

Introducing the IBM Process Reference Model for IT

PRM-IT – Sequencing the DNA of IT Management

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Executive summary

The IBM Process Reference Model for IT (PRM-IT) is a generic representation of the processes involved across the complete information technology (IT) management domain. As such, it contains a foundational examination of the IT process topic.

There are two main parts to this document. The first part is in four sections, consisting of:

- *A brief discussion of some of the strategic drivers which impact the management of IT*
- *A review of the key influences on the design and implementation of IT processes*
- *A summary of the principles and criteria used in the creation of PRM-IT, including those which result in alignment with the Information Technology Infrastructure Library (ITIL)*
- *A “first look” at the model, as a whole—including an outline of the model’s process categories and list of processes*

The second part introduces each process category, along with a brief description of the individual processes within that category.

PRM-IT—at exposition levels ranging from this brief introduction, to the full detail in the underlying, rigorously-engineered Integration Definition Function Modeling Method (IDEF0)—is designed to provide a powerful management tool for such purposes as investigating and identifying areas for improvement, and providing a proven start-point for the design and implementation of new and upgraded IT management capabilities.

The IT consultants, architects and specialists at IBM Global Services, working from this common base, are equipped with a full range of methods, techniques and tools to help clients achieve successful IT transformations.

Who should read this paper?

This paper is intended for those within the IT function who seek an understanding of the full range of the processes relevant to IT within any business. It is of particular value to individuals responsible for the specification, creation and delivery of IT services—whether at the Chief Information Officer (CIO) level considering the direction and overall

Highlights

Current strategies to increase earnings have been progressively unsuccessful, resulting in a “growth gap” that organizations must quickly address in order to avoid disappointing investor expectations. Executives are looking to IT partnerships for strategies that will lower risks, increase returns and establish a flexible, stable service platform, while at the same time anticipating the next frontier of cost savings in a business-relevant technology portfolio.

management of IT, or in other IT leadership positions working within any of its competencies and their interfaces with other parts of the IT value chain or value net.

The stakeholders within the business of this IT capability can equally gain greater insight into how IT can better serve them in their IT decisions and activities.

Managing complexity to enhance value growth

Time to “prime the pump”—growth targets at risk

Executives are increasingly concerned that traditional sources of earnings growth may not be able to deliver the results necessary to reach announced profit targets across the next five years. Initial plans to reach those targets through incremental improvements in top- and bottom-line performances are showing signs of weakness. Several years of cost cutting and rollouts of productivity initiatives now leave little room for further material improvement of operating margins at most firms. Long-term declines in pricing power are common in numerous industries, and further geographic expansion of already multinational companies will require significant adaptations of existing business models. Moreover, firms typically cut back on their investments and have “mothballed” projects during the recent economic downturn. As depicted

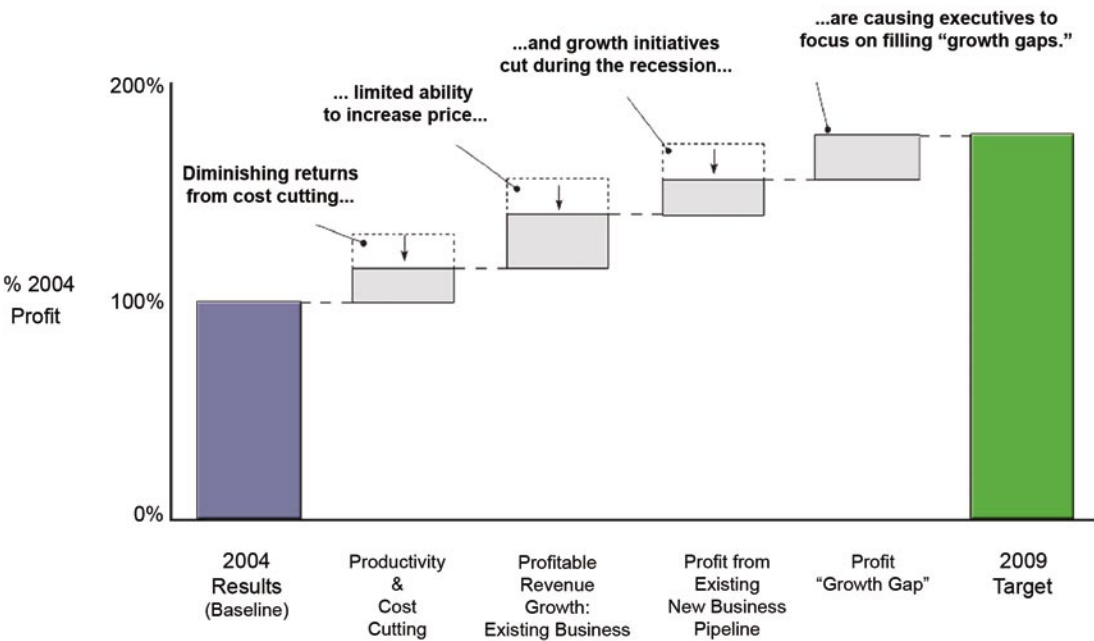


Figure 1 An increasing growth gap. Source: IBM 2004.

Highlights

With an increasing reliance upon cost-effective IT-enabled solutions, new risks have arisen, including a flood of security threats, a growing complexity with integration issues, and an ever-escalating demand on service quality, volume and functionality.

in Figure 1, these trends suggest a “growth gap” which companies must quickly address or risk disappointing investor expectations.

The era of competing strategic priorities

Executives are looking for new business initiatives to rebuild the long-term growth prospects of their firms, and they anticipate that technology-enabled business designs can and will play a dominant role. While information-based technologies are a critical element of filling the growth gap, senior executives have expressed concern about the high risks and low returns. IT organizations have an opportunity to move from a “commodity/utility” provider role to becoming a trusted business partner. In order to leverage this potential, IT management needs to deliver “industrial strength” service resilience, anticipate the next frontier of sustainable cost savings, and build flexible, business-relevant technology portfolios which improve time to value for the business initiatives.

No time for downtime

With increasing reliance on IT-enabled solutions to support core business functions, IT organizations face tremendous pressure to improve systems availability and service resilience. While the mandate for reliable service delivery is not new, two acute factors recently emerged which have directly threaten systems availability. An inundation of new security threats have demonstrated the inadequacy of current risk management practices, and rapid increases in the scale and scope of IT services have revealed the shortcomings of nonstandard or ad hoc operational processes.

“Squeezing” every last dollar

Despite the returning business optimism in 2005, many companies continue to pursue aggressive cost-containment initiatives to improve profitability. Although IT’s focus on cost cutting over the previous years yielded substantial unit cost reductions, unchecked business demand for increased service quality, volume and functionality have driven total IT spending upward. Delivering further cost savings now relies on IT’s ability to partner with business customers to proactively manage demand growth while identifying new, unexploited savings opportunities.

Size without scale

Rapid IT expansion in the late 1990s left many organizations with complex technology portfolios containing numerous legacy platforms connected by a network of middleware and point-to-point solutions. This portfolio heterogeneity imposed significant maintenance and licensing costs on the

Cost-effective IT leadership requires multiple process methodologies to address quality issues, as well as a set of increasingly-sophisticated tools in order to manage the many aspects and relationships of current and future computing environments. Each approach and framework has a unique focus and goal. PRM-IT is a process framework that is designed to provide the ability to synergize the sum of the products of each of these independent approaches, thus helping to elevate the results from an operational efficiency tool to an investment optimization tool that includes people and resources.

business, and weakened IT's ability to rapidly provision new services. As businesses aspire to expand, IT faces pressure to simplify existing technology assets, while ensuring that future provisioning decisions are informed and address both acute business needs and long-term strategic direction.

"Faster, better, cheaper" has always been IT's mantra but, in past years, the challenge has been for only one or two of these mandates at any given point in time—usually, it was cost. To support today's business growth aspirations, all three mandates will need to be improved simultaneously. Lacking robust IT management disciplines to tackle these competing strategic priorities, many IT organizations will be forced into making unacceptable trade-offs.

Dimensions of IT management process excellence

From cost to beyond: the portfolio lens

The firms that have accomplished the most with IT management treat the function as more of a science than an art—a standardized set of activities that can be measured and improved upon over time, and which deliver measurable business value. Process frameworks are valuable tools, having already proven effective in many other business domains—manufacturing, accounting, or customer service, to name a few. To optimize organizational routines, it is necessary to identify and document the processes involved and their associated activities: where they start and stop, what they include and exclude, how they interact with one another, what resources are being allocated, and whether the investment in those resources is paying off. A process model for IT management provides a frame of reference against which an organization can assess if it is doing the right things and determine that they are also being done correctly. More importantly, these processes provide the foundation for the definition of the specific workflows required to deliver value-added, IT-enabled business services.

There is currently a variety of process frameworks and quality management systems for managing IT. Some of the more popular IT-specific frameworks include ITIL, Capability Maturity Model Integration (CMMI), and Control Objectives for Information and Related Technology (CobiT). Others such as Six Sigma, ISO 9000 and the Malcolm Baldrige Award are often leveraged in IT as part of a firm-wide initiative. They provide a range of approaches which can illuminate IT management.

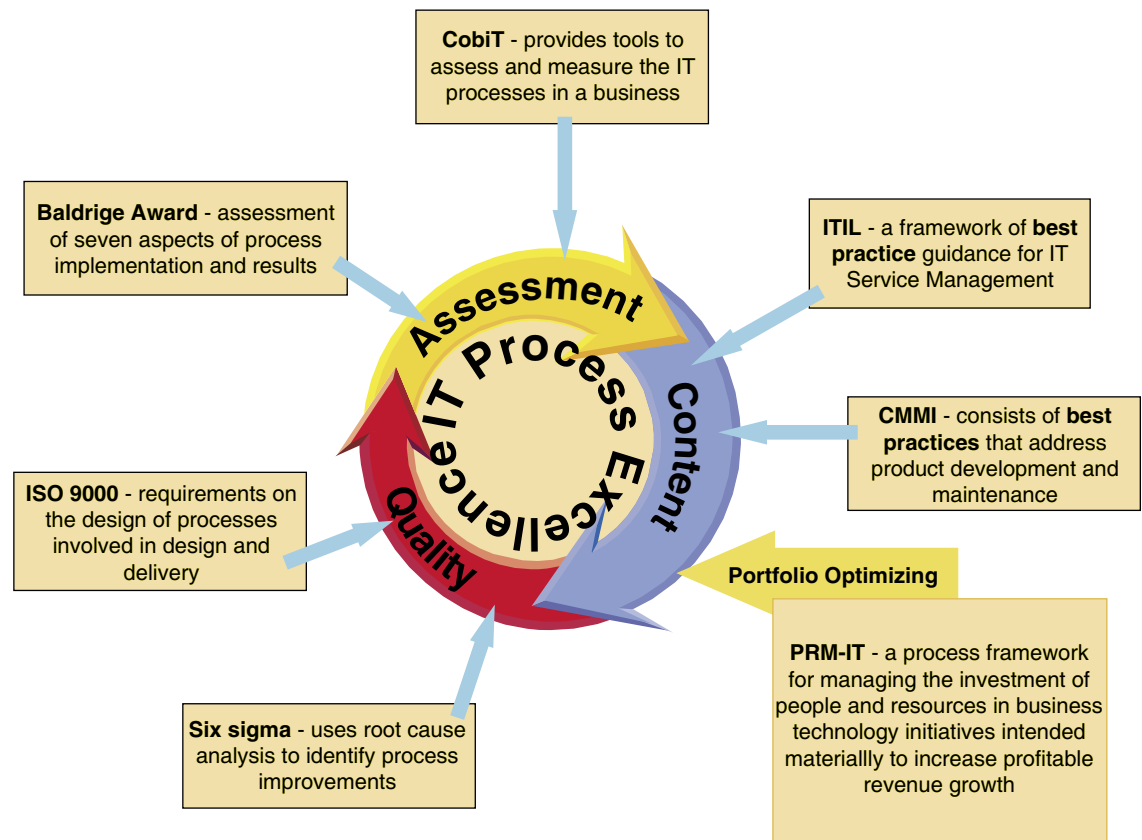


Figure 2 Adding PRM-IT to popular frameworks for IT process excellence

PRM-IT evolves IT management process frameworks beyond operational efficiency to investment optimization. Using a portfolio lens, PRM-IT provides a reference process framework for managing the investment of people and resources in business technology initiatives intended materially to increase profitable revenue growth.

Beyond ITIL: driving IT management process excellence

The IT Infrastructure Library is maintained by the United Kingdom's Office of Government Commerce (OGC) and was developed with the input of many organizations, including IBM, beginning in the late 1980s. In the mid-'90s, IBM documented its enhanced understanding of IT management in the IT Process Model (ITPM). In leapfrog fashion, and once again with assistance from IBM and other major vendors and consultancies, the OGC refreshed its content to create ITIL V2.

Highlights

IBM was an integral part of the creation of ITIL, which focuses on best practices related to service management. This approach raises the bar from “event reaction” to pragmatic, proactive risk assessment. It transcends the simple management of systems and processes by providing an intelligent model that helps enable more informed consumption decisions, while at the same time taking advantage of economies of scale.

The ITIL V2 library currently consists of several books: service support, service delivery, security management, application management, software asset management, infrastructure management, the business perspective, and planning to implement service management.

ITIL is very much aimed at identifying best practices. ITIL describes a systematic approach to creating a service-oriented culture and practice for IT service management. The library emphasizes the central importance of meeting business requirements economically.

However, IT organizations will need to look beyond ITIL to understand the IT management process disciplines that are central to delivering on the growth agenda. IT management exemplars step up to the competing strategic priorities challenge by addressing the sources of complexity that force trade-offs between cost efficiency, flexibility and service availability.

In this model, IBM has supplemented the content of ITIL V2 based on its extensive IT management experience—gained from managing thousands of IT environments, both large and small. While maintaining consistency with ITIL, IBM’s PRM-IT identifies the set of IT management processes required to move beyond a singular cost focus to principled decision-making that accounts for changing business and technology conditions while managing existing systems complexity. Because it builds upon ITIL, this new IBM model is designed to protect your organization’s investment in ITIL and oversee the certification of your ITIL staff.

From event reaction to pragmatic risk management

- *In order to curtail the rise in security spending, IT management exemplars prioritize security resources based on business value at risk rather than attempting to address 100% of vulnerabilities.*
- *IT management exemplars institutionalize formal risk management processes to help ensure business participation in risk acceptance and investment trade-off decisions.*

From order taker to services portfolio manager

- *IT management exemplars build complexity reduction into IT planning to help ensure portfolio relevance and agility.*
- *Overall business strategy and trend information are used to guide long-term IT portfolio strategy.*

The core values of this treatment, which focus on the complexities of integration, are comprehensive, flexible, scalable, holistic and technology-neutral in nature. The implementation of any processes described in this model relies upon the inclusion of “best practices,” such as those within ITIL and CobiT.

- *IT management exemplars provide advance visibility into service portfolio changes to enable business customers to make more informed consumption decisions, thereby helping to improve infrastructure demand forecasting.*

From centralized, dedicated staffing to virtually seamless, on demand global sourcing

- *IT management exemplars develop operational excellence and standardization in order to help enable large-scale savings from exploiting hybrid sourcing.*

Principles and design points for the model

Guiding principles

One of the key concepts behind the new PRM-IT is that IT may be viewed as an essential component of any business, and that it can be managed as an asset.

The basic hypotheses—or guiding principles—underlying the new process model are:

- *There is a fundamental set of processes necessary to manage any information technology environment regardless of organization or technology.*
- *These processes do not exist or function in isolation, but in fact they inter-relate and interact with one another.*
- *There is no single, provably correct process decomposition or any means of demonstrating that a particular treatment of IT processes is always superior to any alternative treatment. Specific implementation context will always be required to make those judgments.*
- *The well-established “best practice” definitions from ITIL represent a de facto standard for the subset of IT processes which are known as “Service Management.”*

Design points

PRM-IT has been designed to satisfy the following key design characteristics. This model is:

- *Comprehensive*
- *Holistic*
- *Neutral with regard to enabling technologies*
- *Scalable*
- *Flexible*
- *Not able to be implemented directly, but able to be adapted to various specific contexts*

Highlights

The management of information technologies is at the heart of every successful business. In most cases, technology has been streamlined, which has made its processes more cost-effective and efficient. In other cases, it has been an additional revenue stream which has added to the bottom line. In all cases, by wisely controlling IT management, the business is empowered, and there is a direct impact to its profitability. The successful management of complex IT interactions, of mission-critical applications, can make a business possible and profitable. Conversely, poor service can have a direct, negative impact on the bottom line.

Alignment with ITIL

PRM-IT is based on some additional design principles in order to achieve alignment with the ITIL best practice materials. It:

- *Is aligned to ITIL Service Management*
- *Includes relevant aspects of other ITIL books*
- *Resolves many inconsistencies which exist within the current ITIL Service Management. (Many of these inconsistencies are being surfaced as part of the requirements-gathering phase of ITIL V3.)*

A first look at the model

Model purpose

The IBM PRM-IT is an integrated collection of the processes involved in using IT to help businesses carry out many or all of their fundamental purposes. It describes—at a generic level—the activities which are performed in order for IT to provide value to the stakeholding business or businesses.

Generally, for these kinds of businesses, this use of IT has been a means to improve the business processes which underpin their value propositions to the industry segments they serve. For others, IT services have been major value propositions in their own right. Thus, as the range and span of IT-based solutions and services have extended and become, for all intents and purposes, pervasive, these two uses of IT have converged.

So, as IT exploitation becomes synonymous with business success, the basis of this model is to describe IT as if it were a business in its own right—applying the same business process description techniques to it as would apply to any other business.

Viewpoint of the model

The focal point for all IT activities—and the executive accountable for IT value—is the CIO. Accordingly, PRM-IT considers the work done within IT from his/her perspective.

It is only from this vantage point that all aspects of IT are visible. Within IT, all other viewpoints can see only a subset of the complete picture.

Highlights

The CIO viewpoint has two main perspectives:

1. Controlling IT activities.
 - *Such control can be direct, in that the activities are performed by the in-house IT department.*
 - *Some activities can be performed within parts of the business, but under the guidance of IT-developed or IT-owned standards. A typical example is that of users within a business division developing applications, and using technology and techniques established by IT.*
 - *Many activities can be assigned to one or more third parties, covering the range from complete outsourcing through to limited IT service out-tasking.*
2. Representing the IT endeavor to its stakeholders and to the wider environment in which it operates. These “interested parties” provide the context in which the IT business operates.

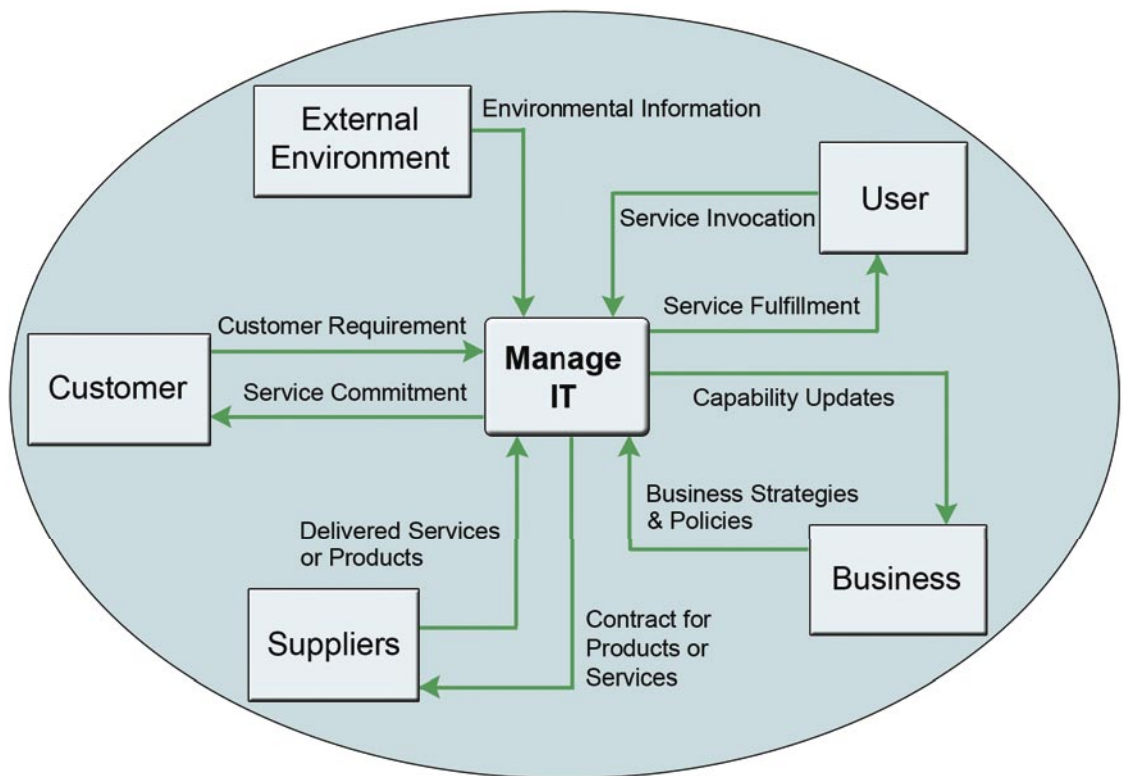


Figure 3 PRM-IT defines a comprehensive set of activities that enable effective use of IT within a business

The context and scope of PRM-IT

The model focuses on all of the potential activities which could occur within the box “Manage IT” in Figure 3, but also recognizes that many of its workings rely upon interactions with other parties (“external agents”).

Drilling into the model’s “DNA”—the process categories

The IBM PRM-IT presents a framework that uses eight process categories. The categories in Figure 4 convey the following concepts:

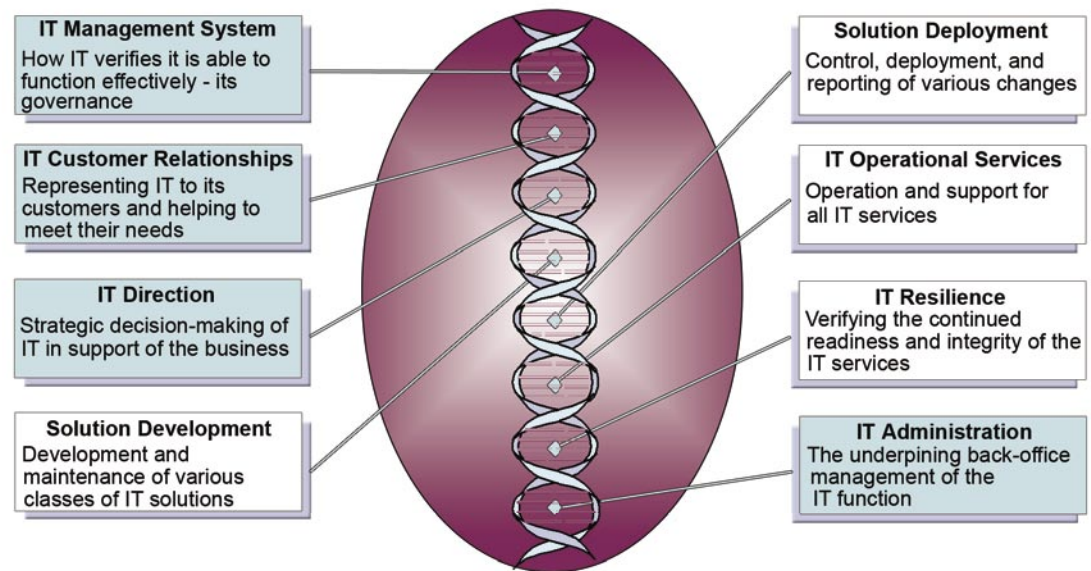


Figure 4 PRM-IT process categories

1. The categories with no internal shading contain the primary processes—in Porter Value Chain terms¹—which produce and deliver the service needed by the IT customer.
2. The most useful decomposition of the primary activities follows a Create–Deploy–Operate–Maintain approach. This produces the following sequence:
 - a. Solution Development
 - b. Solution Deployment
 - c. IT Operational Services
 - d. IT Resilience
3. The shaded categories contain the supporting processes which facilitate the success of the primary processes.

4. The supporting processes are best split into those which focus on the result that IT must achieve (IT Customer Relationships and IT Direction) and those which describe the underpinning setup and ongoing maintenance of the IT functional capability (IT management System and IT Administration).

The processes for the business of IT

As illustrated in Figure 5, IBM's PRM-IT contains a total of 40 processes, across the eight categories.

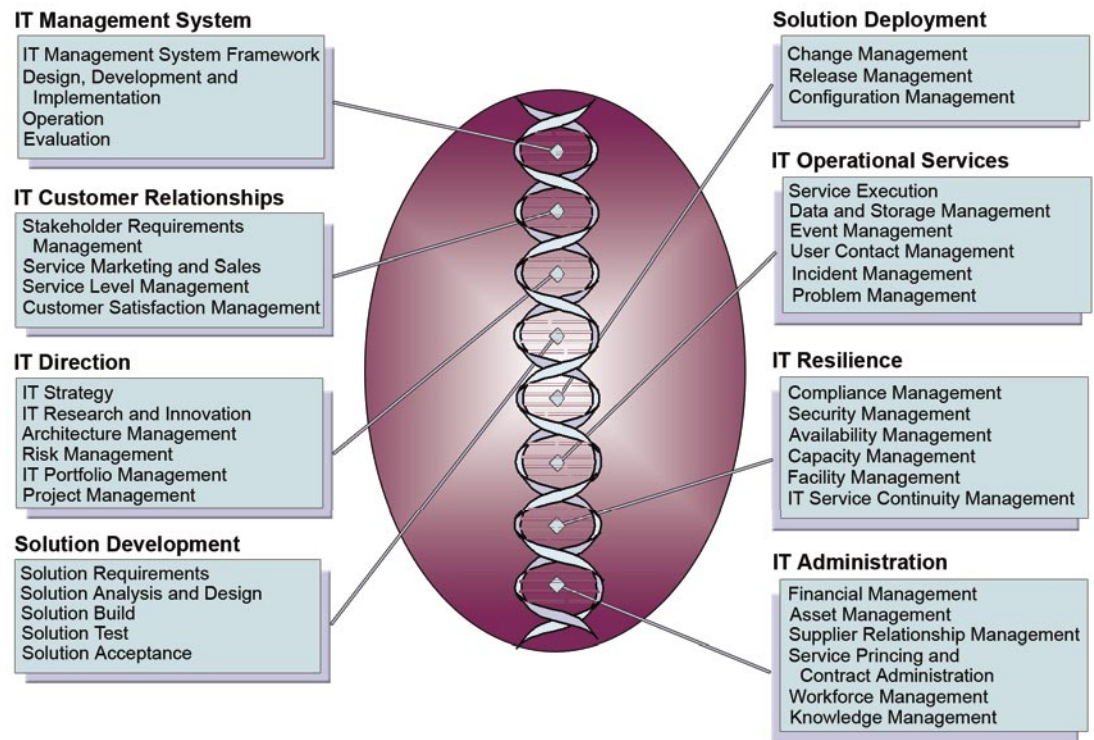


Figure 5 PRM-IT processes

The model has a further decomposition of these processes into 254 activities. The interaction among all the categories, processes and activities are modeled in nearly 700 inputs, outputs and controls, and several thousand individual linkages. However, in this paper, we will stay focused on the higher levels.

Following are descriptions of the 8 categories and descriptions of what the corresponding 40 processes help you accomplish...

[Category 1] IT Management System

The IT Management System process category defines a structure of relationships and processes which are designed to direct and control the IT endeavor. These must establish the capability within which the IT function's goals can be achieved, adding value while balancing risk versus return across IT and its processes.

The category defines, establishes, operates and improves upon a management framework for conducting IT activities. The management framework will outline, as an example, the management model, guiding principles, methods, organization design, information framework, process structure, policies and practices to guide the IT organization toward its stated goals. Once the management framework is defined and implemented, a continuous evaluation process will be executed to help enable better decision-making by executives as to whether the business model is succeeding or should be modified to better achieve the objectives.

The IT Management System process category verifies that a framework is in place to integrate processes, technologies, people and data in a manner that is consistent with IT goals. The category also monitors the framework against the broader enterprise goals and quality metrics. When specific goals and quality metrics are consistently not met, decisions will be made as to whether the overall framework will be slightly modified or restructured to foster future success.

[Process 1.1] IT Management System Framework—

Lay the foundation for building the IT management system for a business, taking into account such factors as the vision, values, goals, and overall business objectives—and establishing guiding principles (or a “management philosophy”) based on those factors.

This framework plays a key role in aligning the IT entity with the overall approach of the business. To be effective, the IT management system must focus on cultural as well as business aspects. This process does not identify the priorities of the business, but rather the approach to operating the various IT projects and processes in a coordinated fashion, managing their progress and health.

[Process 1.2] IT Management System Design, Development and Implementation—

Define, establish and deploy an ecosystem for managing an IT organization.

To select the key management model or models that will be used in the IT management system and to actually implement the system—i.e., assigning roles and responsibilities, and process owners.

[Process 1.3] IT Management System Operation—

Run the management system under which the overall IT function performs its work of satisfying the business needs. This process does not direct what IT activities should be performed to reflect the priorities of the business, but instead oversees the monitoring and control of the collected IT projects and processes, making corrective adjustments where needed.

[Process 1.4] IT Management System Evaluation—

Evaluate the execution and implementation of the IT management system and identify potential improvements to it. This process monitors the measurements from the other processes in the IT management system, as well as those from the overall management system in order to verify that the system is functioning correctly.

[Category 2] IT Customer Relationships

The IT Customer Relationships process category is designed to give the IT service providers a mechanism to understand, monitor and perform effectively in the marketplace they serve. Through active communication and interaction with customers, this process group provides the IT enterprise with valuable, current information concerning customer wants, needs and requirements. Once these requirements are captured and understood, the process category helps ensure that an effective market plan is created to bring the various IT services and capabilities to the marketplace. In support of delivering these services, Service Level Agreements (SLAs), Underpinning Contracts (UCs) and Operational Level Agreements (OLAs) are planned, created, implemented, monitored, and steadily improved within this process group. Further, the actual service catalog is initially created and maintained with information from the marketplace, customers and service level achievements. While the IT services are in operation, customer satisfaction data is continuously gathered, monitored and recorded in order to enhance IT service capabilities and IT's presence in the enterprise.

The IT Customer Relationships process category helps ensure that the IT enterprise is effective in the marketplace. Through active market research, the IT services are kept current with the dynamic wants, needs and requirements of customers. Furthermore, customer satisfaction data is gathered and reported in order to find areas of the IT services that require improvement. Overall, this

process category provides a means for the IT enterprise to understand customer requirements, market IT services to customers, and monitor the quality of the delivered IT services.

[Process 2.1] Stakeholder Requirements Management—

Capture, classify, qualify, promote, and maintain requirements—from the business and for the management of IT activities—for IT services. This also involves providing information on the status of various requirements throughout their lifecycle.

[Process 2.2] Service Marketing and Sales—

Understand the marketplace served by the providers of IT, identify customers, market to them, generate marketing plans for IT services and support the selling of IT services.

Match up customer wants and needs with IT service capabilities, and to sell appropriate IT services.

[Process 2.3] Service Level Management—

Plan, coordinate, draft, agree, monitor and report on SLAs, and to perform the ongoing review of service achievements to help ensure that the required and cost-justifiable service quality is maintained and gradually improved.

[Process 2.4] Customer Satisfaction Management—

Determine whether—and how well—customers are satisfied with the services, solutions and offerings from the providers of IT. Furthermore, the process aims to proactively predict what the customer satisfaction will be—and then ascertain what must be done to maintain or, where appropriate, enhance satisfaction and customer loyalty.

[Category 3] IT Direction

The IT Direction process category is designed to provide guidance on the external technology marketplace, align the IT organization to the business strategy, reduce risk, and provide a mechanism to manage the IT architecture and IT portfolio. Using the business strategy, related business requirements and overall technology trends as key inputs, this process category creates an IT strategy within the manageable constraints of the existing IT architecture and portfolio. In addition to the IT strategy, the IT portfolio and IT architecture are planned, created, implemented, monitored, and continuously improved within

this process category. The IT portfolio includes all items managed by the IT budget, including, but not limited too, the services published to clients via the service catalog, internal services executed within the IT organization, and new and established development initiatives. Moreover, this process category supplies the IT organization with a project management process to manage initiatives driven by the IT strategy, such as development projects. Finally, risks to the IT organization, such as those posed by regulatory requirements, are prioritized and managed through risk mitigation plans.

Through a business-aligned IT strategy, IT architecture and IT portfolio, this process category verifies that the IT enterprise is aligned with the overall business direction. Using these artifacts, it is anticipated that the IT organization will have the capability to clearly communicate to its customers the value of the services they provide, while mitigating the overall risk posture. This process category also helps instill basic project management discipline and controls.

[Process 3.1] IT Strategy—

“To set the goals, and decide on areas of change,”² for IT capability to support the business strategy. The IT strategy should address long- and short-term objectives, business direction and its impact on IT, the IT culture, communications, information, people, processes, technology, development, and partnerships.

[Process 3.2] IT Research and Innovation—

Identify new developments in technology, methods and solutions which have potential business value, conduct research into their applicability and benefit, and to promote viable, innovative concepts in support of business objectives.

[Process 3.3] Architecture Management—

Create, maintain, promote and govern the use of business and IT architecture models and standards, across and within a business’ change programs. IT Architecture Management helps the stakeholder community coordinate and control their IT-related activities, in pursuit of the business’ common goals.

[Process 3.4] Risk Management—

Identify risks associated with the activities of the IT endeavor and to take measured, appropriate actions to mitigate those risks to the desired level of risk tolerance.

[Process 3.5] IT Portfolio Management—

Decide on the set of IT investments, including both long-term and large-scale as well as short-term, limited-scope opportunities, based on the strategic intent and priorities of the business. This includes assessing all applications, services and IT projects that consume resources in order to understand their value to the IT organization.

[Process 3.6] Project Management—

“To plan, organize, monitor, and control all aspects of a project in a continuous process to achieve its objectives.” (Many projects are managed by the IT organization.)³

[Category 4] Solution Development

The Solution Development process category exists to create solutions that are designed to satisfy the requirements of IT customers and stakeholders—including both the development of new solutions and the enhancements or maintenance of existing ones. This can include building or buying the components of solutions, and integrating them for functional capability.

This process category encompasses the engineering and manufacturing of IT products and services and includes the making or buying of solutions, systems, integration, and extensions to existing solutions. Maintenance and end-of-life shutdown activities are also addressed in this category.

The Solution Development process category addresses a broad range of “systems integration” activities, including the integration of hardware components, software and network components, applications development, and other modifications to the computing infrastructure. This process category is designed to accommodate the various levels of the solution’s configuration (for example, individual parts, sub-assemblies, distributed components, etc.) and component types (for example, hardware, software, printed documentation, skills, architectures and designs, etc.).

[Process 4.1] Solution Requirements—

Provide “a systematic approach to finding, documenting, organizing, and tracking a system’s changing requirements”⁴ so that an agreed understanding is reached as to what the solution should accomplish.

[Process 4.2] Solution Analysis and Design—

Create a documented design from agreed-upon solution requirements that describe the performance of solution elements, the acceptance criteria and agreed-upon measurements.

[Process 4.3] Solution Build—

Bring together all of the elements specified by solution design—regardless of whether they are to be created or acquired—for their customization, configuration and integration.

[Process 4.4] Solution Test—

Validate that the solution and its features conform to design specifications and requirements prior to the deployment of the solution, and to verify that selected interim work products meet specified requirements.

Testing is performed throughout the entire lifecycle of the solution, including post-deployment.

[Process 4.5] Solution Acceptance—

Validate that the proposed solution—whether as individual artifacts or in its complete form—meets acceptance criteria at defined checkpoints.

[Category 5] Solution Deployment

The Solution Deployment Category of processes is designed to take solutions from having completed testing and achieved “accepted” status through to deployment as services in their intended “live” environment. This process category contains those process areas that are required to control the various aspects of implementing developed solutions from the initial request through the post-implementation review. The Solution Deployment Category is also designed to provide vital enabling information to other process areas.

Configuration, Change and Release Management are grouped together because their effectiveness requires tight integration. For example: Change Management is not effective in assessing the potential impact of changes without Configuration Management information indicating the relationships between configuration items. Release Management and Change Management are so closely related that neither is effective without the other existing along with it.

[Process 5.1] Change Management—

This process is responsible for controlling and managing Requests for Change (RFC) to the IT environment, from inception through implementation.

A change is anything which alters the status of a configuration item (CI). “Any deliberate action which alters the form, fit, or function of configuration items—typically an addition, modification, movement, or deletion that impacts on the IT environment.”⁵

An RFC is “a means of proposing a change to any component of an IT infrastructure or any aspect of an IT service.”⁶

[Process 5.2] Release Management—

Control the introduction of releases into the production environment and reduce risk associated with the changes.

[Process 5.3] Configuration Management—

Identify, control, maintain and verify the versions of CIs and their relationships in a logical model of the infrastructure and services.⁷

“To provide accurate information on configurations and their documentation to support all the other Service Management processes.”⁸

[Category 6] IT Operational Service

This category contains the operational service processes that can enable daily IT activities using available infrastructure, applications and services to help meet SLAs and business objectives. Managing contact and communications with users is an important function, as these processes sense and respond to day-to-day aspects of operations and events, in addition to quickly and correctly helping to address any incidents and problems that arise.

Operational Service comprises all of the activities and measures necessary to help enable and/or maintain the intended and committed use of the infrastructure, applications and services. To function effectively, the processes in this category require close integration. This includes operational plans and workload balancing, augmented by constant operational monitoring throughout the service delivery. Complex capabilities are combined to help identify, analyze and quickly resolve any anomalies. Operational Service is also

the focal point for receiving and responding to a wide variety of user requests. This process category is vital to helping to enable organizational constructs such as a Service Desk, an Operations Bridge or an Operations Center. Problem Management is included in this group because of its dependence on incident management information. (Problem Management could also have been placed in the IT Resilience Group because it, like the other IT Resilience processes, has a key objective to prevent significant disruptions from disrupting IT infrastructure, applications and services.)

[Process 6.1] Service Execution—

Deliver operational services to IT customers by matching resources to commitments and employing the IT infrastructure to conduct IT operations.

[Process 6.2] Data and Storage Management—

Verify that all data required for providing and supporting operational service are available for use and that data storage facilities can handle normal, expected fluctuations in data volumes and other parameters within their designed tolerances.

[Process 6.3] Event Management—

Identify and prioritize infrastructure, service, business and security events, and to establish the appropriate response to those events—especially responding to conditions that could lead to potential faults or service level exceptions.

[Process 6.4] User Contact Management—

Manage each user contact or interaction with the provider of IT service throughout its lifecycle—user Contact Management is the “front-end” process for an implementation of an IT Service Desk. Incidents are routed to the Incident Management process. Service requests are routed as minor or pre-approved RFCs to the Change Management process. Other inputs from users are can be handled promptly by service desk personnel or routed to the appropriate team.

[Process 6.5] Incident Management—

Focus on the restoration of a service that was or could have been impacted by “any event which is not part of the standard operation of a service, and which causes or could cause an interruption to, or a reduction in, the quality of that service.”⁹

[Process 6.6] Problem Management—

Resolve problems affecting the IT service, both reactively and proactively. Problem Management is designed to find trends in incidents, group those incidents into problems, identify the root causes of problems, and initiate RFCs against those problems.

[Category 7] IT Resilience

The IT Resilience category of processes describes the analysis and proactive planning required to enable resilient infrastructure, applications and services. Each process covers a range of activities from handling everyday adjustments, as required by service operations, through anticipating the potential future demands upon its specific domain.

All of the processes in this category analyze information from a variety of sources and then generate proactive plans designed to reduce risks associated with the potential failure of any component, or group of components, used to deliver services. The processes in this group are also responsible for providing assistance with compliance with (internal and external) laws and regulations, internal policies and procedures, as well as help maintain defined levels of security on information and IT services.

[Process 7.1] Compliance Management—

Provide assistance with adherence to laws and regulations, internal policies and procedures, and stakeholder commitments.

[Process 7.2] Security Management—

Manage “a defined level of security features on information and IT services.”

[Process 7.3] Availability Management—

Understand the IT service availability requirements of the business and to plan, measure, monitor, and continuously strive to improve the availability of the IT infrastructure and supporting organization to help ensure the agreed requirements are consistently met.¹⁰

[Process 7.4] Capacity Management—

Match the capacity of the IT services and infrastructure to the current and future identified needs of the business. Capacity Management focuses on the design and planning of service capacities rather than the operational aspects of service capacity.

[Process 7.5] Facility Management—

Create and maintain a physical environment that houses IT resources and optimizes the capabilities and cost of that environment.

[Process 7.6] IT Service Continuity Management—

The purpose of the Service Continuity Management process is to help ensure that agreed-upon IT services continue to support business requirements in the event of a disruption to the business, based on the committed recovery schedule.

[Category 8] IT Administration

The IT Administration process category brings together the processes which look after many of the non-technically-oriented resources (such as people, finances, contracts, etc.) that support IT service delivery. It is designed to provide the underpinning management of the IT business that builds a foundation for other processes to deliver the IT services that the parent business needs.

The processes in this category help build and manage the necessary infrastructure for controlling IT's assets (such as hardware, software and people). These processes are a necessary part of any endeavor's management system and contain the fundamental management building blocks of any organizational entity—namely, people management, financial and administrative management, asset management, and skills management. Failure in any of these areas of management could lead to the failure of the IT entity within the business. Without these processes, there would be no ability to accomplish the information technology mission of the business, regardless of the technology available.

[Process 8.1] Financial Management—

Provide “the sound stewardship of the IT monetary resources of the organization.”¹¹

[Process 8.2] Asset Management—

Identify, collect, maintain, and report inventory and financial information about IT assets throughout their lifecycle.

[Process 8.3] Supplier Relationship Management—

Develop and exercise working relationships between IT and suppliers in order to make available the external services and products that are required to support IT's service commitment to its customers.

[Process 8.4] Service Pricing and Contract Administration—

Establish a pricing mechanism for the IT entity to sell its services to internal or external customers and to administer the contracts associated with the selling of those services.

[Process 8.5] Workforce Management—

Provide the optimal mix of staffing (resources and skills) that is needed to provide the agreed-upon IT services at the agreed-upon service levels.

[Process 8.6] Knowledge Management—

Verify that the organization's intellectual capital relating to IT is captured, shared, maintained, and institutionalized.



- 1 Michael E Porter, Competitive Advantage. Originally published in 1985.
- 2 IBM Academy Study "Enterprise architecture in the era of on demand": Definition of "strategy"
- 3 from ISO 10006
- 4 Rational Unified Process
- 5 A Dictionary of IT Service Management Terms, Acronyms and Abbreviations (itSMF)
- 6 *ibid.*
- 7 ITIL Service Support, Configuration Management
- re-wording of sentence in 7.1
- 8 ITIL Service Support, Configuration Management
7.1
- 9 ITIL Service Support, Incident Management, 5.2
- Definition of "incident".
- 10 ITIL Service Delivery, Availability Management 8.1.3
- suggested goal statement, with 'these' replaced by 'the agreed'
- 11 ITIL Service Delivery, Financial Management for IT Services 5.1.2

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