proactive management of the investment across the service lifecycle, including those services in the concept, design and transition pipeline, as well as live services defined in the various service catalogues and retired services.
- *Demand Management:* The purpose of Demand Management is to understand and influence customer demand for services and the provision of capacity to meet these demands. At a strategic level this can involve analysis of patterns of business activity and

user profiles. A Service Level Package (SLP) defines the level of utility and warranty for a Service Package and is designed to meet the needs of a pattern of business activity.

Service Design

Guidance on designing IT services, along with the governing IT practices, processes and policies, to realize the strategy and facilitate the introduction of services into the live environment, ensuring quality service delivery, customer satisfaction, and cost-effective service provision.

The role of Service Design within the business change process can be defined as: The design of appropriate and innovative IT services, including their architectures, processes, policies and documentation, to meet current and future agreed business requirements.

Service Design starts with a set of business requirements, and ends with the development of a service solution designed to meet documented business requirements and outcomes and to provide a Service Design Package (SDP), which defines all aspects of an IT service and its requirements through each stage of its lifecycle, for handover into Service Transition.

Key Processes and Activities

- *Service Catalog Management (SCM):* The Service Catalogue provides a central source of information on the IT services delivered to the business by the service provider organization. The purpose of SCM is to provide a single, consistent source of information on all of the agreed services, and ensure that it is widely available to those who are approved to access it.
- *Service Level Management (SLM):* SLM negotiates, agrees and documents appropriate IT service targets with the business, and then monitors and produces reports on delivery against the agreed level of service. The main information provided by the SLM process includes Service Level Agreements (SLA), Operational Level Agreements (OLA) and other support agreements, and the production of the Service Improvement Plan (SIP) and the Service Quality Plan.
- *Capacity Management:* The purpose of Capacity Management is to provide a point of focus and management for all capacity and performance-related issues, relating to both services and resources, and to match the capacity of IT to the agreed business demands. The Capacity Management Information System (CMIS) is the cornerstone of a successful Capacity Management process.
- *Availability Management:* The purpose of Availability Management is to provide a point of focus and management for all availability-related issues, relating to services, components and resources, ensuring that availability targets in all areas are measured and achieved, and that they match or exceed the current and future agreed needs of the business in a cost-effective manner. The Availability Management process should be based around an Information System (AMIS), which assists in the production of the Availability Plan.
- *IT Service Continuity Management (ITSCM):* The purpose of ITSCM is to maintain the appropriate on-going recovery capability within IT services to match the agreed needs, requirements and timescales of the business, through service continuity and recovery plans.
- *Information Security Management (ISM):* The purpose of the ISM process is to align IT security with business security and ensure that information security is effectively managed in all service and Service Management activities.
- *Supplier Management:* The purpose of the Supplier Management process is to obtain value for money from suppliers and to ensure that suppliers perform to the targets contained within their contracts and agreements, while conforming to all of the terms and conditions.

Service Transition

Guidance for the development of capabilities for transitioning new and changed services into operations, ensuring the requirements of Service Strategy, encoded in Service Design, are effectively realized in Service Operations while controlling the risks of failure and disruption.

Service Transition delivers this by receiving the Service Design Package (SDP) from the Service Design stage and delivering into the Operational stage every necessary element required for ongoing operation and support of that service. If business circumstances, assumptions or requirements have changed since design, then modifications may well be required during the Service Transition stage in order to deliver the required service.

Key Processes and Activities

The whole lifecycle processes are:
- *Change Management:* The purpose of the Change Management process is to ensure that standardized methods are used for the efficient and prompt handling of all changes, that all changes are recorded in the Configuration Management System, and that overall business risk is optimized. Change management delivers, to the business, reduced errors in new or changed services and faster, more accurate implementation of changes.
- *Service Asset and Configuration Management (SACM):* The purpose of SACM is to identify, control and account for service assets and configuration items (CI), protecting and ensuring their integrity across the service lifecycle.
- *Knowledge Management:* The purpose of Knowledge Management is to ensure that the right person has the right knowledge, at the right time to deliver and support the services required by the business.

Processes focused on Service Transition, but not exclusive to this stage, are as follows:

- *Transition Planning and Support:* The goals of Transition Planning and Support are to plan and coordinate resources to ensure that the requirements of Service Strategy encoded in Service Design are effectively realized in Service Operations, and to identify, manage and control the risks of failure and disruption across transition activities.
- *Release and Deployment Management:* The goal of the Release and Deployment Management process is to assemble and position all aspects of services into production and establish effective use of new or changed services. Release and Deployment Management covers the whole assembly and implementation of new/changed services for operational use, from release planning through to early life support.
- *Service Validation and Testing:* Successful testing depends on understanding the service holistically—how it will be used and the way it is constructed. The key purpose of service validation and testing is to provide objective evidence that the new/changed service supports the business requirements, including the agreed SLAs. The service is tested explicitly against the utilities and warranties set out in the service design package, including business functionality, availability, continuity, security, usability and regression testing.
- *Evaluation:* Ensuring that the service will be useful to the business is central to successful Service Transition and this extends into ensuring that the service will continue to be relevant by establishing appropriate metrics and measurement techniques.

Service Operation

Guidance on achieving effectiveness and efficiency in the delivery and support of services to ensure value for the customer and the service provider. Strategic objectives are ultimately realized through Service Operations. It is only during this stage of the lifecycle that services actually deliver value to the business.

Key Processes and Activities

- *Event Management:* An event may indicate that something is not functioning correctly, leading to an incident being logged. Event management depends on monitoring, but it is different. Event management generates and detects notifications, whilst monitoring is about checking the status of components even when no events are occurring. Response to an event may be automated or may require manual intervention. If actions are needed then a trigger, such as an SMS message or an incident being automatically logged, can alert support staff.
- *Incident Management:* An incident is an unplanned interruption to an IT service, or a reduction in the quality of an IT service. Failure of a configuration item that has not yet impacted service is also an incident. The purpose of Incident Management is to restore normal service as quickly as possible, and to minimize the adverse impact on business operations.
- *Request Fulfillment:* The purpose of Request Fulfillment is to enable users to request and receive standard services, to source and deliver these services, to provide information to users and customers about services and procedures for obtaining them, and to assist with general information, complaints, and comments.
- *Access Management:* The purpose of the Access Management process is to provide the rights for users to be able to access a service or group of services, while preventing access to non-authorized users.
- *Problem Management:* Problem Management includes diagnosing causes of incidents, determining the resolution, and ensuring that the resolution is implemented. The key objectives of Problem Management are to prevent problems and resulting incidents from happening, to eliminate recurring incidents and to minimize the impact of incidents that cannot be prevented. Problem Management also maintains information about problems and the appropriate workarounds and resolutions.

Continual Service Improvement

Guidance in creating and maintaining value for customers through better design, introduction and operation of services, linking improvement efforts and outcomes with Service Strategy, Design, Transition, and Operation.

Key Processes and Activities

- *7-Step Improvement Process:* The 7-step improvement process covers the steps required to collect meaningful data, analyze this data to identify trends and issues, present the information to management for their prioritization and agreement, and implement improvements. The 7-Step Improvement Process is continual and loops back to the beginning.
  - Step 1 - Define what you should measure
  - Step 2 - Define what you can measure
  - Step 3 - Gather the data
  - Step 4 - Process the data
  - Step 5 - Analyze the data
  - Step 6 - Present and use the information
  - Step 7 - Implement corrective action
- *Service Measurement:* An integrated Service Measurement Framework needs to be put in place that defines and collects the required metrics and raw data, and supports the reporting and interpretation of that data.
- *Service Reporting:* A significant amount of data is collated and monitored by IT in the daily delivery of quality service to the business, but only a small subset is of real interest and importance to the business.

In addition, the itSMF says "It is intended that the content of these core books will be enhanced by additional complementary publications and by a set of supporting web services" (the outer circle in Exhibit 1).

Adoption of ITIL® Framework

Cervera (2005) states that: "Standard frameworks are general purpose. In order to be useful to a wide and heterogeneous set of organizations they provide best practices expressed in general terms. It is your task to convert that into actionable pieces of work. After understanding the process as described in the framework, you will have to determine how you want it to be carried out in your organization's context, determine the roles that will be responsible of executing it, the tools that will be used to facilitate it and the documents, information, objects, etc... that it must deliver."

In that way, ITIL® represents a framework of processes that embody best practices, but it doesn't entail the exact methodology of applying these processes, as this will be specific to every organization applying ITIL® processes for its IT service management.

Adoption of ITIL® framework for IT Service Management in a certain IT Service Provider organization depends on the specific needs of this organization, and the level of complexity of its processes. ITIL® adoption can also be integrated with other frameworks that may be in application within the organization, like CMMI® or PMP® frameworks.

In what follows, a suggested integration of ITIL® V3 framework within the PMP® framework for project management is presented, by fitting each ITIL® V3 process in the corresponding stage of project management. Some of the project management aspects that are visible in ITIL® V3 concepts are also highlighted.

Project Management Aspects of ITIL® V3

Service as a Project

According to PMI's (2004) *PMBOK® Guide*, "A project is a temporary endeavor undertaken to create a unique product, service, or result."

This implies directly that service delivery is one of project kinds, where the deliverable is the actual service being requested by the customer.

The major characteristics that distinguish a project according to the *PMBOK® Guide* and how service delivery satisfies them can be demonstrated as follows:

- *Temporary:* A project is a temporary endeavor, with a beginning and an end, and this is clear from the service life cycle depicted in Exhibit 1. The service passes through successive phases during its lifecycle beginning from the requirements received, until the delivery to customer, while the continual improvement and support surrounds all activities.
- *Unique Product or Service:* The deliverable of a project is said to be unique, not repeated like in operational activities, and this is satisfied by the IT service being delivered to a specific customer in response to specific needs.
- *Progressive Elaboration:* The project execution is said to be iterative and continually elaborating in response to changes, and this can be satisfied through the continual service improvement and service transition processes in the ITIL® V3 framework.

Considering the IT Service delivery as a project indicates a necessary resemblance or correspondence between the concepts and principals of project management and those of IT Service Management. In the next section, these intersection points are outlined, viewing Project Management from the point of view of the *PMBOK® Guide*, and IT Service Management from the point of view of ITIL® V3 framework.

Project Management Processes Reflected in ITIL® V3 Processes

According to the itSMF explanation of the service lifecycle: "[Exhibit 2] illustrates how the service lifecycle is initiated from a change in requirements in the business.
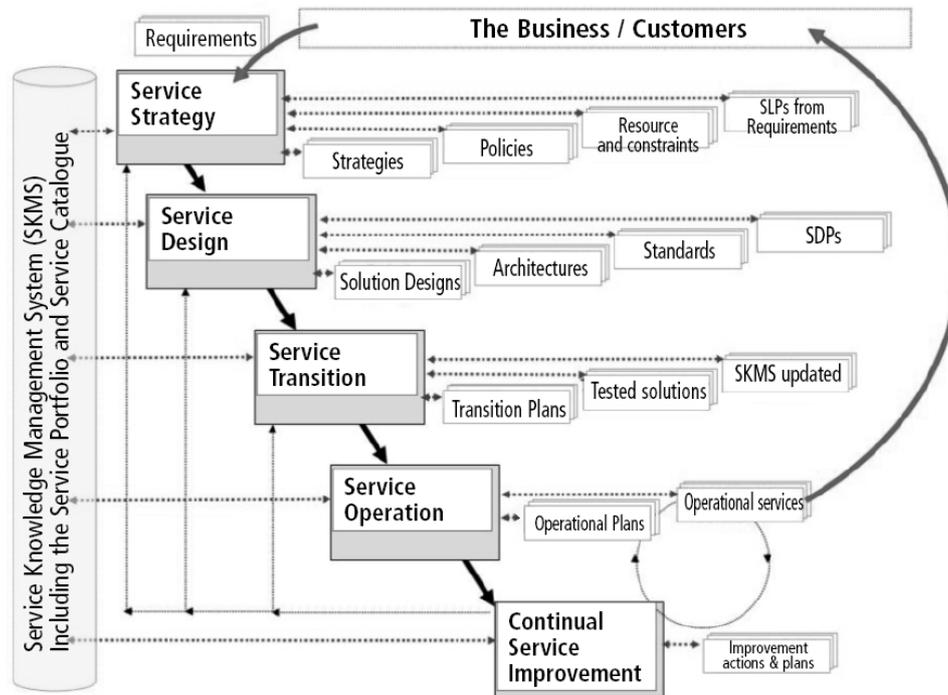
Exhibit 2 – Key Links, Inputs & Outputs of the Service Lifecycle Stages

These requirements are identified and agreed within the Service Strategy stage within a Service Level Package (SLP) and a defined set of business outcomes. This passes to the Service Design stage where a service solution is produced together with a Service Design Package (SDP) containing everything necessary to take this service through the remaining stages of the lifecycle.

The SDP passes to the Service Transition stage, where the service is evaluated, tested, and validated, the Service Knowledge Management System (SKMS) is updated, and the service is transitioned into the live environment, where it enters the Service Operation stage.

Wherever possible, Continual Service Improvement identifies opportunities for the improvement of weaknesses or failures anywhere within any of the lifecycle stages."

By reference to the PMBOK® Guide *description of project management processes, and comparing these to the set of service management processes described within the ITIL® V3 framework, we can see the correspondence outlined in Exhibit 3:*

PMBOK® Guide \\ ITIL	Initiating	Planning	Executing	Monitoring & Controlling	Closing
Service Strategy	Service Portfolio Review to check alignment with strategy, portfolio balance, financial value			Reconsideration within regular Service Portfolio Reviews	

	maximization, and the suitable priority. (Chartering)				
Service Design	Service Catalog Management Service Level Management and generating SLAs and OLAs (Contracting)	Capacity Management Availability Management IT Service Continuity Management Information Security Management Supplier Management (Procurement)		IT Service Continuity Management	
Service Transition		Transition Planning and Support Release and Deployment Management	Release and Deployment Management Service Validation and Testing	Change Management Service Asset and Configuration Management Knowledge Management	Evaluation
Service Operation			Event Management Incident Management Request Fulfillment Access Management Problem Management		
Continual Service Improvement				Continuous improvement of all activities during all stages of the service lifecycle whenever the opportunity exists	

Exhibit 3 – Correspondence Between *PMBOK® Guide* Processes and ITIL® V3 Processes

Other aspects of project management visible within ITIL® V3 IT service management framework include the following:

- *Alignment with Strategy:* The Service Strategy guidelines define a set of processes that makes Service Management a strategic asset. This is a bidirectional effect; since the Service Management vision affects the strategy laid out by the organization, as well as this vision being aligned with the general frame of the organization mission and strategy. The result of this integration is the reflection of Service Management objectives in the decision-making process at the top-level management.
- *Service Portfolio Management:* The Service Strategy also defines the process of Service Portfolio Management (SPM), which is in analogy to the project portfolio management. This dictates techniques and methods for prioritization, selection and resource allocation for existing and on hold services/projects, as well as balancing the portfolio for desired distribution based on several criteria like market, service/project size, and long or short term. The maximization of the overall financial value of the whole portfolio is one of the key objectives of portfolio management, which is considered within the Financial Management process of the Service Strategy.
- *Customer Satisfaction:* The satisfaction of the customer is a pivotal objective in service management and project management, aiming at fulfilling the needs of the customer and delivering a high quality service or product, with the strategic objective of building a wide customer base that is supported by mutual trust and loyalty. This is achieved through continuous communication with the customer during the service life cycle/project execution, to gain his commitment at every stage.
- *Knowledge Base Utilization:* The concept of Service Knowledge Management System (SKMS) in ITIL®V3 for referencing and adding to historical information is consistent with the concept of lessons learned documentation in project management for the same purpose of future reference and addition in order to capitalize on the gained knowledge and experience within the same organization.
- *Project Team Involvement:* The project progress through the several processes during its lifecycle is carried out by the project team, headed by the project manager, and being coordinated with the project stakeholders. IT Service Management as well involves several roles and responsibilities to perform the activities of every process in the ITIL® V3 framework. The service provider organization assigns every activity or function to the corresponding group within the organization units.

Conclusion

Integration of the ITIL®V3 processes with the PMP® processes answers the question that some project managers pose regarding when to apply a specific ITIL®V3 process during the project lifecycle, in case both frameworks are used to guide the management of a project of delivering IT service.

In this paper a proposed mapping and integration between the processes of the two frameworks is introduced, that takes in consideration the actual activities that should be performed in applying each process. The set of processes that are applicable in a certain case depends on the specific project needs.

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