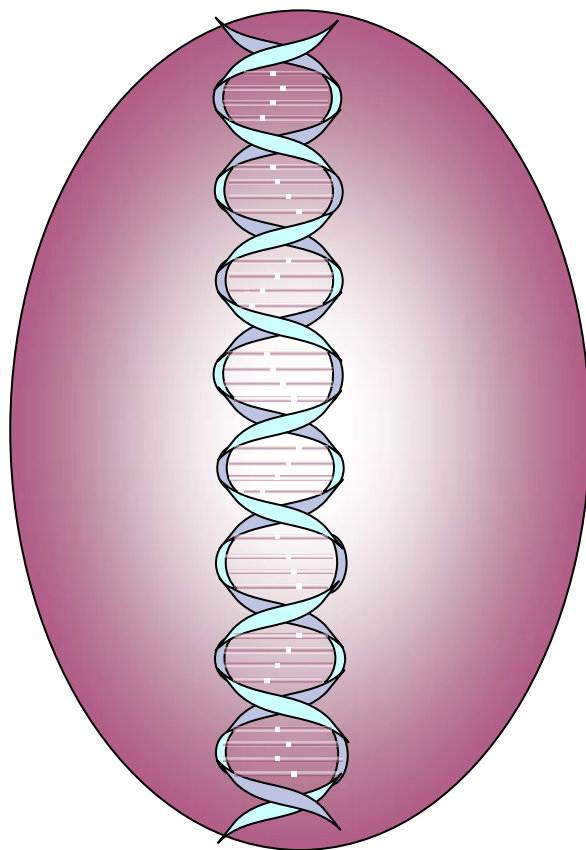**IBM**

INTRODUCING THE IBM PROCESS REFERENCE MODEL FOR IT

V2

PRM-IT – Sequencing the DNA of IT Management

PRM-IT

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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 IT Management domain. As such, it contains a foundational examination of the IT Process topic. It is for this reason that the graphical image of the DNA double helix over the basic building block of a cell is being used.

What Does This Introduction Contain?

There are two main parts to this document.

The first part has four sections, which consider:

- 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 ITIL® [1]

- A 'first look' at the model, as a whole – including an outline of the model's process categories and list of processes.

In the second part, each process category is introduced, together with a short description of each process within that category.

Who Should Read It?

An understanding of the full range of the processes relevant to IT within any business is of value to those within the IT function responsible for the specification, creation and delivery of IT services – whether at the CIO and IT executive level, considering the direction and overall management of IT, or working within any of its competencies, needing to interface with other parts of the IT value chain or value net.

Equally, the stakeholders within the business of this IT capability will benefit from greater insight into how IT serves them. This insight will enable them better to influence IT decisions and activities, to their ultimate benefit.

What Happens Next?

PRM-IT – at levels of exposition ranging from this brief introduction through to the full detail in the underlying, rigorously-engineered IDEF0 model – is a powerful management tool for purposes such 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.

IBM's IT consultants, architects and specialists in IBM Global Services – working from this common base – are equipped with a full range of methods, techniques and tools to assist our customers achieve these purposes.

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[1] 'ITIL' and 'IT Infrastructure Library' are Registered Trade Marks of the UK's Office of Government Commerce.

Managing Complexity to Inflect Value Growth

Time to Prime the Pump – Growth Targets at Risk

Executives are increasingly concerned that traditional sources of earnings growth cannot 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 performance 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 most 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. Put together, these trends suggest a "growth gap" that companies must quickly address or risk disappointing their investor expectations.
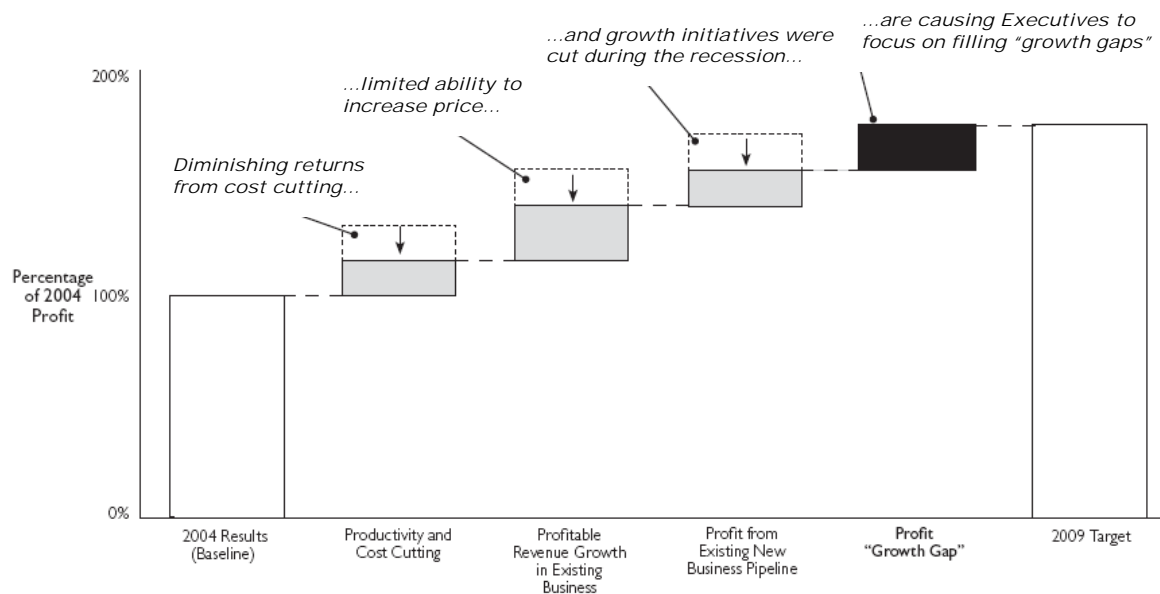
Figure 1   An Increasing Growth Gap

The Era of Competing Strategic Priorities

Analyst predictions suggest that corporate income will have reached a 5-year high in 2004[2] . Executives are looking for new business initiatives to rebuild the long-term growth prospects of their firms and technology-enabled business designs will play a dominant role. While information-based technologies are a critical element of filling the growth gap, senior executives express concern about the 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.

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[2] Bureau of Economic Analysis; Thomson Financial; Mergerstat; Prudential Securities; Standard and Poor's; Working Council for CFOs Business Conditions Survey, Q2 2004; The New York Times.

- **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 recently emerged which 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 non-standard or ad hoc operational processes.

- **Squeezing Every Last Dollar**

  Despite returning business optimism in 2005, many companies continue to pursue aggressive cost-containment initiatives to improve profitability. While IT's focus on cost-cutting over the previous two 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 1990's 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 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 most accomplished firms at IT Management treat the function as less an art than a science, a standardized set of activities that can be measured and improved upon over time. 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 whether it is doing the right things and whether it is doing those things right.

There are 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 Integrated (CMMI®[3]), Control Objectives for Information and Related Technology (CobiT™[4]). 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.

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[3] CMMI is a Registered Trademark of Carnegie Mellon University Software Engineering Institute

[4] CobiT is a Trademark of ISACA (Information Systems Audit and Control Association) and the IT Governance Institute

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CobiT – provides tools to
assess and measure the IT
processes in a business

Baldrige Award – assessment
of seven aspects of process
implementation and results

ITIL – a framework of **best
practice** guidance for IT
Service Management

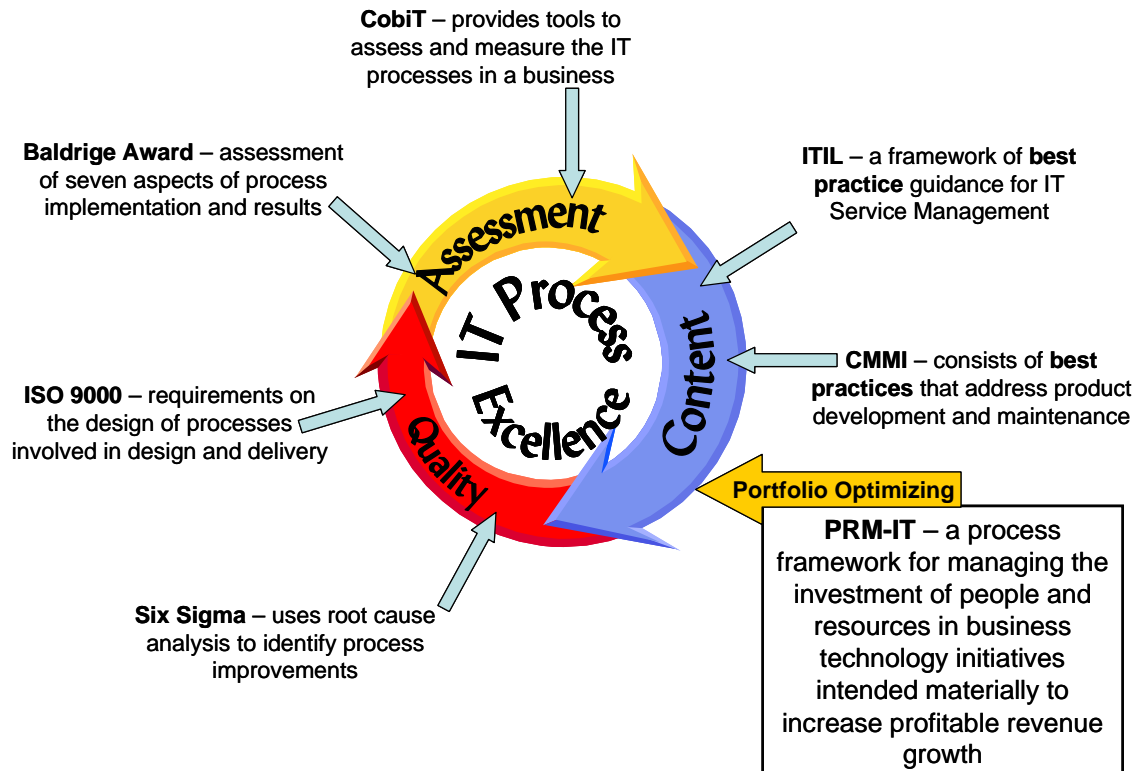ISO 9000 – requirements on
the design of processes
involved in design and delivery

CMMI – consists of **best
practices** that address product
development and maintenance

Six Sigma – uses root cause
analysis to identify process
improvements
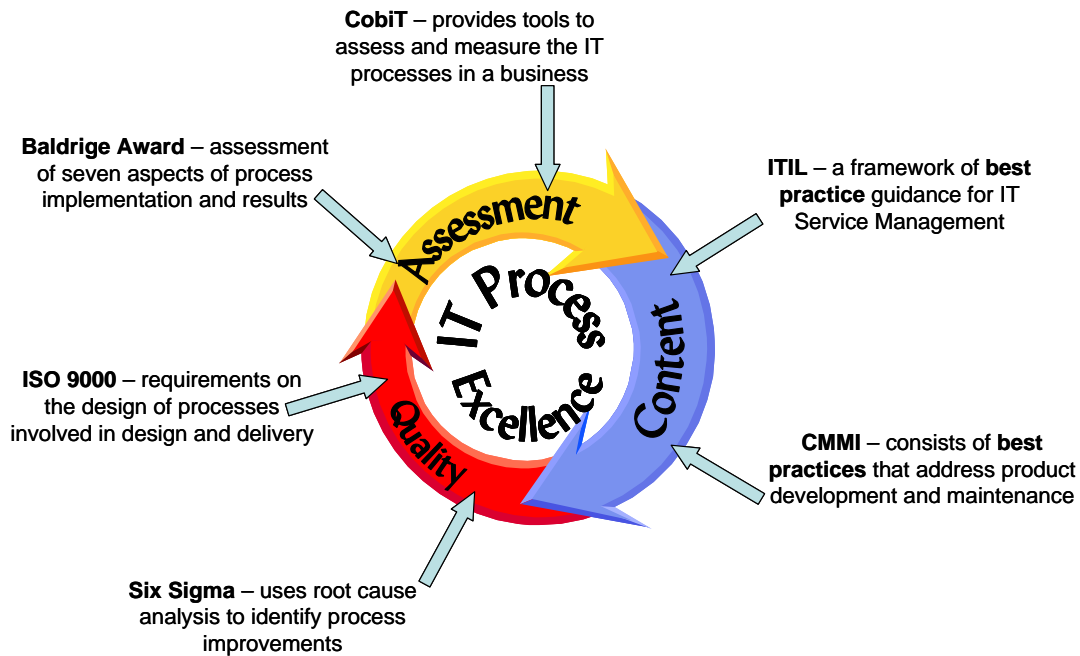
Figure 2   Frameworks for IT Process Excellence

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.

CobiT – provides tools to
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Portfolio Optimizing

PRM-IT – a process
framework for managing the
investment of people and
resources in business
technology initiatives
intended materially to
increase profitable revenue
growth

Figure 3   Adding PRM-IT to the Process Frameworks

Beyond ITIL: Driving IT Management Process Excellence

The Information Technology 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-90's, 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.

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. 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 existing systems complexity.

- **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 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 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.

Principles and Design Points for the Model

Guiding Principles

One of the key concepts behind the new Process Reference Model 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:

1. **Regardless of organization or technology, there is a fundamental set of processes necessary to manage any information technology environment**

2. **These processes do not exist or function in isolation, but in fact they inter-relate and interact with one another.**

3. **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. Implementation specific context will always be required to make those judgments.**

4. **Nevertheless, 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:

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

Alignment with ITIL

The model is based on some additional design principles in order to achieve alignment with the ITIL best practice materials.

- This model is aligned to ITIL Service Management
- This model includes relevant aspects of other ITIL books
- This model attempts to resolve inconsistencies which exist within the current ITIL Service Management. Many of these inconsistencies were identified as part of the requirements gathering phase of the ITIL Refresh programme).

A First Look at the Model

Model Purpose

The IBM Process Reference Model for IT (PRM-IT) is an integrated collection of the processes involved in using Information Technology (IT) to assist businesses in carrying out many or all of their fundamental purposes. It describes – at a generic level – the activities which are performed in order that IT provides value to the stakeholding business or businesses.

For most such 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. As the reach and range of IT-based solutions and services has extended and become, to 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 undertakings as if a business in its own right – 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. 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.

The CIO viewpoint has two main perspectives:

1. 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.

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.

The Context and Scope of PRM-IT

The model focuses on all of the potential activities which could occur within the box "**Manage IT"** below, but also recognizes that many of its workings rely upon interactions with other parties ('external agents').
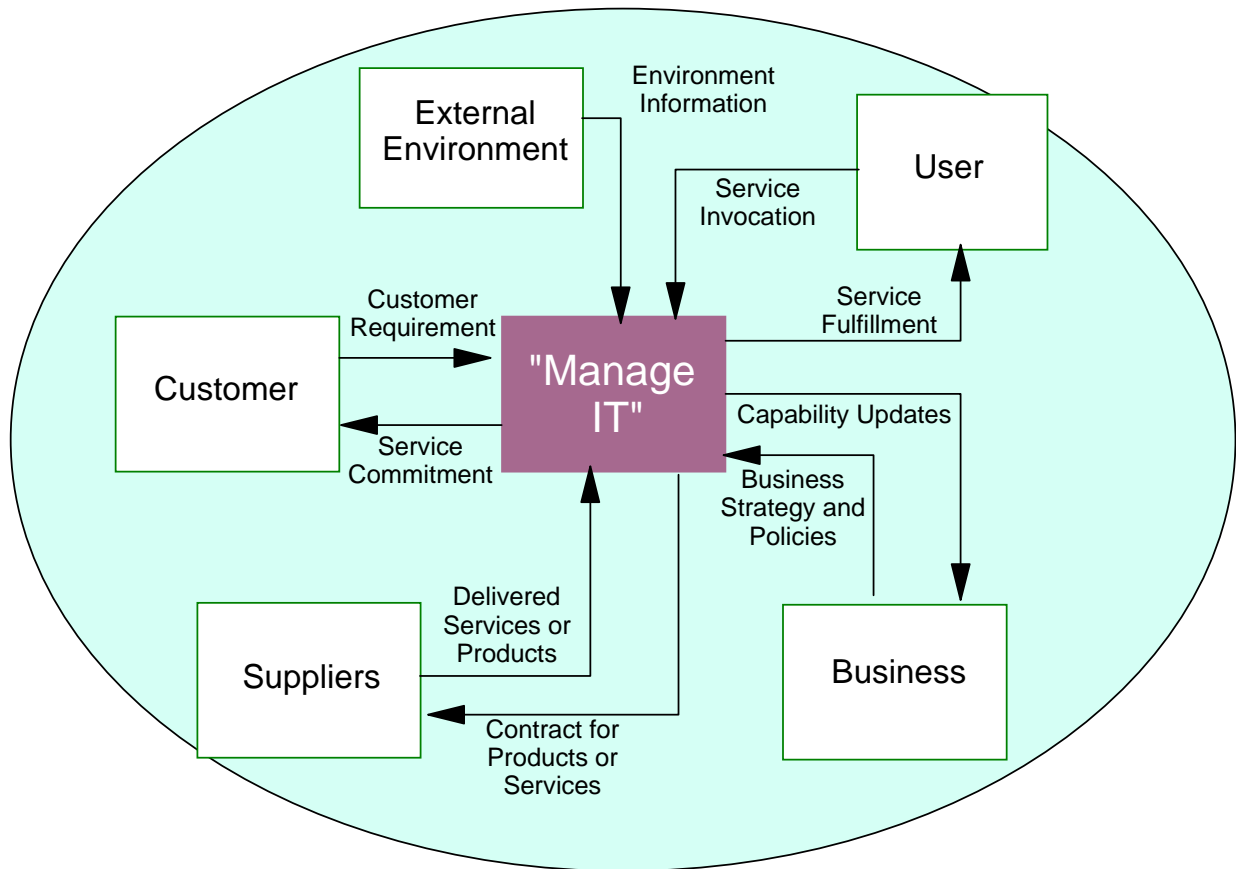
Figure 4   **PRM-IT defines a comprehensive set of activities that enable effective use of IT within a business**

Drilling into the Model – The Process Categories

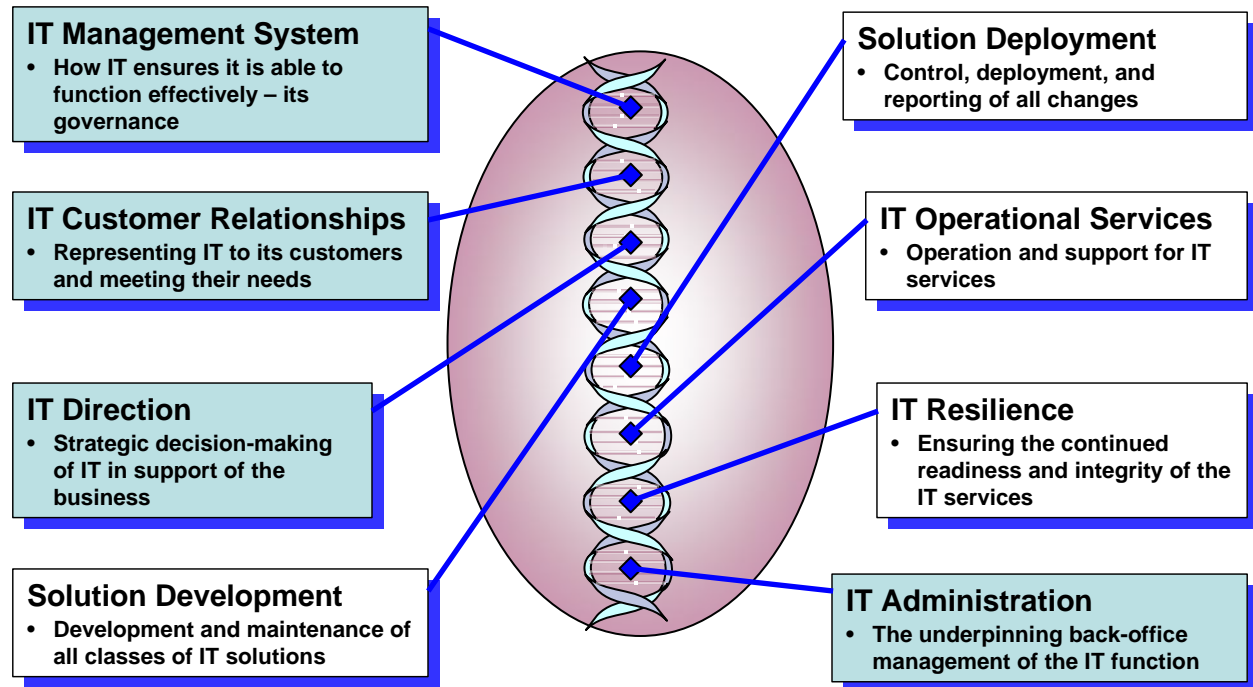PRM-IT presents a framework that uses eight process categories:

IT Management System
- How IT ensures it is able to function effectively – its governance

Solution Deployment
- Control, deployment, and reporting of all changes

IT Customer Relationships
- Representing IT to its customers and meeting their needs

IT Operational Services
- Operation and support for IT services

IT Direction
- Strategic decision-making of IT in support of the business

IT Resilience
- Ensuring the continued readiness and integrity of the IT services

Solution Development
- Development and maintenance of all classes of IT solutions

IT Administration
- The underpinning back-office management of the IT function

Figure 5	PRM-IT Process Categories

The categories convey the following concepts:

1. The categories with no internal shading contain the primary processes – in Porter Value Chain terms[5] – 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:

    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 – namely, IT Customer Relationships and IT Direction – and those which describe the underpinning setup and ongoing maintenance of the IT functional capability (so, IT Management System and IT Administration).

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[5] Michael E Porter, Competitive Advantage. Originally published in 1985.

The Processes for the Business of IT

PRM-IT contains a total of 41 processes, across the eight categories.

IT Governance and Management System

IT Governance and Management System
  Framework
IT Governance and Management Capabilities
IT Management System Operation
IT Governance and Management System
  Evaluation

IT Customer Relationships

Stakeholder Requirements Management
IT Customer Transformation Management
Service Marketing and Sales
Service Level Management
Customer Satisfaction Management

IT Direction

IT Strategy
IT Research and Innovation
Architecture Management
Risk Management
IT Portfolio Management
Program and Project Management

Solution Development

Solution Requirements
Solution Analysis and Design
Solution Build
Solution Test
Solution Acceptance

Solution Deployment

Change Management
Release Management
Configuration Management

IT Operational Services

Service Execution
Data Management
Event Management
User Contact Management
Incident Management
Problem Management

IT Resilience

Compliance Management
Security Management
Availability Management
Capacity Management
Facility Management
IT Service Continuity
  Management

IT Administration

Financial Management
Asset Management
Supplier Relationship Management
Service Pricing and
  Contract Administration
Workforce Management
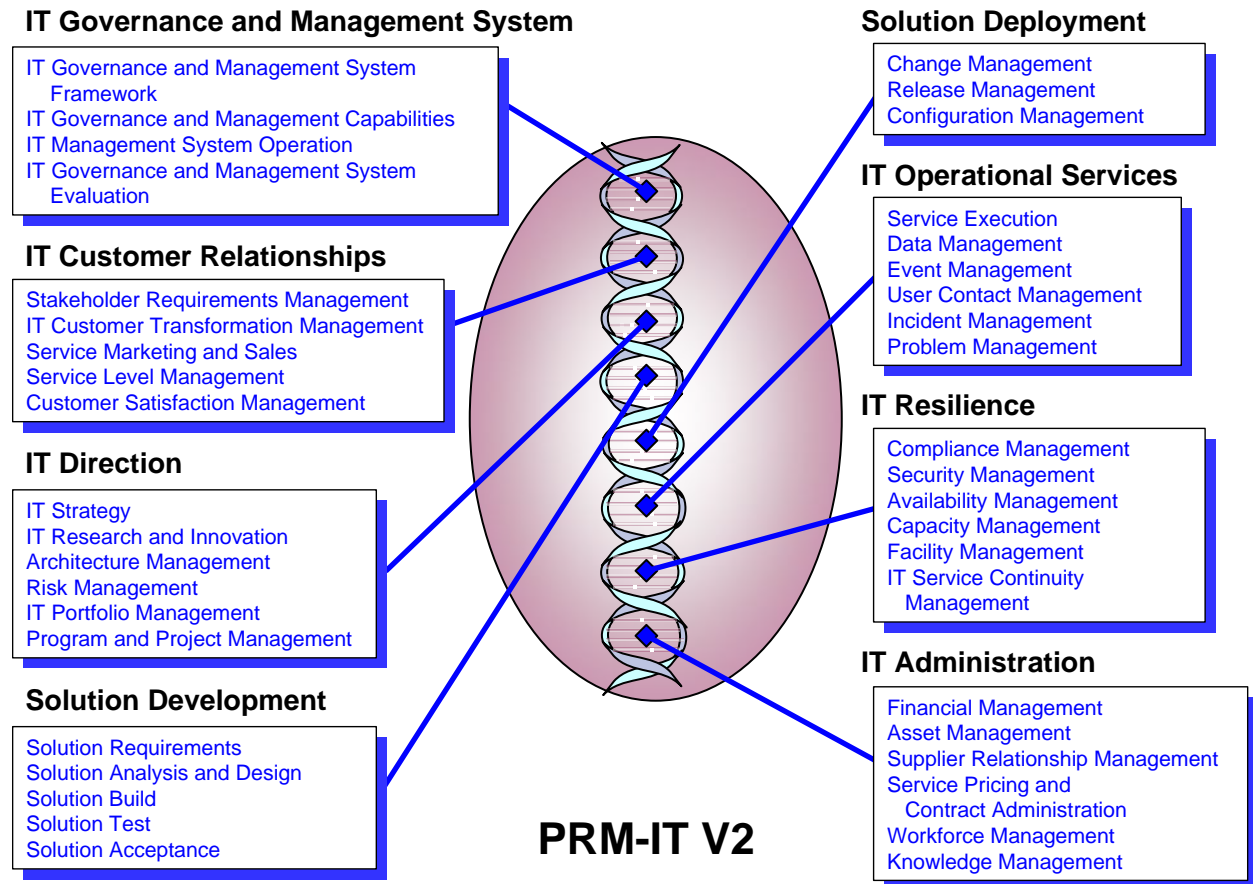Knowledge Management

PRM-IT V2

Figure 6   PRM-IT Processes

PRM-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.

[A1] IT Governance and Management System

The IT governance and management system process category defines 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, as an 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 re-structured 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 as well as business aspects. Those items which are 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, 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 what 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

The IT Customer Relationships process category gives 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 group 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 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 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 lifecycle.

[A22] IT Customer Transformation Management

To assist customers of IT in the transformation of their business throughout the lifecycle from the genesis of transformation ideas through 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, co-ordinate, draft, agree, monitor and report on Service Level Agreements (SLAs), and to perform the on-going 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

The IT Direction process category provides guidance on the external technology marketplace, aligns the IT organization to the business strategy, minimizes risk exposures, and provides 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, the 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, 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 group also instills basic project management discipline and controls.

[A31] IT Strategy

"To set the goals, and decide on areas of change",[6] 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.

[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.

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[6] IBM Academy Study "Enterprise architecture in the era of on demand": Definition of "strategy"

[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, organize, monitor, and control all aspects of a project in a continuous process to achieve its objectives."[7] (Many projects are managed by the IT organization.)

"Program - A group of related projects managed in a coordinated way. Programs usually include an element of ongoing activity. Program Management - Management of a related series of projects over a period of time to accomplish broad goals to which the individual projects contribute." [8]

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[7] from ISO 10006

[8] PMI

[A4] Solution Development

The Solution Development process category exists 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 process.

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, sub-assemblies, distributed components, etc.) and component types (for example, hardware, software, printed documentation, skills, architectures and designs, etc.).

[A41] Solution Requirements

To provide "a systematic approach to finding, documenting, organizing, and tracking a system's changing requirements" [9] 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 describe 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 lifecycle 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

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[9] Rational Unified Process

[A5] Solution Deployment

The Solution Deployment Category of processes takes Solutions from having completed testing and achieved 'accepted' status through to being deployed 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

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". [10]

A request for change is "a means of proposing a Change to any component of an IT infrastructure or any aspect of an IT service". [11]

[A52] Release Management

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

[A53] Configuration Management

To identify, control, maintain and verify the versions of Configuration Items (CIs) and their relationships in a logical model of the infrastructure and services. [12]

"To provide accurate information on configurations and their documentation to support all the other Service Management processes." [13]

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[10] A Dictionary of IT Service Management Terms, Acronyms and Abbreviations (itSMF)

[11] ibid.

[12] ITIL Service Support, Configuration Management - re-wording of sentence in 7.1

[13] ITIL Service Support, Configuration Management 7.1

[A6] IT Operational Service

This category contains the operational service processes that enable daily IT activities using available infrastructure, applications and services to meet Service Level Agreements 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, as is quickly and correctly addressing 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 group 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 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.)

[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 lifecycle. 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 pre-approved 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 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". [14] (Reworded from ITIL definition)

[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 Requests for Change (RFCs) against those problems.

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[14] ITIL Service Support, Incident Management, 5.2 - Definition of "incident".

[A7] 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 group 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 group 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 manage "a defined level of security on information and IT services."

[A73] Availability Management

To 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 ensure the agreed requirements are consistently met. [15]

[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

The purpose of the Service Continuity Management process is 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.

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[15] ITIL Service Delivery, Availability Management 8.1.3 - suggested goal statement, with 'these' replaced by 'the agreed'

[A8] 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 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 "the sound stewardship of the IT monetary resources of the organization." [16]

[A82] Asset Management

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

[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.

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[16] ITIL Service Delivery, Financial Management for IT Services 5.1.2