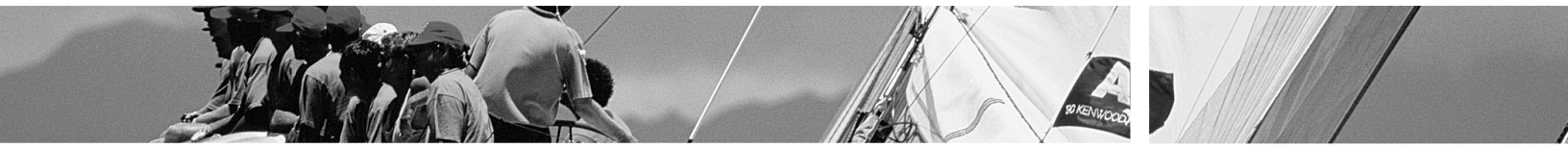
Service management solutions
White paper

Align IT with business goals using the IBM Process Reference Model for IT.



September 2007

IBM Governance and Risk Management
Business alignment, visibility and control

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Overview

The IBM Process Reference Model for IT is a powerful management tool for investigating and identifying areas for IT improvement. It also provides a proven start-point for the design and implementation of new and upgraded IT management capabilities. Working from this common model, IBM IT consultants, architects and specialists in IBM Global Services are equipped with a full range of methods and techniques to help our customers enhance their IT management.

This white paper discusses the important role the IBM Process Reference Model for IT plays in today's organizations and the processes used by IT managers, developers, administrators and other IT professionals. It also refers to recent changes in ITIL® Version 3 and the implications of these changes.

The first part of this white paper includes:

- A brief discussion of some of the strategic drivers that 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 the Process Reference Model for IT, including those resulting in alignment with ITIL.
- A "first look" at the model as a whole — including an outline of the model's eight process categories and list of processes.

In the second part, each of the eight process categories is introduced in greater detail, together with a short description of the processes within that category.

With the Process Reference Model for IT and IBM Service Management solutions, organizations can take advantage of a comprehensive and rigorously engineered process model that describes the inner workings of all IT

processes and their relationships. As such, the Process Reference Model for IT can improve control, enhance processes and better align IT with business goals and priorities.

Recognize strategic drivers for improved IT management

IBM Service Management goes beyond IT Service Management to create a structured approach that delivers better governance and value to the entire business. One example of this structured approach is the Process Reference Model for IT, a comprehensive and rigorously engineered process model that can help today's organizations address a number of significant IT and business challenges.

Rising expectations by CEOs for their CIOs

Executives are increasingly concerned that traditional sources of earnings growth cannot deliver the results necessary to reach announced profit targets across the next strategic period. Initial plans to reach those targets through incremental improvements in top- and bottom-line performance are showing signs of weakness. Many years of cost cutting and rollouts of productivity initiatives now leave little room for further material improvement of operating margins at most firms.

CEOs look to gain sustainable market advantage through the creation of new business models that diverge from or even overturn industry norms.[1] They

"CEOs do not seem intimidated or content simply to cope… [Instead they see change] as both reason and license to expand their innovation horizon…"

IBM Global CEO Study, 2006

expect and rely on CIOs to be core contributors in this endeavor. Based on these CEO expectations, three key considerations emerged for CIOs:

Three key messages for CIOs

1	Deep business model innovation is critical
2	Collaboration, particularly external collaboration, is indispensable
3	Innovation can be ignited by business and technology integration

CIO considerations[2]

CEO expectations can have serious implications for CIOs, in some cases because they portray the IT organization as a hindrance rather than an enabler of innovation. In other cases, they point to a tremendous leadership opportunity for CIOs who can provide strong vision and direction while helping to spearhead enterprise-wide innovation efforts. There is little doubt that CIOs will be called upon to help drive innovation, but the greatest gains will be made by those who proactively construct the right mindset, infrastructure and management system to enable it.

The new baseline for IT performance

While information-based technologies are a critical element of filling the innovation and growth gap, senior executives express concern about high risks and low returns. IT organizations have an opportunity to move from a "commodity/utility" provider role and become a trusted business partner. To realize this potential, however, IT management must deliver "industrial-strength" service resilience, realize the next frontier of sustainable cost-savings and build a flexible, business-relevant technology portfolio.

This new baseline for IT performance is driven by several business-critical challenges:

- **No time for downtime:** With increasing reliance on IT-enabled solutions to support core business functions, IT faces tremendous pressure to improve systems availability and service resilience. While the mandate for reliable service delivery is not new, two acute factors have emerged that directly threaten systems availability. First, a flood of new security threats demonstrated the inadequacy of current risk management practices. Second, rapid increases in the scale and scope of IT services revealed the shortcomings of nonstandard or ad hoc operational processes.
- **Squeezing every last dollar:** Even in times of business optimism, many companies continue to pursue aggressive cost-containment initiatives to improve profitability. While IT's focus on cost-cutting over previous years yielded substantial unit cost reductions, unchecked business demand for increased service quality, volume and functionality has driven total IT spending upward. Delivering further cost-savings 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 imposes significant maintenance and licensing costs on the business, and cripples 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 involved only one or two of these mandates at any given point in time – usually cost. To support today's business growth aspirations, all three mandates will need to be addressed simultaneously. Lacking robust IT management disciplines to tackle these competing strategic priorities, many IT organizations will be forced into making unacceptable trade-offs.

Highlights

A process model for IT management provides a frame of reference for an organization to assess whether it is doing the right things in the proper way

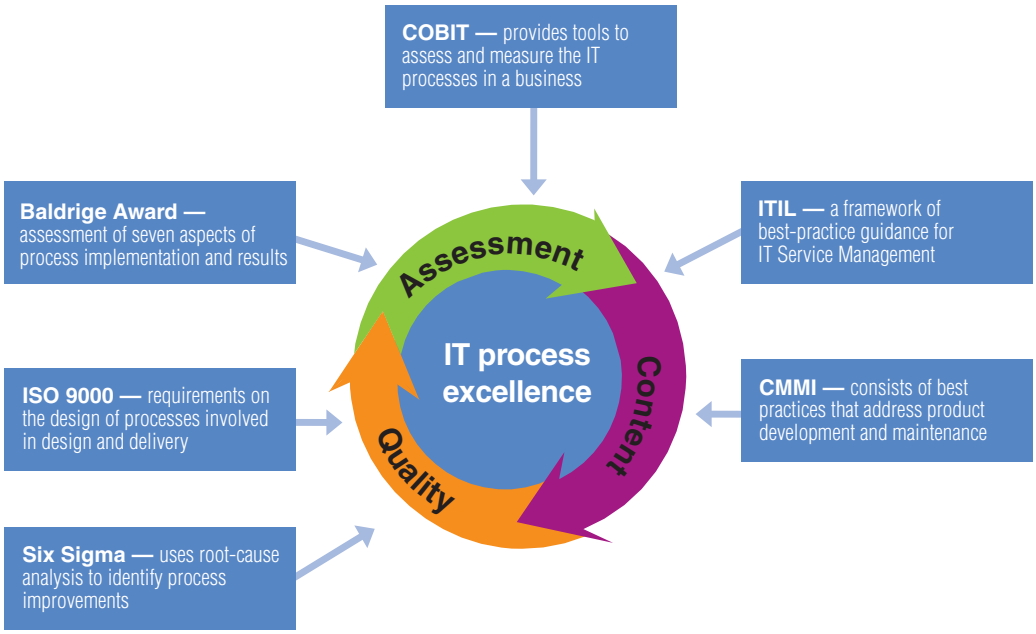
Understand the dimensions of IT management process excellence

IT management is less an art than a science, that is, a standardized set of activities that can be measured and improved upon over time. Process frameworks are valuable tools, having already been proven effective in many other business domains such as manufacturing, accounting and customer service. 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 whether it is doing the right things in the proper way.

There is currently a variety of process frameworks and quality management systems for managing IT. Some of the more popular IT-specific frameworks include IT Infrastructure Library® (ITIL), Capability Maturity Model

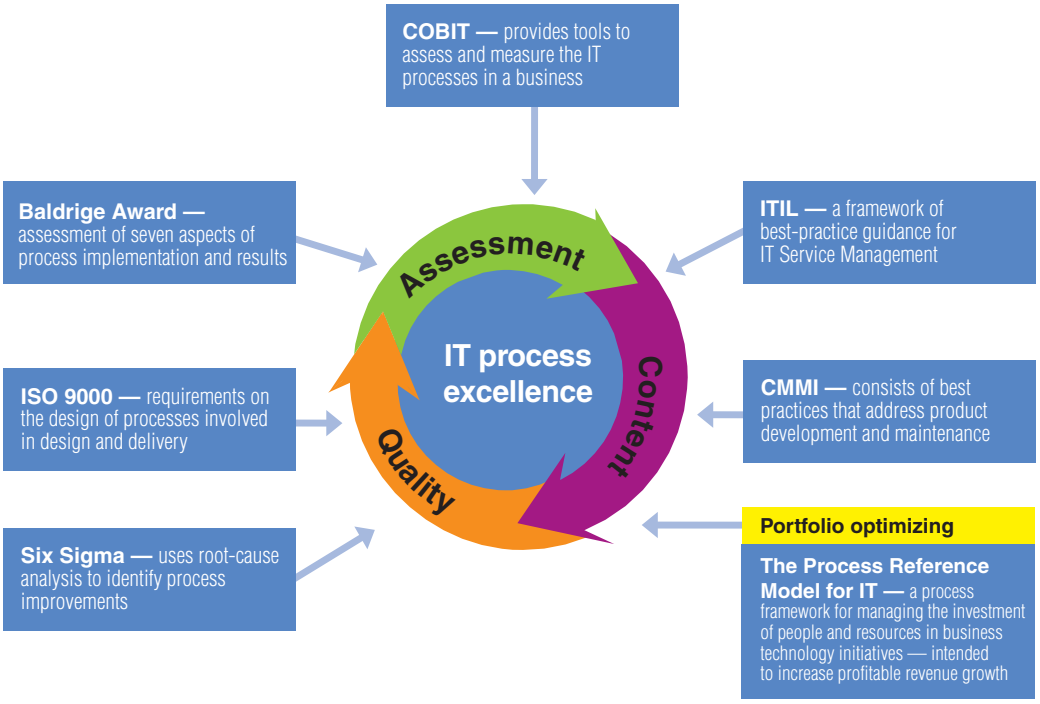
Integration (CMMI®) and Control Objectives for Information and related Technology (COBIT®). Others such as Six Sigma, ISO 9000 and the Malcolm Baldrige Award are often leveraged in IT as part of a firm-wide initiative. They provide a range of approaches, which can illuminate IT management.

Frameworks for IT process excellence



The Process Reference Model for IT extends IT management process frameworks beyond operational efficiency to investment optimization. Using a portfolio lens, the Process Reference Model for 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 while recognizing the reality of multisourced service provision.

Adding the Process Reference Model for IT to the process frameworks



Extend the IT management process beyond ITIL

ITIL 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. Formerly known as the "Information Technology Infrastructure Library," it reached V3 in May 2007. During the lifetime of ITIL V2 (from the early '90s), it established widespread industry acceptance and became the basis for the first international standard on IT Service Management, known as ISO/IEC 20000.[3]

ITIL identifies best practices in IT and describes a systematic approach to creating a service oriented culture and practice for IT service management. The V2 library emphasizes, from a service provision perspective, the central importance of meeting business requirements economically. In V3, the V2 practice areas plus additional topics are presented against an organizing structure that follows the service life cycle.

Highlights

The Process Reference Model for IT identifies the set of IT management processes required for changing business and technology conditions while managing the complexity of existing systems

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. The Process Reference Model for 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 the complexity of existing systems.

This new focus is reflected in a number of critical changes in services delivery and management:

- **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 percent of vulnerabilities. IT management exemplars institutionalize formal risk management processes to ensure business participation in risk acceptance and investment trade-off decisions.
- **From order taker to services portfolio manager:** IT management exemplars "build-in" complexity reduction into IT planning to ensure portfolio relevance and agility. Overall business strategy and trend information is used to guide the long-term IT portfolio strategy. IT management exemplars provide advance visibility into service portfolio changes to enable business customers to make informed consumption decisions, thereby improving infrastructure demand forecasting.
- **From centralized, dedicated staffing to seamless, on demand global sourcing:** IT management exemplars develop operational excellence and standardization in order to enable large-scale savings from exploiting hybrid sourcing.

The Process Reference Model for IT V2 already embraces the service life-cycle concept inherent to ITIL V3, as will be seen in the section below on "Process Categories." As companies work to adopt and adapt other concepts and innovations from ITIL V3, we at IBM anticipate that the next version of the Process Reference Model for IT will require incremental extension rather than fundamental rework.

Review key principles and design points for the Process Reference Model for IT

One of the key concepts behind the Process Reference Model for IT is the understanding that IT may be viewed as an essential component of any business, and that it can be managed as an asset.

The guiding principles underlying the new process model include the following assertions:

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

Highlights

In terms of design points, the Process Reference Model for IT is intended to satisfy the following key design characteristics:

- The model is comprehensive.
- The model is holistic.
- The model is neutral with regard to technologies and organizational structure.
- The model is scalable.
- The model is flexible.
- It is not directly implementable.

We should also mention that the Process Reference Model for IT is based on additional design principles in order to achieve alignment with the ITIL V2 best-practice materials:

- The model is aligned to ITIL Service Management.
- The model includes relevant aspects of other ITIL books.
- The model attempts to resolve inconsistencies existing within the current ITIL Service Management.

(Many of these inconsistencies were identified as part of the requirements gathering phase of the ITIL Refresh program, which resulted in the creation of ITIL V3.)

Gain a first look at the model

The Process Reference Model for IT describes the activities performed so that IT provides value to the stakeholding business

The Process Reference Model for IT is an integrated collection of the processes involved in using IT to assist businesses in carrying out many or all of their fundamental purposes. It describes – at a generic level – the activities performed so that IT provides value to the stakeholding business or businesses.

For most businesses, this use of IT has been a means to improve the business processes that underpin their value propositions to the industry segments they serve. For others, IT services have been major value propositions in their own right. As the reach and range of IT-based solutions and services have extended and become pervasive, these two uses of IT have converged.

Accordingly, as IT exploitation becomes synonymous with business success, the basis of this model is to describe IT as a business – and to apply the same business process description techniques to it as for any other business.

Viewpoint of the model

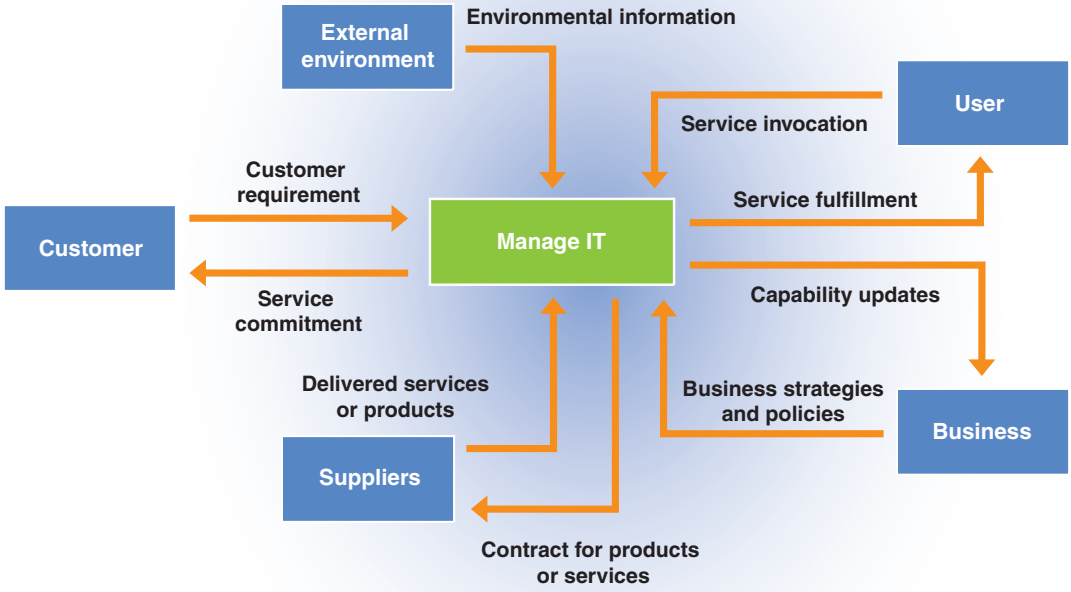
The focal point for all IT activities – and the executive accountable for IT value – is the CIO. As a result, the Process Reference Model for IT considers the work done within IT from his/her perspective. It is only from this vantage point that all aspects of IT are visible. Within IT, all other viewpoints can see only a subset of the complete picture.

The CIO viewpoint has two main perspectives. The first is control over 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 owned standards. A typical example is that of users within a business division developing applications, 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.

The second main perspective is 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.

The context and scope of the Process Reference Model for IT

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

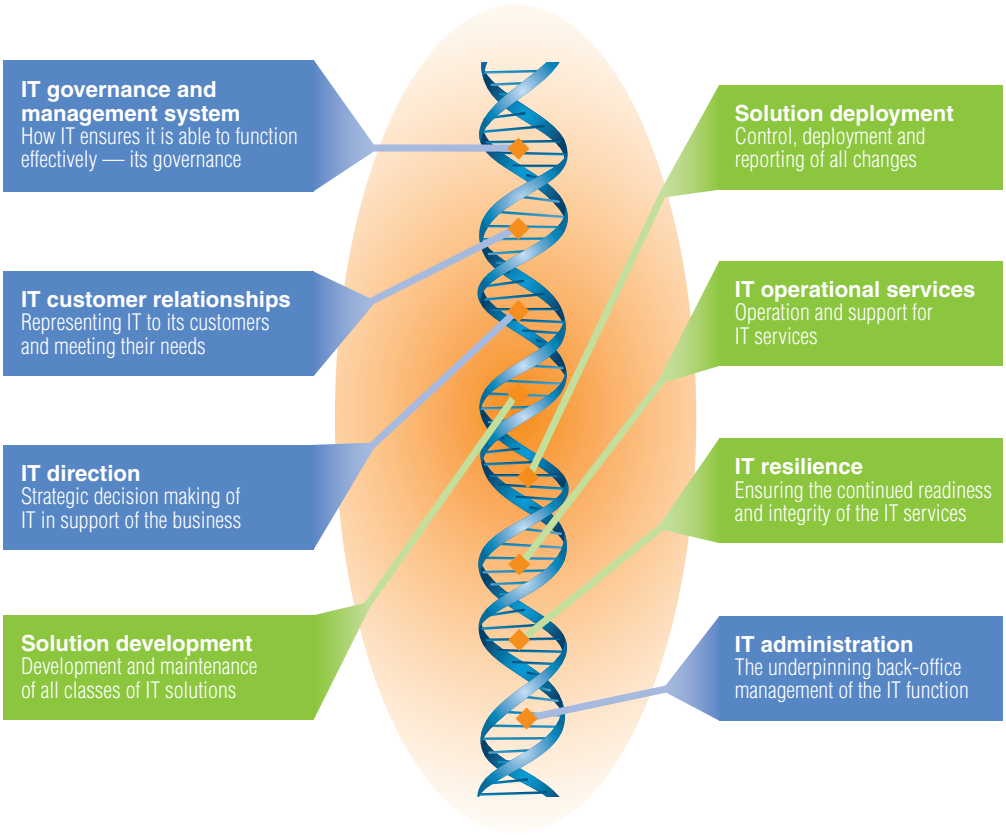


The Process Reference Model for IT defines a comprehensive set of activities that enable effective use of IT within a business.

Drill down into the Process Reference Model for IT

At this point, we will discuss in greater detail the Process Reference Model for IT process categories and the processes for the business of IT.

The Process Reference Model for IT process categories



The process categories

The model presents a framework that uses eight process categories:

- IT governance and management system
- IT customer relationships
- IT direction
- Solution development
- Solution deployment
- IT operational services
- IT resilience
- IT administration

The categories convey the following four concepts:

1. The green categories contain the primary processes – in Porter Value Chain terms[4] – which produce and deliver the service needed by the customer of IT.

2. The most useful decomposition of the primary activities follows a Create – Deploy – Operate – Maintain approach. This produces the following sequence:

   - Solution Development
   - Solution Deployment
   - IT Operational Services
   - IT Resilience

3. The blue categories contain the supporting processes that facilitate the success of the primary processes.

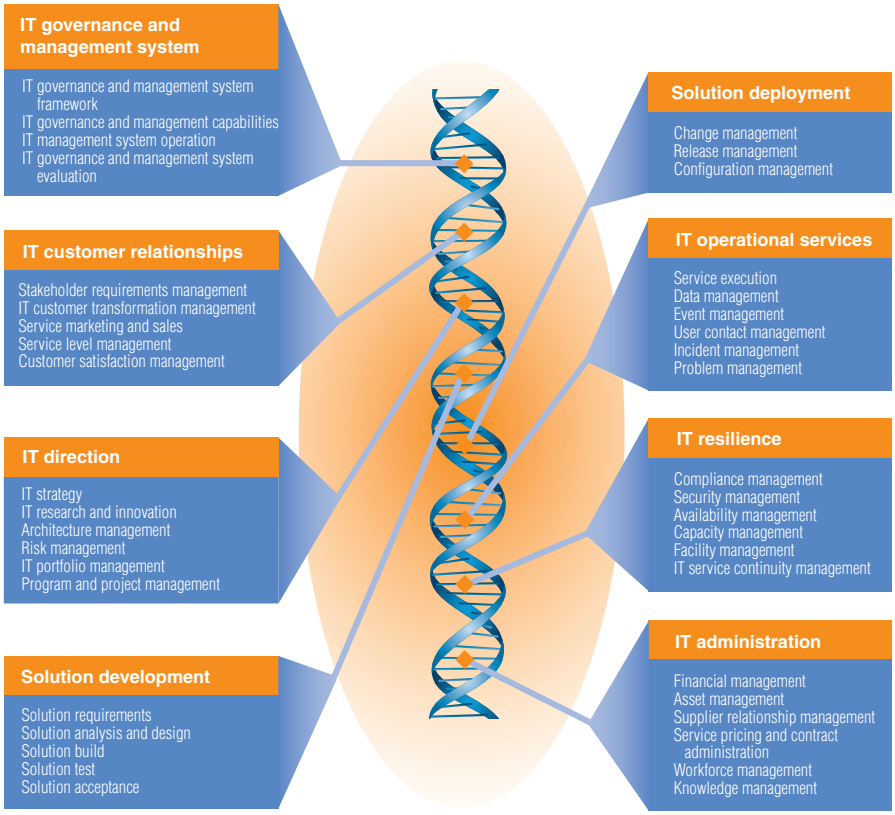
4. The supporting processes are best split into those which focus on the result that IT must achieve – namely, IT Customer Relationships and IT Direction – and those describing the underpinning setup and ongoing maintenance of the IT functional capability (IT Governance and Management System and IT Administration).

The processes for the business of IT

The Process Reference Model for IT contains a total of 41 processes, across the eight categories.

The Process Reference Model for IT Version 2 has a complete further level of decomposition of these processes, into 269 activities. The interactions between all the categories, processes and activities are modeled in nearly 750 inputs, outputs and controls, and several thousand individual linkages.

The Process Reference Model for IT processes



A taxonomy of processes in the Process Reference Model for IT

[A1] IT Governance and Management System

To define a structure of relationships and processes 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, for example, the management model, guiding principles, methods, organization design, information framework, process structure, policies and practices to guide the IT organization towards its stated goals.

"Governance" considers and sets the fundamental direction for the management framework. Governance is a decision rights and accountability framework for directing, controlling and executing IT endeavors in order to determine and achieve desired behaviors and results.

The IT governance and management system process category ensures 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 business 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 ensure future success.

[A11] IT Governance and Management System Framework

To lay the foundation for building the governance and management system for the IT endeavor within 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 and business aspects. Those items considered to fall within the scope of "governance" are used to set the main foundational pillars. 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.

[A12] IT Governance and Management System Capabilities

To define, establish and deploy an ecosystem for governing and managing an IT endeavor or organization. To select the key management model or models that will be used in the IT management system, to develop them to meet the requirements of the governance and management frameworks, and to actually implement the system, for example, assigning roles and responsibilities or process owners.

[A13] IT Management System Operation

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

[A14] IT Governance and Management System Evaluation

To evaluate the execution and implementation of the IT governance and 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 ensure that the system is functioning correctly. It provides the ability to audit all (or any part) of the IT governance and management system.

[A2] IT Customer Relationships

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 category provides the IT enterprise with valuable, current information concerning customer wants, needs and requirements. Once these requirements are captured and

understood, the process category ensures 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 continuously improved within this process category. 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 ensures 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. Overall, this process category provides a means for the IT enterprise to understand customer requirements, assist in customer business transformation, market IT services to customers and monitor the quality of the delivered IT services.

[A21] Stakeholder Requirements Management

To 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 all requirements throughout their life cycle.

[A22] IT Customer Transformation Management

To assist customers of IT in the transformation of their business throughout the life cycle, from the genesis of transformation ideas to the measurement and optimization of the benefits from implemented transformation. While

this process primarily exists to support technology-based transformation, a customer might request assistance under this process for other kinds of transformation.

[A23] Service Marketing and Sales

To understand the marketplace served by the providers of IT, to identify customers, to market to them, to generate marketing plans for IT services and support the selling of IT services. To match up customer wants and needs with IT service capabilities, and to sell appropriate IT services.

[A24] Service Level Management

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

[A25] Customer Satisfaction Management

To determine whether – and how well – customers are satisfied with the services, solutions and offerings from the providers of IT. In addition to this determination, the process aims to proactively predict what the customer satisfaction will be – and then to determine what must be done to maintain or, where appropriate, enhance satisfaction and customer loyalty.

[A3] IT Direction

To provide guidance on the external technology marketplace, align the IT organization to the business strategy, minimize risk exposures 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 to, the services published to clients via the service catalog, internal services executed within the IT organization, and new and established development initiatives. Moreover, the process category supplies the IT organization with a program and project management process to manage initiatives driven by the IT strategy, such as development projects. Finally, risks to the IT organization, including those posed by regulatory requirements, are prioritized and managed through risk mitigation plans.

Through a business-aligned IT strategy, IT architecture and IT portfolio, the process category ensures that the IT enterprise is aligned with the overall business direction. Using these artifacts, 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 instills basic project management discipline and controls.

[A31] IT Strategy

"To set the goals, and decide on areas of change,"[5] in terms of IT's support for 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.

[A32] IT Research and Innovation

To 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.

[A33] Architecture Management

To create, maintain, promote and govern the use of IT architecture models and standards, across and within a business's change programs. IT architecture thus helps the stakeholder community coordinate and control their IT-related activities, in pursuit of the business's common goals.

[A34] Risk Management

To 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.

[A35] IT Portfolio Management

To 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.

[A36] Program and Project Management

To plan and oversee programs and projects in support of their objectives. Programs and projects are similar in that they both require planning and oversight. However, they are different in a number of ways.

Projects are a temporary endeavor with a simple management structure, whereas programs are ongoing. They have a more complex management structure (typically involving a steering committee) and are carried out by a number of projects. In addition, the success or failure of a program often affects the bottom line of a business.

[A4] Solution Development

To create solutions that will satisfy the requirements of IT customers and stakeholders – including both the development of new solutions and the enhancements or maintenance of existing ones. "Create" includes options to build or buy the components of that solution, and the integration of them for functional capability.

This process category encompasses the engineering and manufacturing of information technology 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 accommodates all levels of the solution's configuration (for example, individual parts, subassemblies or distributed components) and component types (for example, hardware, software, printed documentation, skills, architectures and designs).

[A41] Solution Requirements

To provide a systematic approach to finding, documenting, organizing and tracking a system's changing requirements so that an agreed understanding is reached as to what the solution should do.

[A42] Solution Analysis and Design

To create a documented design from agreed-upon solution requirements that describes the behavior of solution elements, the acceptance criteria and agreed-to measurements.

[A43] Solution Build

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

[A44] Solution Test

To 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 life cycle of the solution, including post-deployment.

[A45] Solution Acceptance

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

[A5] Solution Deployment

To take solutions that have been completely tested and given "accepted" status to their deployment as Services in their intended "live" environment. This process category contains those process areas that are required to control every aspect of implementing developed solutions from the initial request through the post implementation review. This category also provides 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.

[A51] Change Management

To control and manage requests for change (RFCs) to the IT environment, from inception through implementation.

Basically, a change is anything that alters the status of a configuration item (CI). This typically includes anything that adds to, deletes from or modifies the IT infrastructure. The definition of a change is the addition, modification or removal of approved, supported or baselined hardware, network, software, application, environment, system, desktop build or associated documentation.

An RFC is the means for documenting proposed change and actual change activity in the environment. RFCs can be triggered for a wide variety of reasons, from a wide variety of sources. RFCs can be concerned with any part of the infrastructure or with any service or activity.

[A52] Release Management

To control the introduction of releases into the production environment and minimize risk associated with the changes.

[A53] Configuration Management
To maintain and provide accurate information about CIs and their relationships in a logical model.

The definition of a configuration item is a component of the infrastructure that is to be under the control of Configuration Management. Primarily, this includes hardware, software and related documentation. However, it may also include RFCs, SLAs, procedures and other items that need to be controlled. Information about CIs is kept in a configuration management database (CMDB).

[A6] IT Operational Service
To provide the operational service processes that enable daily IT activities using available infrastructure, applications and services to 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 enable and/or maintain the intended and committed use of the infrastructure, applications and services. The processes in this category require close integration to function effectively; operational plans and workload balancing augmented by constant operational monitoring throughout service delivery, combined with complex capabilities to 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 enabling organizational constructs such as a Service Desk or an Operations Bridge or an Operations Center. Problem Management is included in this category because of its dependence on incident management information.

(Problem Management could also have been placed in the IT Resilience Category because it, like the other IT Resilience Processes, has a key objective to prevent significant disruptions to IT infrastructure, applications and services.)

[A61] Service Execution

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

[A62] Data Management

To ensure that all data necessary in providing and supporting business and operational services is available for use and is actively managed from creation/introduction until final disposal/destruction.

[A63] Event Management

To 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.

[A64] User Contact Management

To manage each user contact/interaction with the provider of IT service throughout its life cycle. User Request 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 preapproved RFCs to the Change Management process. Other inputs from users are either handled immediately by service desk personnel or routed to the appropriate team.

[A65] Incident Management

To focus on the restoration of a service affected by any real or potential interruption of the quality of that service.

[A66] Problem Management

To resolve problems affecting the IT service, both reactively and proactively. Problem Management finds trends in incidents, groups those incidents into "problems," identifies the root causes of problems and initiates RFCs against those problems.

[A7] IT Resilience

To provide 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 to minimize risks associated with the potential failure of any component or group of components used to deliver services. The processes in this category are also responsible for ensuring compliance with (internal and external) laws and regulations, internal policies and procedures, as well as maintaining defined levels of security on information and IT services.

[A71] Compliance Management

To ensure adherence with laws and regulations, internal policies and procedures, and stakeholder commitments.

[A72] Security Management

To identify security threats, vulnerabilities and risks, to develop an overall approach to counter and handle them, and to operate security protections and mechanisms that meet the desired level of confidentiality, availability and integrity for information and IT services.

[A73] Availability Management

To enhance the availability of services by planning long-term service availability, measuring and monitoring service availability, and by formulating service availability requirements.

[A74] Capacity Management

To 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.

[A75] Facility Management

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

[A76] IT Service Continuity Management

To ensure that agreed-to IT Services continue to support business requirements in the event of a disruption to the business, based on the committed recovery schedule.

[A8] IT Administration

To bring together the processes which look after many of the nontechnically oriented resources (such as people, finances, contracts and more) that support IT service delivery. It provides the underpinning management of the IT business, which 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.

[A81] Financial Management

To provide effective control of IT financial resources, including accounting, charging and collection for IT services.

[A82] Asset Management

To identify, collect, maintain and report inventory and financial information about IT assets throughout their life cycle.

[A83] Supplier Relationship Management

To 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.

[A84] Service Pricing and Contract Administration

To 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.

[A85] Workforce Management

To 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.

[A86] Knowledge Management

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

Summary

As a part of IBM Service Management, the Process Reference Model for IT provides IBM IT consultants, architects and specialists in IBM Global Services with methods and techniques to help our customers enhance their IT management. With the Process Reference Model for IT, customers can:

- Take advantage of a comprehensive, carefully engineered process model that describes IT processes across the enterprise.
- Develop superior control over IT processes. As such, the Process Reference Model for IT can improve control, enhance processes and better align IT with business goals and priorities.
- Explain and represent IT initiatives and benefits to business units and stakeholders.
- More effectively align IT processes with business priorities.

For more information

To learn more about IBM Service Management and the IBM Process Reference Model for IT, contact your IBM representative or IBM Business Partner, or visit **ibm.com**

About IBM solutions for enabling IT governance and risk management

IBM enables IT organizations to support governance and risk management by aligning IT policies, processes and projects with business goals. Organizations can leverage IBM services, software and hardware to plan, execute and manage initiatives for IT service management, business resilience and security across the enterprise. Organizations of every size can benefit from flexible, modular IBM offerings that span business management, IT development and IT operations and draw on extensive customer experience, best practices and open standards–based technology. IBM helps clients implement the right IT solutions to achieve rapid business results and become a strategic partner in business growth. For more information about IBM Governance and Risk Management, visit **ibm.com**/itsolutions/governance

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Produced in the United States of America
9-07

[1]The IBM Global CEO Study 2006. Survey of 765 CEOs. See www-935.**ibm.com**/services/us/gbs/bus/html/bcs_ceostudy2006.html?re=bcsstrategychange

[2]"CEOs are expanding the innovation horizon: important implications for CIOs." CIO perspectives from the IBM Global CEO Study. See www-935.**ibm.com**/services/us/imc/html/cio-implications.html?ca=WMYS&re=GTSHub#-2

[3]ISO/IEC 20000 has two parts: ISO/IEC 20000-1:2005 is a specification for a service provider to deliver managed services, and ISO/IEC 20000-2:2005 provides guidance and offers assistance to service providers planning service improvements or to be audited against ISO/IEC 20000-1.

GMW10425-USEN-00