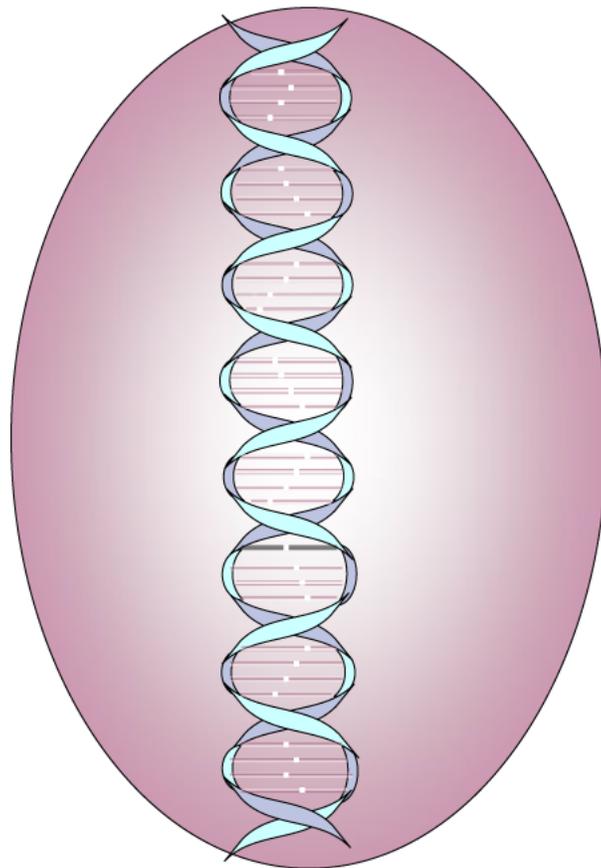


Sequencing the DNA of IT Management:

IBM Process Reference Model for IT (PRM-IT)



Copyright Notice

Copyright © 2007 IBM Corporation, including this documentation and all software. All rights reserved. May only be used pursuant to a Tivoli Systems Software License Agreement, an IBM Software License Agreement, or Addendum for Tivoli Products to IBM Customer or License Agreement. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual, or otherwise, without prior written permission of IBM Corporation. IBM Corporation grants you limited permission to make hardcopy or other reproductions of any machine-readable documentation for your own use, provided that each such reproduction shall carry the IBM Corporation copyright notice. No other rights under copyright are granted without prior written permission of IBM Corporation. The document is not intended for production and is furnished "as is" without warranty of any kind. All warranties on this document are hereby disclaimed, including the warranties of merchantability and fitness for a particular purpose.

Note to U.S. Government Users—Documentation related to restricted rights—Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corporation.

Trademarks

IBM, the IBM logo, the On Demand Business logo, Tivoli, the Tivoli logo, and WebSphere are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries or both.

The following are trademarks of IBM Corporation or Tivoli Systems Inc.: IBM, Tivoli, AIX, Cross-Site, NetView, OS/2, Planet Tivoli, RS/6000, Tivoli Certified, Tivoli Enterprise, Tivoli Ready, TME. In Denmark, Tivoli is a trademark licensed from Kjøbenhavns Sommer - Tivoli A/S.

ITIL[®] is a registered trade mark and a registered community trade mark of the Office of Government Commerce, and is registered in the US Patent and Trademark Office.

© Crown copyright material is reproduced with the permission of the Controller of HMSO and Queen's Printer for Scotland.

© Copyright itSMF[®] 2001, 2007. Copyright material is referenced by permission.

Capability Maturity Model[®] and CMM[®] are registered in the U.S. Patent and Trademark Office by Carnegie Mellon University, CMM IntegrationSM is a service mark of Carnegie Mellon University, and CMMI[®] is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.

Control Objectives for Information and related Technology[®] (COBIT) and Information Systems Audit and Control Association[®] are trademarks of the Information Systems Audit and Control Association (ISACA) and the IT Governance Institute.

Other company, product, and service names may be trademarks or service marks of others.

Notices

References in this publication to Tivoli Systems or IBM products, programs, or services do not imply that they will be available in all countries in which Tivoli Systems or IBM operates. Any reference to these products, programs, or services is not intended to imply that only Tivoli Systems or IBM products, programs, or services can be used. Subject to valid intellectual property or other legally protectable right of Tivoli Systems or IBM, any functionally equivalent product, program, or service can be used instead of the referenced product, program, or service. The evaluation and verification of operation in conjunction with other products, except those expressly designated by Tivoli Systems or IBM, are the responsibility of the user. Tivoli Systems or IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the IBM Director of Licensing, IBM Corporation, North Castle Drive, Armonk, New York 10504-1785, U.S.A.

Preface

About this book.i-i

IDEF0 Node Tree

A0 – Management of the Business of IT 11-2
A1 – IT Governance and Management System 11-3
A2 – IT Customer Relationships. 11-4
A3 – IT Direction. 11-6
A4 – Solution Development 11-8
A5 – Solution Deployment 11-10
A6 – IT Operational Service 11-11
A7 – IT Resilience 11-13
A8 – IT Administration 11-15



Preface

The IBM Process Reference Model for Information Technology (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 the graphical image of the DNA double helix over the basic building block of a cell is used.

About this book

Beyond the Introduction, this book has two main parts. The first part has four sections and includes:

- A brief discussion about some of the strategic drivers that impact the management of IT, and 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 ITIL¹.
- A first look at the model as a whole, including an outline of the model's content (within a wider business), the process categories, and list of processes.
- A brief discussion of what this book can provide to the reader, and how to use it.

In the second part of the book, each process category and its activities are introduced. Given for each category, are the description, mission, goals, and scope, together with a list of the next level of process analysis.

Intended audience

An understanding of the full range of the processes relevant to IT in 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 in the business of this IT capability will benefit from greater insight into how IT serves them. This insight will enable them to better influence IT decisions and activities, to their ultimate benefit.

Next steps

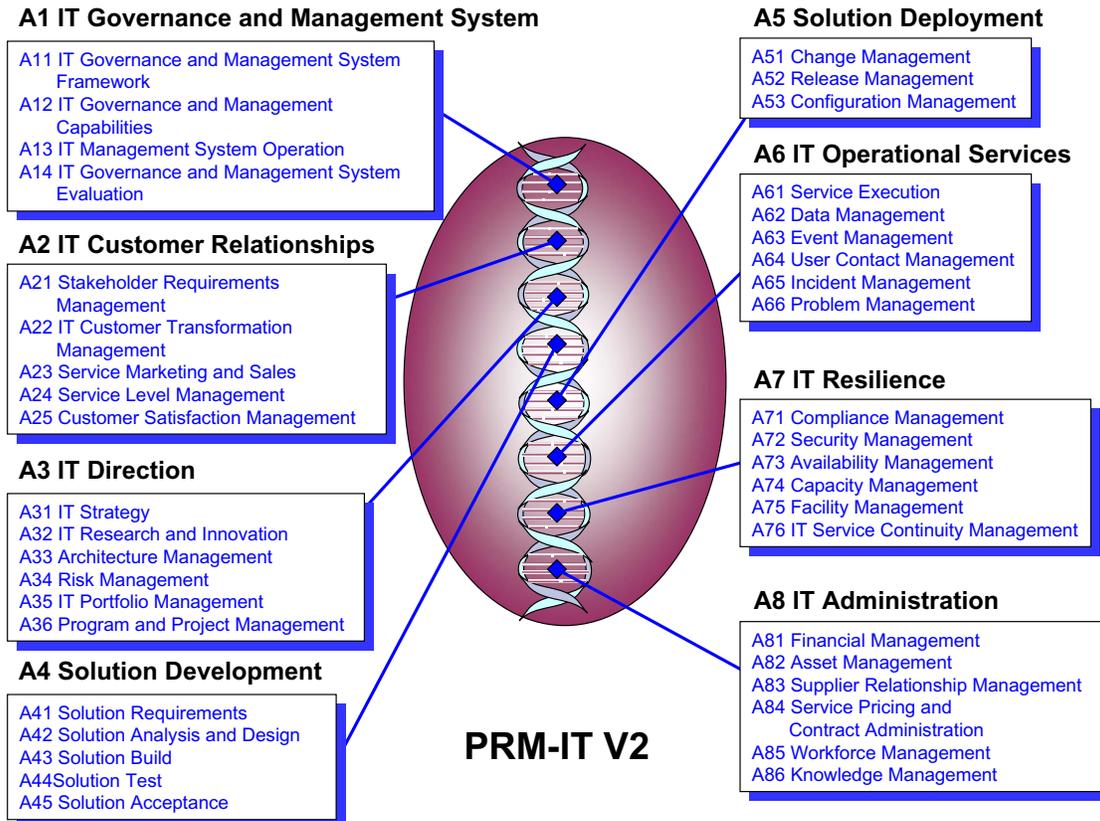
At levels of exposition, ranging from this textual introduction of IT processes through the full detail in the underlying, rigorously engineered IDEFØ model, PRM-IT is a powerful management tool for purposes such as investigating and identifying areas for improvement. PRM-IT also provides a proven starting-point for the design and implementation of new and upgraded IT management capabilities.

1. ITIL and the IT Infrastructure Library are registered trade marks of the Office of Government Commerce in the United Kingdom.

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.



IDEFØ Node Tree



A0 – Management of the Business of IT

A1	IT Governance and Management System
A2	IT Customer Relationships
A3	IT Direction
A4	Solution Development
A5	Solution Deployment
A6	IT Operational Service
A7	IT Resilience
A8	IT Administration

A1 – IT Governance and Management System

A1 – IT MANAGEMENT SYSTEM	
A11	IT Governance and Management System Framework
A111	Define IT Governance Framework
A112	Define IT Management Goals
A113	Establish IT Management Policies
A114	Establish IT Management Practices
A12	IT Governance and Management System Capabilities
A121	Establish IT Governance Capabilities
A122	Establish IT Process Capabilities
A123	Establish IT Organizational Capabilities
A124	Establish IT Management Information Capabilities
A125	Establish IT Operational Environment Capabilities
A126	Establish IT Measurement and Control Capabilities
A13	IT Management System Operation
A131	Produce IT Measurements
A132	Monitor, Analyze and Report IT Outcomes
A133	Operate IT Controls
A14	IT Governance and Management System Evaluation
A141	Collate IT Management System Outcomes
A142	Analyze IT Governance and Management System Performance
A143	Audit IT Governance and Management
A144	Communicate IT Governance and Management System Performance

A2 – IT Customer Relationships

A2 – IT CUSTOMER RELATIONSHIPS	
A21	Stakeholder Requirements Management
A211	Establish Stakeholder Requirements Management Framework
A212	Capture Stakeholder Needs
A213	Transform Needs Into Stakeholder Requirements
A214	Monitor and Report Stakeholder Needs and Requirements
A215	Evaluate Stakeholder Requirements Management Performance
A22	Service Marketing and Sales
A221	Establish Service Marketing and Sales Framework
A222	Analyze Market Wants and Needs
A223	Create Marketing Plan
A224	Execute Marketing Plan
A225	Manage Opportunities and Forecast Sales
A226	Consult and Propose Services Solutions
A227	Negotiate and Close Services Opportunity
A228	Analyze and Report Marketing and Sales Results
A229	Evaluate Service Marketing and Sales Performance
A23	Service Level Management
A231	Establish Service Level Management Framework
A232	Create and Maintain Service Catalog
A233	Create and Maintain Service Level Agreements
A234	Monitor and Report Service Level Achievements
A235	Conduct Service Review
A236	Formulate Service Improvement Plan
A237	Evaluate Service Level Management Performance

A2 – IT CUSTOMER RELATIONSHIPS	
A24	Customer Satisfaction Management
A241	Establish Customer Satisfaction Management Framework
A242	Capture Customer Satisfaction Data
A243	Analyze Customer Satisfaction
A244	Manage Customer Satisfaction Issue Resolution
A245	Assess Customer Satisfaction Patterns
A246	Communicate Customer Satisfaction Management Results
A247	Evaluate Customer Satisfaction Management Performance

A3 – IT Direction

A3 – IT DIRECTION	
A31	IT Strategy
A311	Establish IT Strategy Process Framework
A312	Understand Business Strategy
A313	Determine IT Strategic Potential
A314	Develop IT Strategy Initiatives
A315	Consolidate and Communicate IT Strategy
A316	Monitor and Assess IT Strategy Effectiveness
A317	Evaluate IT Strategy Process Performance
A32	IT Research and Innovation
A321	Establish IT Research and Innovating Framework
A322	Identify IT Research and Innovation Candidates
A323	Qualify Candidates and Define IT Research and Innovation Projects
A324	Perform IT Research and Innovation Project
A325	Promote IT Research and Innovation Results
A326	Evaluate IT Research and Innovation Performance
A33	Architecture Management
A331	Establish Architecture Management Framework
A332	Review Overall Environment and Architecture
A333	Refine Architecture
A334	Define and Maintain Architecture Baselines and Roadmaps
A335	Promote Architecture Transition Initiatives
A336	Govern Architecture Usage
A337	Evaluate Architecture Management Performance

A3 – IT DIRECTION	
A34	Risk Management
A341	Establish Risk Management Framework
A342	Identify Threats, Vulnerabilities, and Risks
A343	Assess Risk
A344	Define Risk Mitigation Plans and Countermeasures
A345	Enact and Operate Risk Countermeasures
A346	Assess Risk Mitigation Results
A347	Evaluate Risk Management Performance
A35	IT Portfolio Management
A351	Establish IT Portfolio Management Framework
A352	Inventory IT Projects and Services
A353	Create and Maintain IT Portfolio Categories
A354	Assess and Prioritize IT Portfolio
A355	Make IT Portfolio Decisions and Commitments
A356	Conduct IT Portfolio Review
A357	Communicate IT Business Value and IT Portfolio Performance
A358	Evaluate IT Portfolio Management Performance
A36	Project Management
A361	Establish Project Management Framework
A362	Define and Initiate Project
A363	Plan Project
A364	Track and Report Project
A365	Control Project
A366	Close Project
A367	Evaluate Project Management Performance

A4 – Solution Development

A4 – SOLUTION DEVELOPMENT	
A41	Solution Requirements
A411	Establish Solution Requirements Framework
A412	Refine and Verify Business Context
A413	Document and Analyze Solution Requirements
A414	Validate Solution Requirements with Stakeholders
A415	Manage Solution Requirements Baseline
A416	Evaluate Solution Requirements Performance
A42	Solution Analysis and Design
A421	Establish Solution Analysis and Design Framework
A422	Create Conceptual Solution Design
A423	Identify and Select Solution Components
A424	Create Detailed Solution Design
A425	Validate Solution Design with Stakeholders
A426	Evaluate Solution Analysis and Design Performance
A43	Solution Build
A431	Establish Solution Build Framework
A432	Develop Solution Build Plan
A433	Prepare and Manage Solution Build Environment
A434	Acquire or Create Solution Components
A435	Integrate Solution Components
A436	Refine and Tune Integrated Solution
A437	Verify Integrated Solution
A438	Evaluate Solution Build Performance

A4 – SOLUTION DEVELOPMENT	
A44	Solution Test
A441	Establish Solution Test Framework
A442	Develop Solution Test Strategy and Plans
A443	Prepare and Mange Solution Test Environment
A444	Perform Solution Test
A445	Analyze and Report Solution Test Results
A446	Evaluate Solution Test Performance
A45	Solution Acceptance
A451	Establish Solution Acceptance Framework
A452	Create Solution Acceptance Plan
A453	Define Solution Acceptance Criteria
A454	Perform Solution Acceptance Review
A455	Certify Solution Acceptance
A456	Evaluate Solution Acceptance Performance

A5 – Solution Deployment

A5 – SOLUTION DEPLOYMENT	
A51	Change Management
A511	Establish Change Management Framework
A512	Accept and Categorize Change
A513	Assess Change
A514	Approve and Schedule Change
A515	Coordinate Change Implementation
A516	Prepare, Distribute, and Install Change
A517	Review and Close Change
A518	Monitor and Report Change Management
A519	Evaluate Change Management Performance
A52	Release Management
A521	Establish Release Management Framework
A522	Plan Release
A523	Design and Build Release
A524	Accept Release
A525	Plan Release Rollout
A526	Communicate, Prepare, and Train for Release
A527	Distribute and Install Release
A528	Evaluate Release Management Performance
A53	Configuration Management
A531	Establish Configuration Management Framework
A532	Identify Configuration Items
A533	Control Configuration Items
A534	Report Configuration Status
A535	Verify and Audit Configuration Items
A536	Evaluate Configuration Management Performance

A6 – IT Operational Service

A6 – IT OPERATIONAL SERVICE	
A61	Service Execution
A611	Establish Service Execution Framework
A612	Manage Workload
A613	Manage Delivery Resources
A614	Deliver Service
A615	Analyze and Report Service Execution Operations
A616	Evaluate Service Execution Performance
A62	Data and Storage Management
A621	Establish Data and Storage Management Framework
A622	Manage Storage Resources
A623	Manage Data Lifecycle
A624	Analyze and Report Data and Storage Operations
A625	Manage Backup and Restore
A626	Evaluate Data and Storage Management Performance
A63	Event Management
A631	Establish Event Management Framework
A632	Detect and Log Event
A633	Examine and Filter Event
A634	Correlate, Escalate, and Process Events
A635	Resolve Event
A636	Close Event
A637	Evaluate Event Management Performance

A6 – IT OPERATIONAL SERVICE	
A64	User Contact Management
A641	Establish User Contact Management Framework
A642	Receive and Assess User Contact
A643	Fulfill or Route User Contact
A644	Monitor and Communicate User Contact Status
A645	Analyze and Report User Contacts
A646	Evaluate User Contact Management Performance
A65	Incident Management
A651	Establish Incident Management Framework
A652	Detect and Record Incident
A653	Classify Incident and Provide Initial Support
A654	Investigate and Diagnose Incident
A655	Resolve Incident and Recover Service
A656	Own, Monitor, Track, and Communicate Incidents
A657	Close Incident
A658	Evaluate Incident Management Performance
A66	Problem Management
A661	Establish Problem Management Framework
A662	Control Problems
A663	Control Known Errors
A664	Manage Problems Proactively
A665	Monitor and Report Problems
A666	Evaluate Problem Management Performance

A7 – IT Resilience

A7 – IT RESILIENCE	
A71	Compliance Management
A711	Establish Compliance Management Framework
A712	Identify Compliance Requirements
A713	Assess Compliance Requirements
A714	Define Compliance Controls Plan
A715	Implement Compliance Controls
A716	Audit Compliance
A717	Evaluate Compliance Management Performance
A72	Security Management
A721	Establish Security Management Framework
A722	Analyze Security Threats, Vulnerabilities, and Risks
A723	Plan Security Practices
A724	Apply Security Protection Mechanisms
A725	Operate Security Protection Mechanisms
A726	Assess and Report Security
A727	Evaluate Security Management Performance
A73	Availability Management
A731	Establish Availability Management Framework
A732	Determine Availability Requirements
A733	Formulate Availability Design Criteria
A734	Define Availability Targets
A735	Establish Availability Measures and Reporting
A736	Monitor, Analyze, and Report Availability
A737	Investigate Unavailability
A738	Produce Availability Plan
A739	Evaluate Availability Management Performance

A7 – IT RESILIENCE	
A74	Capacity Management
A741	Establish Capacity Management Framework
A742	Model and Size Capacity Requirements
A743	Monitor, Analyze, and Report Capacity Usage
A744	Plan and Initiate Service and Resource Tuning
A745	Manage Resource Demand
A746	Produce and Maintain Capacity Plan
A747	Evaluate Capacity Management Performance
A75	Facility Management
A751	Establish Facility Management Framework
A752	Plan Facilities
A753	Manage Facility Request
A754	Operate and Maintain Facility
A755	Evaluate Facility Management Performance
A76	IT Service Continuity Management
A761	Establish IT Service Continuity Management Framework
A762	Identify Business Service Continuity Requirements
A763	Create and Maintain IT Service Continuity Strategy
A764	Create and Maintain IT Service Continuity Plan
A765	Prepare IT Service Continuity Capability
A766	Execute IT Service Continuity Plan
A767	Evaluate IT Service Continuity Management Performance

A8 – IT Administration

A8 – IT ADMINISTRATION	
A81	Financial Management
A811	Establish Financial Management Framework
A812	Plan and Control IT Budgets
A813	Perform IT Financial Accounting
A814	Administer IT Charging
A815	Evaluate Financial Management Performance
A82	Asset Management
A821	Establish Asset Management Framework
A822	Manage Asset Lifecycle
A823	Verify and Audit Asset Information
A824	Analyze and Provide Asset Information
A825	Evaluate Asset Management Performance
A83	Supplier Relationship Management
A831	Establish Supplier Relationship Management Framework
A832	Manage Portfolio of Suppliers
A833	Manage Supplier Contracts
A834	Manage Procurement
A835	Evaluate Supplier Performance
A836	Provide Supplier Product and Service Information
A837	Evaluate Supplier Relationship Management Performance
A84	Service Pricing and Contract Administration
A841	Establish Service Pricing and Contract Administration Framework
A842	Collect Pricing Data
A843	Provide Price Alternatives
A844	Administer Customer Contract Agreement
A845	Monitor Pricing Effects
A846	Evaluate Service Pricing and Contract Administration Performance

A8 – IT ADMINISTRATION	
A85	Workforce Management
A851	Establish Workforce Management Framework
A852	Forecast and Plan Workforce
A853	Administer Human Resources
A854	Manage Skills
A855	Evaluate Workforce Management Performance
A86	Knowledge Management
A861	Establish Knowledge Management Framework
A862	Create and Maintain Knowledge Plan
A863	Acquire Knowledge
A864	Evaluate and Structure Knowledge
A865	Disseminate Knowledge
A866	Evaluate Knowledge Management Performance