

PRM-IT V3 Reference Library - A3 Direction

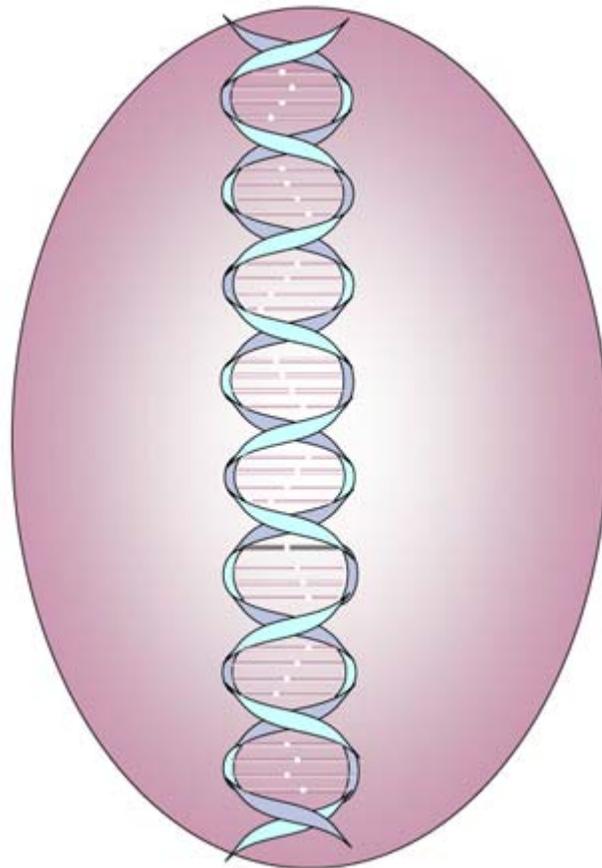
PRM-IT Version 3.0

April, 2008



PRM - IT **IBM Process Reference Model for IT**

Sequencing the DNA of IT Management



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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. 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

This is the fifth book in the PRM-IT Reference Library. As a reference manual, this book provides the complete description of all aspects of the process category..

Each reference manual begins with a summarization of the category, and then further considers each process in turn and the activities within each process.

Details are provided for:

- The definition of each activity
- Each control, input and output
- The sources and destinations of each control, input, and output (thereby showing the model linkages)

The full IDEF0 diagram for each category and each process is included.

The final page is a breakdown of the PRM-IT node tree for this category.

The PRM-IT Reference Library books

The PRM-IT Reference Library consists of thirteen books. The first book is the *General Information Manual*, it is a brief examination of the subject of IT processes, and provides a tour of the model.

The nine reference manuals are A0 through A8. The *A0 Manage IT* book examines the context of the processes for IT, exploring the key external agents — stakeholders and their interactions with IT. The reference manuals A1 through A8 provide the complete description of all aspects of the process categories.

The reference manual *IDEF0 Diagrams* presents the full model in IDEF0 notation, and *IDEF0 Node Tree* shows the ordered list of process categories, processes, and activities.

The final book, the *Glossary*, contains the definition of every process interface object for the model and provides references to where the objects are used.

PRM-IT Reference Library

- | | |
|---------------------------------------|---------------------|
| ■ General Information | ■ A6 Operations |
| ■ A0 Manage IT | ■ A7 Resilience |
| ■ A1 Governance and Management System | ■ A8 Administration |
| ■ A2 Customer Relationships | ■ IDEFØ Node Tree |
| ■ A3 Direction | ■ IDEFØ Diagrams |
| ■ A4 Realization | ■ PRM-IT Glossary |
| ■ A5 Transition | |

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 or IT executive level), and who consider the direction and overall management of IT. Or, individuals who work 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

PRM-IT is a powerful management tool for purposes of 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.

IBM IT consultants, architects, and specialists in global services who, working from this common base, are equipped with a full range of methods, techniques, and tools to assist its customers achieve their purposes.

[A3] Direction

Description

Purpose

The Direction process category provides guidance on the external technology marketplace, aligns the IT outcomes to support the business strategy, minimizes risk exposures, and manages 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. Items put forward for inclusion in the IT Portfolio are managed throughout their life cycle using product management approaches well established in many industries.

The IT portfolio includes all items managed to deliver the IT Strategy, including, but not limited to, the services published to clients through 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.

Rationale

Through a business aligned IT strategy, IT architecture and IT portfolio, this 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.

Value

- Aligns IT endeavors to business goals and strategy
- Identifies and explains new trends and directions in the technology marketplace
- Triggers new initiatives to meet dynamic business and technology requirements
- Incorporates new technology trends into IT strategy and plans
- Establishes architectural guidelines and standards for solutions and services in order to enhance consistency, reuse, and overall value across the range of capabilities, balancing the need for individual solution optimization
- Mitigates IT and business risks efficiently and effectively
- Translates the initiatives into a mix of products (services, solutions) which will be managed through their life cycle from vision and business case to value measurement and retirement
- Optimizes the allocation of IT resources through Portfolio Management
- Articulates the value of IT's contribution to the business
- Ensures methodical project management processes and controls for improved quality and predictability

Controls

- Market Analysis (From: A2 A22 A222)
- SLAs, OLAs, UCs (From: A2 A24 A243)

-
- IT Management Ecosystem (From: A1)
 - Environment Information (From: outside the model)
 - IT Budget (From: A8 A81 A813)
 - Underpinning Contracts (From: A8 A82 A823)
 - Security Policy (From: A7 A72 A722)
 - Compliance Plans and Controls (From: A7 A71 A714)

Inputs

- Service Catalog (From: A2 A23 A235)
- Business Strategy
- Stakeholder Requirements (From: A2 A21 A213)
- Service Level Package (From: A2 A25 A255)
- Business Input (From: outside the model)
- IT Financial Reports (From: A8 A81 A813 A814 A815)
- Service Resilience Plans (From: A7)
- Change Information (From: A5 A51 A518)
- Solution_ Deployed (From: A5 A53 A536)
- Configuration Information (From: A5 A54 A544)
- Project Proposal (From: A2 A22 A25 A255 A26 A264 A33 A5 A51 A515)
- Solution Design (From: A4 A42 A425)
- Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)

Outputs

- IT Business Contribution and Capabilities
- IT Strategy (To: outside the model A1 A11 A111 A112 A113 A114 A12 A121 A122 A123 A124 A125 A13 A131 A132 A133 A14 A142 A2 A21 A211 A22 A221 A23 A231 A24 A241 A26 A261 A27 A271 A316 A32 A321 A323 A33 A332 A334 A34 A341 A35 A352 A36 A361 A366 A37 A371 A4 A41 A411 A413 A42 A421 A43 A431 A44 A441 A45 A451 A5 A51 A511 A7 A71 A711 A713 A72 A721 A73 A731 A74 A741 A75 A751 A76 A761 A8 A81 A811 A82 A83 A831 A84 A841 A842 A85 A851 A852)
- IT Portfolio (To: A1 A12 A122 A123 A124 A125 A126 A13 A131 A132 A133 A14 A142 A2 A21 A211 A213 A22 A221 A222 A223 A226 A23 A231 A232 A233 A24 A241 A243 A25 A251 A254 A255 A26 A261 A263 A27 A271 A31 A313 A314 A32 A322 A324 A33 A331 A366 A4 A42 A421 A8 A81 A811 A82 A822 A83 A831 A85 A852)
- IT Plan (To: A2 A22 A221 A25 A254 A255 A26 A264 A265 A31 A314 A366 A4 A41 A411 A42 A421 A43 A431 A44 A441 A45 A451 A5 A51 A511 A52 A521 A53 A531 A6 A61 A611 A62 A621 A63 A631 A64 A641 A65 A651 A66 A661 A67 A671 A7 A72 A723 A725 A73 A731 A737 A74 A741 A742 A745 A75 A752 A76 A763 A764 A8 A81 A813 A84 A842 A844)
- Change Request (To: A5 A51 A512)
- Project Charter (To: A33 A333 A334 A37 A372 A373 A4 A41 A412 A414)
- Business and IT Models (To: A2 A25 A253 A254 A32 A322 A323 A334 A34 A342 A344 A35 A352 A4 A41 A412 A413 A42 A422 A7 A71 A712 A714 A8 A82 A821 A822)
- IT Research Guidance (To: A1 A11 A114 A12 A122 A123 A124 A125 A126 A2 A21 A213 A22 A222 A25 A252 A26 A263 A31 A313 A33 A332 A333 A8 A84 A844)
- Project Plan (To: A265 A34 A343 A344 A372 A375 A376 A377 A4 A41 A412 A5 A51 A514 A52 A522 A53 A532)

- Architecture Baselines and Roadmaps (To: A1 A11 A114 A12 A121 A122 A123 A124 A125 A2 A22 A221 A31 A313 A314 A332 A333 A335 A336 A36 A361 A4 A41 A411 A412 A413 A42 A43 A431 A44 A441 A443 A45 A451 A5 A51 A513 A514 A52 A522 A523 A524 A54 A541 A542 A55 A551 A6 A62 A621 A63 A631 A64 A641 A66 A661 A663 A664 A665 A7 A72 A723 A73 A732 A734 A736 A74 A742 A743 A75 A752 A76 A763 A764 A8 A84 A842 A844 A85 A852)
- Product Package (To: A2 A23 A24 A243 A5 A52 A522)

Processes

This process category is composed of these processes:

- A31 IT Strategy
- A32 IT Research and Innovation
- A33 Architecture Management
- A34 Risk Management
- A35 Product Management
- A36 Portfolio Management
- A37 Program and Project Management

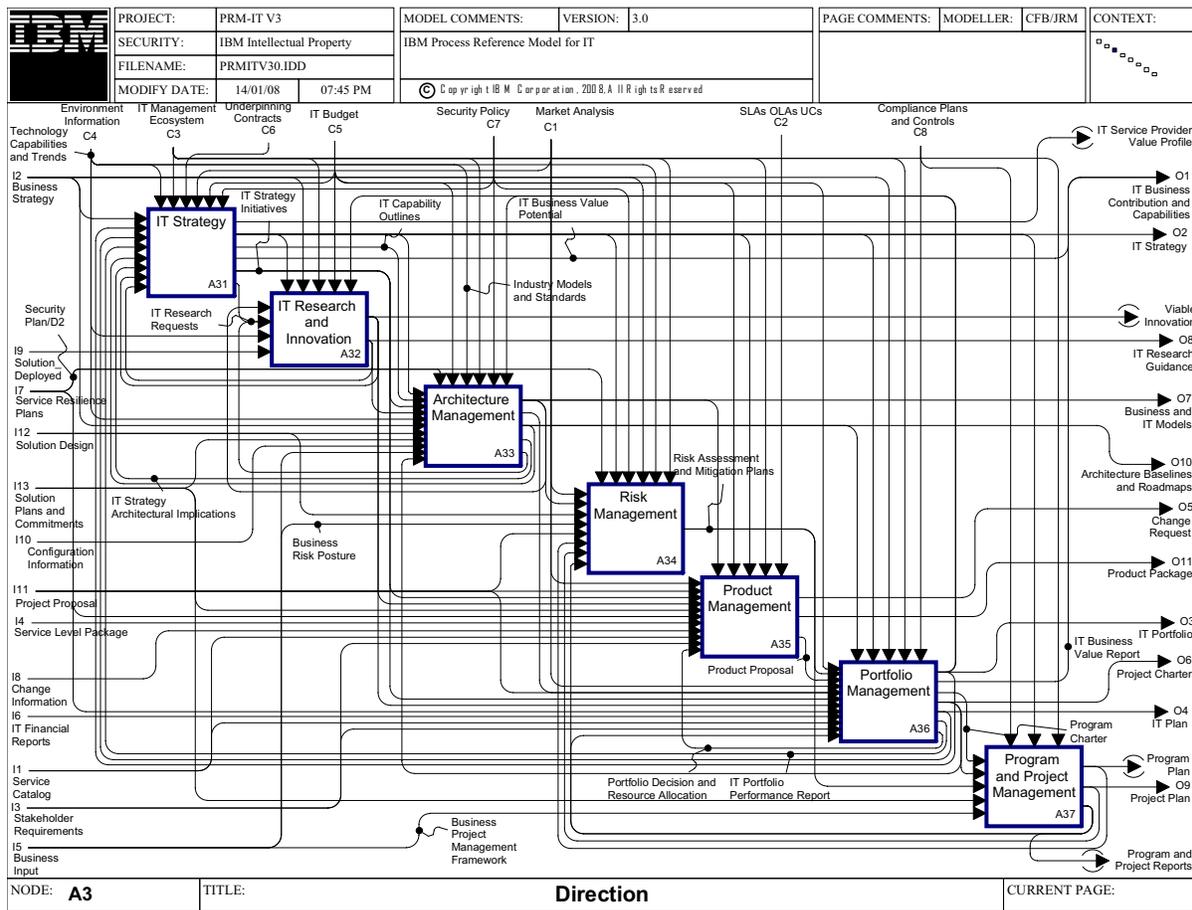


Figure 1. A3 Direction Diagram

[A31] IT Strategy

Purpose

The purpose of the IT Strategy process is to set the direction for the outcomes to be achieved by the use of information technology, ensuring that it supports the business and business strategy to the level desired and funded.

It exists “To set the goals, and decide on areas of change,”¹ for IT capability to support the business strategy.

Definition of an IT Strategy: The collection of goals, policies, and plans that specify how an IT organization should function over a specific period.

Outcomes

As a result of successful implementation of the IT Strategy process:

- The business has an understanding and appreciation of the potential value of information technology to the business. Examples are’s role in providing the business with the capability to achieve competitive advantage, and ensuring the ability to readily respond to changes in the business environment
- All aspects of information technology strategy (such as infrastructure, applications and services) are aligned with the business strategy, and regularly examined to maintain that alignment
- Information technology strategy is cost effective, appropriate, realistic, achievable, business-focused, balanced, and timely
- Clear and concrete short term goals (which are then to be translated into operational plans) can be derived from and are traceable back to specific long term plans.

Scope

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.

Includes

- ◆ Interacting with business strategy
- ◆ Setting strategic goals for IT
- ◆ Creating overarching guidance for specific IT functional areas
- ◆ Understanding the value, both the overall classes and the specific targets, which the business requires IT to provide or support
- ◆ Generating preliminary value propositions for the actual and proposed IT contributions to the business

Excludes

- ◆ The creation of the first level of plans to realize the strategy (Portfolio Management, Product Management)

1. Source: IBM Academy of Technology Study AR221 (2004), “Enterprise Architecture in the era of on demand”. Definition of strategy.

- IT Plan (From: A3 A36 A365)

The set of approved projects and associated schedule, operating plan, service level management commitments, and resource allocation commitments and adjustments for a defined fiscal or planning cycle.
- IT Portfolio Performance Report (From: A36 A367)

A management report describing the actual results of IT portfolio management activities in terms of value realized, balance achieved, and degree of strategic alignment.
- Architecture Baselines and Roadmaps (From: A3 A33 A334)

Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.
- IT Strategy Architectural Implications (From: A33 A333)

An assessment of the implications of architecture changes on the IT Strategy; stated in terms of potential (positive and negative) changes to the value of IT and its alignment to desired business capabilities. For example, it can detail the potential need for compromise on two conflicting aspects of the strategy; only one (or other) of which can be satisfied by the architecture.
- Viable Innovation (From: A32 A325)

Any innovations that seem viable to be adopted by the IT service provider in order to enhance the service to the business (IT Architecture, the IT Portfolio, IT Strategy). The information provided will include analysis and assessment of the potential impact to the business, and to the parameters of the IT service provision, stated in terms of ideas, value and viability.
- IT Research Guidance (From: A3 A32 A325)

Guidance and recommendations about which trends and innovations should or should not be adopted. In other words, a summary of overall research results.

Outputs

- IT Service Provider Value Profile (To: A11 A112 A113 A314)

A model of the offerings and services desired by the business, which incorporates the value provided by the IT Business. The model should express, in a form that profiles the IT Business as an IT Service Provider, and in the style (and with the required attributes) desired by the business. An example of suitable styles is provided by the Commodity, Utility, Partner, and Enabler model.
- IT Strategy (To: outside the model A1 A11 A111 A112 A113 A114 A12 A121 A122 A123 A124 A125 A13 A131 A132 A133 A14 A142 A2 A21 A211 A22 A221 A23 A231 A24 A241 A26 A261 A27 A271 A316 A32 A321 A323 A33 A332 A334 A34 A341 A35 A352 A36 A361 A366 A37 A371 A4 A41 A411 A413 A42 A421 A43 A431 A44 A441 A45 A451 A5 A51 A511 A7 A71 A711 A713 A72 A721 A73 A731 A74 A741 A75 A751 A76 A761 A8 A81 A811 A82 A83 A831 A84 A841 A842 A85 A851 A852)

A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- IT Capability Outlines (To: A314 A33 A332)

A specification of the desired capabilities of the IT entity, stated in a way that is independent to specific implementations of its services, processes, people, tools, organization, and technology. Capabilities should be stated in a consistent form, as in “the ability to perform service X within the specified service level Y.”

- IT Business Value Potential (To: A312)

Statement of potential technology impact on the business strategy, stated in terms of added value, time scales, potential investment costs and business change assessment.
- IT Strategy Initiatives (To: A315 A33 A333 A35 A352 A36 A364)

An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.
- IT Research Requests (To: A32 A322)

Requests from within the business or from any other IT process that trigger the identification and selection of research candidates.

Activities

This process is composed of these activities:

- 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

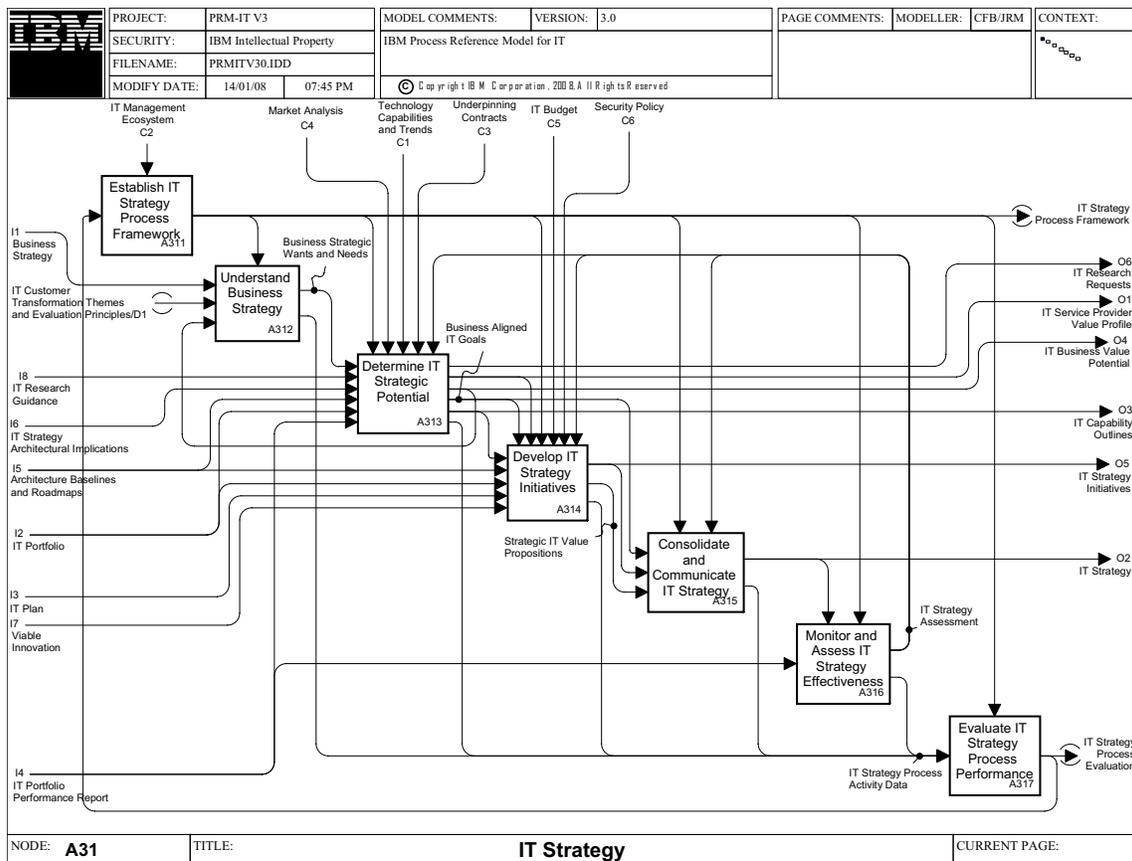


Figure 2. A31 IT Strategy

[A311] Establish IT Strategy Process Framework

Description

Define and maintain a framework of policies and procedures that guides and governs the behavior of the IT Strategy processes. Incorporate mandatory elements from the IT Management Ecosystem.

Define a set of metrics to be used by each process for measurement and reporting of performance.

Review process evaluations based on analysis of current performance, and approve recommendations for improvements. Refine the metrics to drive vitality and cost take out.

Incorporate updated metrics and process change recommendations into the framework and communicate the changes.

Controls

- IT Management Ecosystem (From: A1)

To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.

Inputs

- IT Strategy Process Evaluation (From: A317)

Quantitative and qualitative analysis of the performance of the IT Strategy processes against the evaluation framework. Incorporates recommendations for changes to the framework and changes to the metrics.

Outputs

- IT Strategy Process Framework (To: A312 A313 A314 A315 A316 A317)

A specification of the framework and metrics for measuring and managing the IT Strategy processes and incorporating any mandated elements required by the overall IT management system. Incorporates governance, reporting, standards, methods and review criteria.

[A313] Determine IT Strategic Potential

Description

Develop and maintain a model of IT capabilities. Associate the capability model with the architecture baseline, service catalog, and associated cost metrics.

Determine the fit or gap between current IT capabilities and the strategic wants and needs of the business.

Determine the fit or gap between current IT capabilities and market analysis of world class and emerging IT service provision.

Identify new opportunities presented by emerging technologies. Identify threats of declining technologies.

Assess the impact on IT capabilities of architecture changes, IT research, IT portfolio performance and IT strategy effectiveness.

Analyze the financial and business implications of the business strategy, opportunities and threats and develop a value analysis of potential changes to the IT capabilities. Select cost effective opportunities and refine the IT capability model. Prepare value statements for the potential value of IT, in a form appropriate for the business, and also a form appropriate for a service provider (to support external benchmarking and sales).

Document the IT goals, required IT capabilities and potential IT value, showing alignment of IT to the business.

Controls

- IT Strategy Process Framework (From: A311)

A specification of the framework and metrics for measuring and managing the IT Strategy processes and incorporating any mandated elements required by the overall IT management system. Incorporates governance, reporting, standards, methods and review criteria.

- Market Analysis (From: A2 A22 A222)

A document that evaluates the current service requirements, market segmentation, current customer profiles, and the current typical IT service provider scope. The purpose is to discern general trends and directions in the current IT service marketplace.

- Technology Capabilities and Trends

Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.

- Underpinning Contracts (From: A8 A82 A823)

Content of contracts with suppliers, including terms and conditions, service level agreements (SLAs), among others. Covers both the actual contract itself, and information about it that is available as input for supplier evaluation and to other internal processes, such as financial management.

Information Technology Infrastructure Library (ITIL) defines underpinning contract as “a contract between an IT service provider and a third party. The third party provides goods or services that support delivery of an IT service to a customer. The underpinning contract defines targets and responsibilities that are required to meet agreed service level targets in an SLA.”³

3. ITIL V3 Glossary

- IT Strategy Assessment (From: A316)
Assessment of the effectiveness of the IT Strategy, stated in terms of completeness and coverage of IT strategy implementation (when compared to the strategic intent). Includes lessons learned about the strategy initiatives and recommendations for change.

Inputs

- Business Strategic Wants and Needs (From: A312)
Statement of strategic ambition, objectives, priorities and intent of the business.
- IT Research Guidance (From: A3 A32 A325)
Guidance and recommendations about which trends and innovations should or should not be adopted. In other words, a summary of overall research results.
- IT Strategy Architectural Implications (From: A33 A333)
An assessment of the implications of architecture changes on the IT Strategy; stated in terms of potential (positive and negative) changes to the value of IT and its alignment to desired business capabilities. For example, it can detail the potential need for compromise on two conflicting aspects of the strategy; only one (or other) of which can be satisfied by the architecture.
- Architecture Baselines and Roadmaps (From: A3 A33 A334)
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.
- IT Portfolio (From: A3 A36 A365)
A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.
- IT Portfolio Performance Report (From: A36 A367)
A management report describing the actual results of IT portfolio management activities in terms of value realized, balance achieved, and degree of strategic alignment.

Outputs

- IT Research Requests (To: A32 A322)
Requests from within the business or from any other IT process that trigger the identification and selection of research candidates.
- IT Service Provider Value Profile (To: A11 A112 A113 A314)
A model of the offerings and services desired by the business, which incorporates the value provided by the IT Business. The model should express, in a form that profiles the IT Business as an IT Service Provider, and in the style (and with the required attributes) desired by the business. An example of suitable styles is provided by the Commodity, Utility, Partner, and Enabler model.
- IT Business Value Potential (To: A312)
Statement of potential technology impact on the business strategy, stated in terms of added value, time scales, potential investment costs and business change assessment.
- Business Aligned IT Goals (To: A314 A315)
Statement of IT goals and objectives. Includes coverage of guiding principles, policies, strategic assumptions, and technology principles.
- IT Capability Outlines (To: A314 A33 A332)
A specification of the desired capabilities of the IT entity, stated in a way that is independent to specific implementations of its services, processes, people, tools, organization, and technology. Capabilities should be stated in a consistent form, as in “the ability to perform service X within the specified service level Y.”

- IT Strategy Process Activity Data (To: A317)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A314] Develop IT Strategy Initiatives

Description

Develop and maintain a list of strategic IT initiatives, based on the strategic potential of IT.

Evaluate the current IT portfolio, service catalog and IT plan to ensure alignment with the IT capabilities. Use the fit and gap analysis to identify additions or changes to the IT initiatives.

Evaluate the current architecture and innovation opportunities to identify new initiatives or improve existing initiatives.

Refine the strategic IT initiatives to take into account cost constraints and IT strategy effectiveness.

Develop an outline charter for each IT strategy initiative, showing scope of change and incorporating estimates for time and cost. Develop an overall value statement for the strategic IT initiatives.

Obtain business and IT approvals, and secure necessary changes to IT budgets.

Controls

- Business Aligned IT Goals (From: A313)
Statement of IT goals and objectives. Includes coverage of guiding principles, policies, strategic assumptions, and technology principles.
- IT Service Provider Value Profile (From: A31 A313)
A model of the offerings and services desired by the business, which incorporates the value provided by the IT Business. The model should express, in a form that profiles the IT Business as an IT Service Provider, and in the style (and with the required attributes) desired by the business. An example of suitable styles is provided by the Commodity, Utility, Partner, and Enabler model.
- IT Strategy Process Framework (From: A311)
A specification of the framework and metrics for measuring and managing the IT Strategy processes and incorporating any mandated elements required by the overall IT management system. Incorporates governance, reporting, standards, methods and review criteria.
- IT Budget (From: A8 A81 A813)
The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.
- Security Policy (From: A7 A72 A722)
The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.
- IT Strategy Assessment (From: A316)
Assessment of the effectiveness of the IT Strategy, stated in terms of completeness and coverage of IT strategy implementation (when compared to the strategic intent). Includes lessons learned about the strategy initiatives and recommendations for change.

Inputs

- IT Capability Outlines (From: A31 A313)
A specification of the desired capabilities of the IT entity, stated in a way that is independent to specific implementations of its services, processes, people, tools, organization, and technology. Capabilities should be stated in a consistent form, as in “the ability to perform service X within the specified service level Y.”
- Architecture Baselines and Roadmaps (From: A3 A33 A334)
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.
- IT Portfolio (From: A3 A36 A365)
A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.
- IT Plan (From: A3 A36 A365)
The set of approved projects and associated schedule, operating plan, service level management commitments, and resource allocation commitments and adjustments for a defined fiscal or planning cycle.
- Viable Innovation (From: A32 A325)
Any innovations that seem viable to be adopted by the IT service provider in order to enhance the service to the business (IT Architecture, the IT Portfolio, IT Strategy). The information provided will include analysis and assessment of the potential impact to the business, and to the parameters of the IT service provision, stated in terms of ideas, value and viability.

Outputs

- IT Strategy Initiatives (To: A315 A33 A333 A35 A352 A36 A364)
An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.
- Strategic IT Value Propositions (To: A315)
A statement of value, scope and time scale for each strategic IT initiative.
- IT Strategy Process Activity Data (To: A317)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A315] Consolidate and Communicate IT Strategy

Description

Develop and maintain a network for championing the IT strategy.

Assemble a communications package based on the content and value of the strategic IT initiatives.

Identify events for communicating the strategy and obtain agreement from stakeholders to participate at their events. Identify other means, such as Web lectures and the enterprise Internet, for communicating the IT strategy.

Prepare a tailored communications package for each delivery vehicle and communicate the strategy. Obtain and summarize feedback.

Controls

- IT Strategy Process Framework (From: A311)
A specification of the framework and metrics for measuring and managing the IT Strategy processes and incorporating any mandated elements required by the overall IT management system. Incorporates governance, reporting, standards, methods and review criteria.
- IT Strategy Assessment (From: A316)
Assessment of the effectiveness of the IT Strategy, stated in terms of completeness and coverage of IT strategy implementation (when compared to the strategic intent). Includes lessons learned about the strategy initiatives and recommendations for change.

Inputs

- Business Aligned IT Goals (From: A313)
Statement of IT goals and objectives. Includes coverage of guiding principles, policies, strategic assumptions, and technology principles.
- IT Strategy Initiatives (From: A31 A314)
An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.
- Strategic IT Value Propositions (From: A314)
A statement of value, scope and time scale for each strategic IT initiative.

Outputs

- IT Strategy (To: outside the model A1 A11 A111 A112 A113 A114 A12 A121 A122 A123 A124 A125 A13 A131 A132 A133 A14 A142 A2 A21 A211 A22 A221 A23 A231 A24 A241 A26 A261 A27 A271 A316 A32 A321 A323 A33 A332 A334 A34 A341 A35 A352 A36 A361 A366 A37 A371 A4 A41 A411 A413 A42 A421 A43 A431 A44 A441 A45 A451 A5 A51 A511 A7 A71 A711 A713 A72 A721 A73 A731 A74 A741 A75 A751 A76 A761 A8 A81 A811 A82 A83 A831 A84 A841 A842 A85 A851 A852)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- IT Strategy Process Activity Data (To: A317)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A316] Monitor and Assess IT Strategy Effectiveness

Description

Develop assessment criteria for effectiveness of IT, taking into account IT strategy assessment framework.

Perform regular assessments of IT portfolio performance, comparing effectiveness of the portfolio against the desired outcome of the IT strategy. Prepare an assessment report and recommend changes to the strategy.

Measure process performance and create process activity data. Incorporate strategy effectiveness criteria and assessment metrics into the performance results.

Controls

- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- IT Strategy Process Framework (From: A311)
A specification of the framework and metrics for measuring and managing the IT Strategy processes and incorporating any mandated elements required by the overall IT management system. Incorporates governance, reporting, standards, methods and review criteria.

Inputs

- IT Portfolio Performance Report (From: A36 A367)
A management report describing the actual results of IT portfolio management activities in terms of value realized, balance achieved, and degree of strategic alignment.

Outputs

- IT Strategy Assessment (To: A313 A314 A315)
Assessment of the effectiveness of the IT Strategy, stated in terms of completeness and coverage of IT strategy implementation (when compared to the strategic intent). Includes lessons learned about the strategy initiatives and recommendations for change.
- IT Strategy Process Activity Data (To: A317)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A317] Evaluate IT Strategy Process Performance

Description

Develop a dashboard or model for analyzing and reporting on the performance of the IT Strategy processes. Incorporate the IT Strategy process framework metrics into the model.

Using process activity data, evaluate the results of IT Strategy process performance and incorporate into the dashboard. Assess performance of each process and also of the overall IT Strategy process. Identify potential for process improvement. Recommend changes to processes and process metrics baselines.

Controls

- IT Strategy Process Framework (From: A311)
A specification of the framework and metrics for measuring and managing the IT Strategy processes and incorporating any mandated elements required by the overall IT management system. Incorporates governance, reporting, standards, methods and review criteria.

Inputs

- IT Strategy Process Activity Data (From: A312 A313 A314 A315 A316)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

Outputs

- IT Strategy Process Evaluation (To: A311)
Quantitative and qualitative analysis of the performance of the IT Strategy processes against the evaluation framework. Incorporates recommendations for changes to the framework and changes to the metrics.

[A32] IT Research and Innovation

Purpose

The IT Research and Innovation process exists to identify new developments in technology, methods and solutions that have potential to create business value. It conducts research on the applicability and benefit of new approaches and technologies, and promotes the use of viable, innovative concepts in support of business objectives.

General definitions of:

- Research: (*Noun*) Scholarly or scientific investigation or inquiry (*Verb*) To study something thoroughly to present it in a detailed, accurate manner
- Innovation:
 1. The act of introducing new things or methods
 2. Innovation = creative idea + implementation

Outcomes

As a result of successful implementation of this process:

- The business is fully aware of marketplace, industry and technology trends, and the potential impact of these forces
- Business value is created through the qualification and staging of the most appropriate advances and innovations in technology, methods and solutions
- Business objectives are met with improved quality and reduced cost as a result of the identification and promotion of viable innovative solutions for operational usage

Scope

The process covers any selected combination of internal, external and cooperative efforts in any part of the range of research and innovation activities.

Includes

- ◆ Identification of areas or fields to be researched
- ◆ Responding to research requests and identifying relevant developments within monitored fields of interest
- ◆ Monitoring, understanding, and promoting:
 - Market and industry trends
 - Emerging technologies
 - Technology-enabled solutions
 - Methods and techniques for exploiting technology and solutions
 - Solution strategies
 - Organizing the storage and retrieval of research results

Excludes

- ◆ Decisions on adopting innovative technologies and solutions for productive use (Portfolio Management)
- ◆ Actual development and deployment of solutions for productive use (Realization and Transition processes)

- ◆ Project Management (Program and Project Management)

Controls

- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- IT Budget (From: A8 A81 A813)
The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.
- IT Portfolio (From: A3 A36 A365)
A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.

Inputs

- Business and IT Models (From: A3 A33 A333)
Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.
- IT Research Requests (From: A31 A313 A33 A332 A333)
Requests from within the business or from any other IT process that trigger the identification and selection of research candidates.
- Technology Capabilities and Trends
Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.
- Solution_ Deployed (From: A5 A53 A536)
The new or adjusted solution in *live* status, ready for useful work within its target environment, and reflecting the outcome of the deployment activities.
The deployed solution includes documentation, procedures, training materials, support guidance as well as the primary solution contents.

Outputs

- Viable Innovation (To: A31 A314 A35 A352 A36 A364)
Any innovations that seem viable to be adopted by the IT service provider in order to enhance the service to the business (IT Architecture, the IT Portfolio, IT Strategy). The information provided will include analysis and assessment of the potential impact to the business, and to the parameters of the IT service provision, stated in terms of ideas, value and viability.
- IT Research Guidance (To: A1 A11 A114 A12 A122 A123 A124 A125 A126 A2 A21 A213 A22 A222 A25 A252 A26 A263 A31 A313 A33 A332 A333 A8 A84 A844)
Guidance and recommendations about which trends and innovations should or should not be adopted. In other words, a summary of overall research results.

Activities

This process is composed of these activities:

- A321 Establish IT Research and Innovation 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

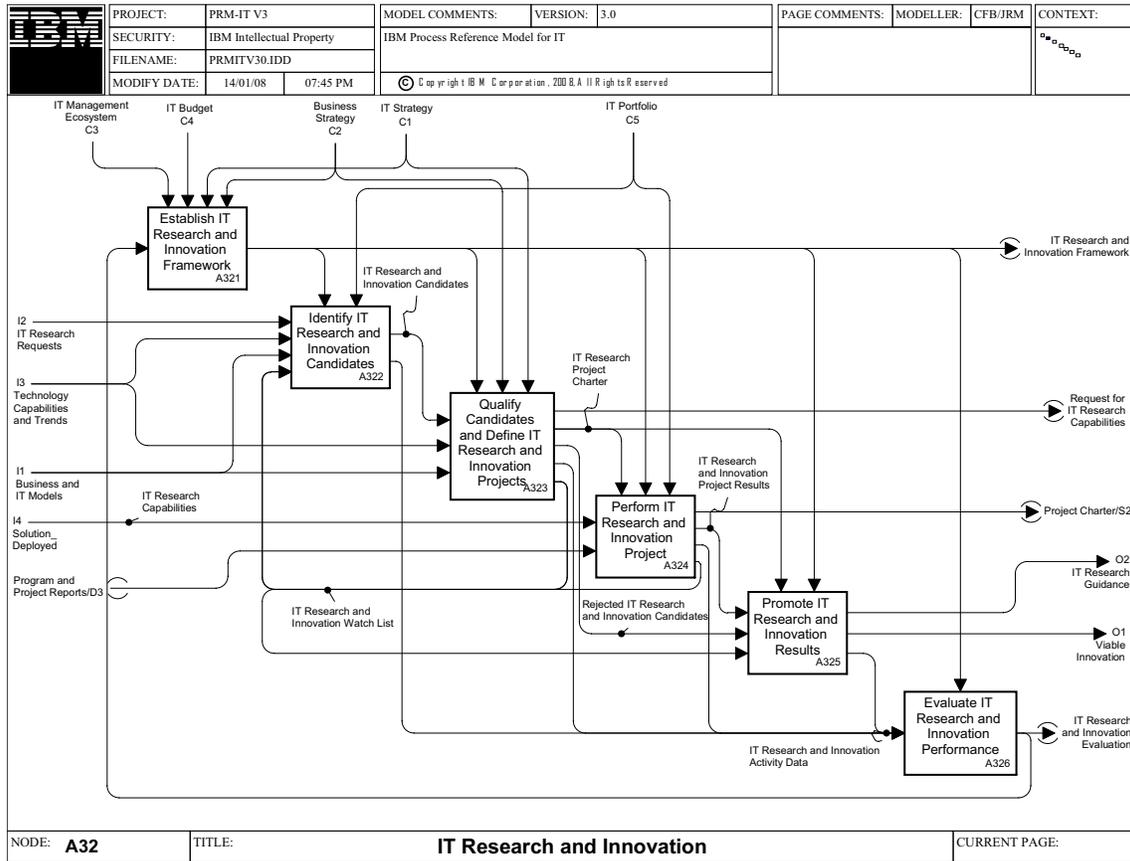


Figure 3. A32 IT Research and Innovation

[A321] Establish IT Research and Innovation Framework

Description

Based on the business' strategic goals, policies, and the IT strategy, this activity establishes the base for IT research and innovation in the business by defining the research strategic goals and objectives, as well as the critical success factors.

This includes that some policies are defined and orientation is given about securing research results, about what kind of research is necessary and appropriate, which external sources can be used, what criteria have to be applied for funding research projects, and more. These tasks have to be revisited regularly.

The establishment of the IT research and innovation framework also includes the consideration of the IT Research and Innovation process evaluation and the implementation of recommended improvement actions.

Controls

- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- IT Budget (From: A8 A81 A813)
The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.
- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.

Inputs

- IT Research and Innovation Evaluation (From: A326)
An analysis of IT research and innovation activity data providing an understanding of the current success or failure of the process, and an identification of potential process improvements.

Outputs

- IT Research and Innovation Framework (To: A322 A323 A324 A325 A326)
The procedural, organizational and other management mechanisms through which the process will operate. Includes:
 - Strategic goals for IT research and innovation
 - Policies and orientation that apply to IT research and innovation
 - Collection of evaluation criteria for qualifying and selecting research projects

[A322] Identify IT Research and Innovation Candidates

Description

The basis for any research and innovation activities is thorough understanding of business and IT strategies, models, and the IT services that have to be delivered. The first task in this activity facilitates understanding beginning with the service enablers (technology, processes, organization).

The actual identification of research areas can be of a proactive or reactive mode:

- Triggered by a research request from within the business or any other process within IT (reactive mode). These research requests are accepted if the research topic relates to the service enablers.
- Regular market and competitors watch: proactive mode, based on the watch list (approved in the Qualify Candidates and Define Research Projects activity).
- Analysis of current IT trends: best practices, innovations, emerging and new technologies, among others (proactive mode, candidates for the watch list).

The result of this activity will be the suggestions for the right research areas, suggestions for a watch list of potentially important technologies, and the identification of starting points for innovation.

Based on this research, candidates will be identified and preselected.

Controls

- IT Research and Innovation Framework (From: A321)
The procedural, organizational and other management mechanisms through which the process will operate. Includes:
 - Strategic goals for IT research and innovation
 - Policies and orientation that apply to IT research and innovation
 - Collection of evaluation criteria for qualifying and selecting research projects
- IT Portfolio (From: A3 A36 A365)
A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.

Inputs

- IT Research Requests (From: A31 A313 A33 A332 A333)
Requests from within the business or from any other IT process that trigger the identification and selection of research candidates.
- Technology Capabilities and Trends
Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.
- Business and IT Models (From: A3 A33 A333)
Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.
- IT Research and Innovation Watch List (From: A323 A324)
List of research topics not leading to a research project but are potential candidates; their future development needs to be watched.

Outputs

- IT Research and Innovation Candidates (To: A323)
Any topics that have been identified as potential candidates for research projects or the watch list.
- IT Research and Innovation Activity Data (To: A326)
Any data about the accomplishment of process activities that supports the evaluation of the overall IT Research and Innovation process. For example, data about how much value the research results bring to the business.

[A323] Qualify Candidates and Define IT Research and Innovation Projects

Description

During this activity a prioritized and approved list of research projects is created based on the identified research topics and suggested research candidates from the Identify Research and Innovation Candidates activity.

The activity consists of these tasks:

- Investigate and evaluate identified research topics and suggested research candidates with regard to predefined evaluation criteria (see “[A321] Establish IT Research and Innovation Framework” on page 43).
- Decide on research candidates based on the evaluation results. For example:
 - Adopt research topics: select and define research projects on a high level
 - Approve research topics for the watch list
 - Eliminate candidates from research
- Prioritize adopted research projects
- Define research project scope, objectives, and approach in detail
- Obtain funding for research projects and request or allocate resources

Controls

- IT Research and Innovation Framework (From: A321)
The procedural, organizational and other management mechanisms through which the process will operate. Includes:
 - Strategic goals for IT research and innovation
 - Policies and orientation that apply to IT research and innovation
 - Collection of evaluation criteria for qualifying and selecting research projects
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.

Inputs

- IT Research and Innovation Candidates (From: A322)
Any topics that have been identified as potential candidates for research projects or the watch list.
- Technology Capabilities and Trends
Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.
- Business and IT Models (From: A3 A33 A333)
Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.

Outputs

- Request for IT Research Capabilities
Request for capabilities and resources needed to carry out a research project. Examples include request for human resources, request to procure items, request to develop solutions as support for the research project, and more.
- IT Research Project Charter (To: A324 A325)
Description for research projects containing the following for each research project:
 - Rationale for research project including evaluation results for project according to the evaluation criteria
 - Detailed definition of scope
 - Project objectives
 - Project approach
- Rejected IT Research and Innovation Candidates (To: A325)
Research candidates that are not chosen to become research projects or part of the watch list.
- IT Research and Innovation Activity Data (To: A326)
Any data about the accomplishment of process activities that supports the evaluation of the overall IT Research and Innovation process. For example, data about how much value the research results bring to the business.
- IT Research and Innovation Watch List (To: A322 A325)
List of research topics not leading to a research project but are potential candidates; their future development needs to be watched.

[A324] Perform IT Research and Innovation Project

Description

Performing research projects consists of tasks according to the respective research project objectives and scope:

- Organizing and collecting research information
- If applicable, developing and executing a prototype according to the research topic (proof of concept)
- Assessing and evaluating research information and prototype
- Drawing conclusions and formulating propositions for innovation or changes, nonviable concepts or new candidates for the watch list according to the research results

Controls

- IT Research Project Charter (From: A323)
Description for research projects containing the following for each research project:
 - Rationale for research project including evaluation results for project according to the evaluation criteria
 - Detailed definition of scope
 - Project objectives
 - Project approach
- IT Research and Innovation Framework (From: A321)
The procedural, organizational and other management mechanisms through which the process will operate. Includes:
 - Strategic goals for IT research and innovation
 - Policies and orientation that apply to IT research and innovation
 - Collection of evaluation criteria for qualifying and selecting research projects
- IT Portfolio (From: A3 A36 A365)
A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.

Inputs

- IT Research Capabilities
Capabilities and resources that are needed to carry out a research project.
- Program and Project Reports (From: A37)
The body of information ranging from formal, regular and summarized, through informal, ad hoc, and detailed about any aspect of program and project status, and plans. It is available to any process with a need to know.

Outputs

- Project Charter (To: A33 A333 A334 A37 A372 A373 A4 A41 A412 A414)
A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.
- IT Research and Innovation Project Results (To: A325)
The outcomes of performing research and innovation projects. They will range from the base facts (data) through findings to conclusions about the feasibility and viability of each candidate item.
- IT Research and Innovation Activity Data (To: A326)
Any data about the accomplishment of process activities that supports the evaluation of the overall IT Research and Innovation process. For example, data about how much value the research results bring to the business.
- IT Research and Innovation Watch List (To: A322 A325)
List of research topics not leading to a research project but are potential candidates; their future development needs to be watched.

[A325] Promote IT Research and Innovation Results

Description

This activity contains the promotion of all research results:

- For completed research projects, the documented research results including guidance and recommendations for trends and innovations that should be adopted have to be reported and further distributed so that decisions about future actions can be taken.
- Rejected research projects have to be communicated.
- Research topics that are not yet carried out in the form of a research project, but that will be posted to the watch list of research topics, have to be communicated too.

Controls

- IT Research Project Charter (From: A323)
Description for research projects containing the following for each research project:
 - Rationale for research project including evaluation results for project according to the evaluation criteria
 - Detailed definition of scope
 - Project objectives
 - Project approach
- IT Research and Innovation Framework (From: A321)
The procedural, organizational and other management mechanisms through which the process will operate. Includes:
 - Strategic goals for IT research and innovation
 - Policies and orientation that apply to IT research and innovation
 - Collection of evaluation criteria for qualifying and selecting research projects

Inputs

- IT Research and Innovation Project Results (From: A324)
The outcomes of performing research and innovation projects. They will range from the base facts (data) through findings to conclusions about the feasibility and viability of each candidate item.
- Rejected IT Research and Innovation Candidates (From: A323)
Research candidates that are not chosen to become research projects or part of the watch list.
- IT Research and Innovation Watch List (From: A323 A324)
List of research topics not leading to a research project but are potential candidates; their future development needs to be watched.

Outputs

- IT Research Guidance (To: A1 A11 A114 A12 A122 A123 A124 A125 A126 A2 A21 A213 A22 A222 A25 A252 A26 A263 A31 A313 A33 A332 A333 A8 A84 A844)
Guidance and recommendations about which trends and innovations should or should not be adopted. In other words, a summary of overall research results.
- Viable Innovation (To: A31 A314 A35 A352 A36 A364)
Any innovations that seem viable to be adopted by the IT service provider in order to enhance the service to the business (IT Architecture, the IT Portfolio, IT Strategy). The information provided will include analysis and assessment of the potential impact to the

business, and to the parameters of the IT service provision, stated in terms of ideas, value and viability.

- IT Research and Innovation Activity Data (To: A326)

Any data about the accomplishment of process activities that supports the evaluation of the overall IT Research and Innovation process. For example, data about how much value the research results bring to the business.

[A326] Evaluate IT Research and Innovation Performance

Description

The evaluation of the performance of the IT Research and Innovation process aims at the improvement of the overall process. That is, the foundation and interfaces of the process, all activities, their accomplishment, their degree of automation, as well as the roles and responsibilities including the respective skills. Additionally, the evaluation aims at the overall performance and results of research itself.

The basis for the improvements is insights and lessons learned from the observations and analysis of activity accomplishments and results.

Basically, the improvements should lead to more efficiency in the process, and provide more useful and valuable research results.

Controls

- IT Research and Innovation Framework (From: A321)

The procedural, organizational and other management mechanisms through which the process will operate. Includes:

- Strategic goals for IT research and innovation
- Policies and orientation that apply to IT research and innovation
- Collection of evaluation criteria for qualifying and selecting research projects

Inputs

- IT Research and Innovation Activity Data (From: A322 A323 A324 A325)

Any data about the accomplishment of process activities that supports the evaluation of the overall IT Research and Innovation process. For example, data about how much value the research results bring to the business.

Outputs

- IT Research and Innovation Evaluation (To: A321)

An analysis of IT research and innovation activity data providing an understanding of the current success or failure of the process, and an identification of potential process improvements.

[A33] Architecture Management

Purpose

The Architecture Management process exists to create, maintain, promote and govern the use of IT architecture models and standards, across and within business change programs. IT Architecture thus helps the stakeholder community coordinate and control their IT related activities, in pursuit of common business goals.

Definition of IT architecture: “An overarching set of rules of construction, suitable for a defined range of external circumstances. Usually includes a definition of the parts permitted for use in the design, together with a specification of how the parts can be used within specific implementations and the range of values for which the part is valid.”⁴

Outcomes

As a result of successful implementation of this process:

- From the boardroom to the desktop, all elements of business and IT solutions receive governance and guidance that has enhanced flexibility, consistency, integration, and reuse
- All information systems and information technology infrastructure exhibit improved manageability characteristics
- The exploitation of IT across the enterprise is effective and efficient

Scope

An effective enterprise architecture (EA) should encompass:

- An architecture
 - This is the way our projects should be engineered.
 - An EA provides a specification of the business and IT architecture models that must be adopted by change programs and projects. This includes the overall business, application, data, services, infrastructure architectures, and together with the principles and guidelines needed to ensure these models are exploited properly.
- Governance
 - An EA must be flexible and evolve constantly if it is to support the business changes needed by an organization wanting to innovate and transform itself. Architectural governance has two aspects: ensuring that the architecture's specifications are adhered to (or formal exceptions granted), and ensuring that the architecture evolves in step with business demands.
- Transition Planning
 - These are the projects we should do and this is their scope.
 - An EA needs a collection of processes and tasks designed to support the selection and scoping of the right projects aimed at realizing the EA vision. The processes should be in concert with the business-as-usual business and IT project prioritization planning processes.

Includes

- ◆ Business Architecture (BA)

4. Source: IBM Academy of Technology Study AR221 (2004), “Enterprise Architecture in the era of on demand,” page 15.

- The relationships and interactions between the various business units, at appropriate levels of decomposition
- ◆ Information Systems (IS) Architecture
 - The business-dependent aspects of IT; the automated parts of BA
- ◆ Information Technology (IT) Architecture
 - The business-independent aspect of IT; the underlying IT infrastructure

The architecture must consistently support several viewpoints across these three areas:

- ◆ The applications viewpoint ensuring functionality can track through the layers. For example, enabling an architect to link business activities and processes to applications and transaction management services
- ◆ The data viewpoint – ensuring an architect approach to information. For example, linking business entities to data definitions and into database technologies
- ◆ User viewpoint – facilitating the identification and support of an enterprise's user groups (whether internal or external, private or corporate), including the definition of how they are to be supported at the IS (user interface) and IT (interface technology) levels

The architecture must be:

- ◆ Maintained – An enterprise needs to keep its architecture fresh and vital, reacting to changes in the businesses strategy as well as changes in technology through a vitality process. In all probability, this will include the identification of new or changes to existing standards through a selection process
- ◆ Used and controlled – It is necessary to actively ensure that solution projects conform to the constraints of the architecture (while still assuring their ability to meet the project's business requirements) through a conformance process. Inevitably, there will be occasions when there is a conflict between the project's needs and the architecture, requiring an exception process
- ◆ Communicated – To be effective, the architecture must be understood by those who are required to use it, through the use of a communication process

Excludes

- ◆ Portfolio Management, in which specific change programs are identified, prioritized, and managed to completion
- ◆ Requirements specification, in which specific business requirements are identified and translated into specifications (Solution Requirements)
- ◆ Solution design, in which specific IT systems are designed to meet particular business or IT operational needs
- ◆ Solution delivery and operation, including the procurement, commissioning and operation of IT components and systems
- ◆ Enterprise systems management, responsible for planning and execution of day-to-day management of the installed IT infrastructure

Controls

- Security Plan (From: A72 A725)

A consolidated view and documentation of the resources, approach, procedures and assets to be protected together with a definition of the security practices and controls which will be enacted in order to fulfill the security policy. It covers both technical capabilities (for

example, firewalls, encryption) and non-technical considerations (such as segregation of duties, training needs, user responsibilities).

- IT Budget (From: A8 A81 A813)

The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.

- Industry Models and Standards

From the industry segment of the business and from the IT industry itself:

- Models of ways of operating and design
- Formal and informal standards that must be considered in any architectural work

- IT Management Ecosystem (From: A1)

To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.

- Security Policy (From: A7 A72 A722)

The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.

- IT Portfolio (From: A3 A36 A365)

A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.

Inputs

- IT Strategy (From: A3 A31 A315)

A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.

- IT Capability Outlines (From: A31 A313)

A specification of the desired capabilities of the IT entity, stated in a way that is independent to specific implementations of its services, processes, people, tools, organization, and technology. Capabilities should be stated in a consistent form, as in “the ability to perform service X within the specified service level Y.”

- IT Strategy Initiatives (From: A31 A314)

An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.

- IT Research Guidance (From: A3 A32 A325)

Guidance and recommendations about which trends and innovations should or should not be adopted. In other words, a summary of overall research results.

- Technology Capabilities and Trends

Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.

- Business Strategy

The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.

- **Solution Design (From: A4 A42 A425)**
Solution design, including conceptual, macro, and micro designs, together with identified issues and risks, and formally validated and approved (signed off) by the key stakeholders. It not only covers all the functional and non-functional requirements of the solution, but also the design for meeting the compliance reporting requirements applicable to the solution.
- **Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)**
The collective overall information on both the development plan for the solution and the content of the solution as it progresses from concept to reality.
 - **Plans:** Sets of committed solution phases, activities, tasks and milestones together with timeframe.
 - **Commitments:** Sets of requirements, designs and other deliverables, such as test cases.
- **Configuration Information (From: A5 A54 A544)**
The information on any individual configuration item (CI) or collection of CIs, which is made available using standard reports or to meet individual requests.
- **Business Input (From: Outside-the-Model)**
The various input items from the business to the IT provider that shape or direct the IT service. Examples of such inputs include:
 - Guidance
 - Instructions
 - General commentary and information about business operating conditions
- **Project Charter (From: A3 A324 A354 A36 A365)**
A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.

Outputs

- **Business and IT Models (To: A2 A25 A253 A254 A32 A322 A323 A334 A34 A342 A344 A35 A352 A4 A41 A412 A413 A42 A422 A7 A71 A712 A714 A8 A82 A821 A822)**
Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.
- **Project Proposal (To: A3 A34 A342 A35 A352 A36 A364)**
A formal statement of an idea being put forward for consideration that includes the business case for the proposed IT investment.
- **Architecture Baselines and Roadmaps (To: A1 A11 A114 A12 A121 A122 A123 A124 A125 A2 A22 A221 A31 A313 A314 A332 A333 A335 A336 A36 A361 A4 A41 A411 A412 A413 A42 A43 A431 A44 A441 A443 A45 A451 A5 A51 A513 A514 A52 A522 A523 A524 A54 A541 A542 A55 A551 A6 A62 A621 A63 A631 A64 A641 A66 A661 A663 A664 A665 A7 A72 A723 A73 A732 A734 A736 A74 A742 A743 A75 A752 A76 A763 A764 A8 A84 A842 A844 A85 A852)**
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.
- **IT Strategy Architectural Implications (To: A31 A313)**
An assessment of the implications of architecture changes on the IT Strategy; stated in terms of potential (positive and negative) changes to the value of IT and its alignment to desired business capabilities. For example, it can detail the potential need for compromise on two conflicting aspects of the strategy; only one (or other) of which can be satisfied by the architecture.

■ IT Research Requests (To: A32 A322)

Requests from within the business or from any other IT process that trigger the identification and selection of research candidates.

Activities

This process is composed of these activities:

- A331 Establish Architecture Management Framework
- A332 Review Overall Environment and Architecture
- A333 Create and Maintain Architecture Models
- A334 Define and Maintain Architecture Baselines and Roadmaps
- A335 Promote Architecture Transition Initiatives
- A336 Govern Architecture Usage
- A337 Evaluate Architecture Management Performance

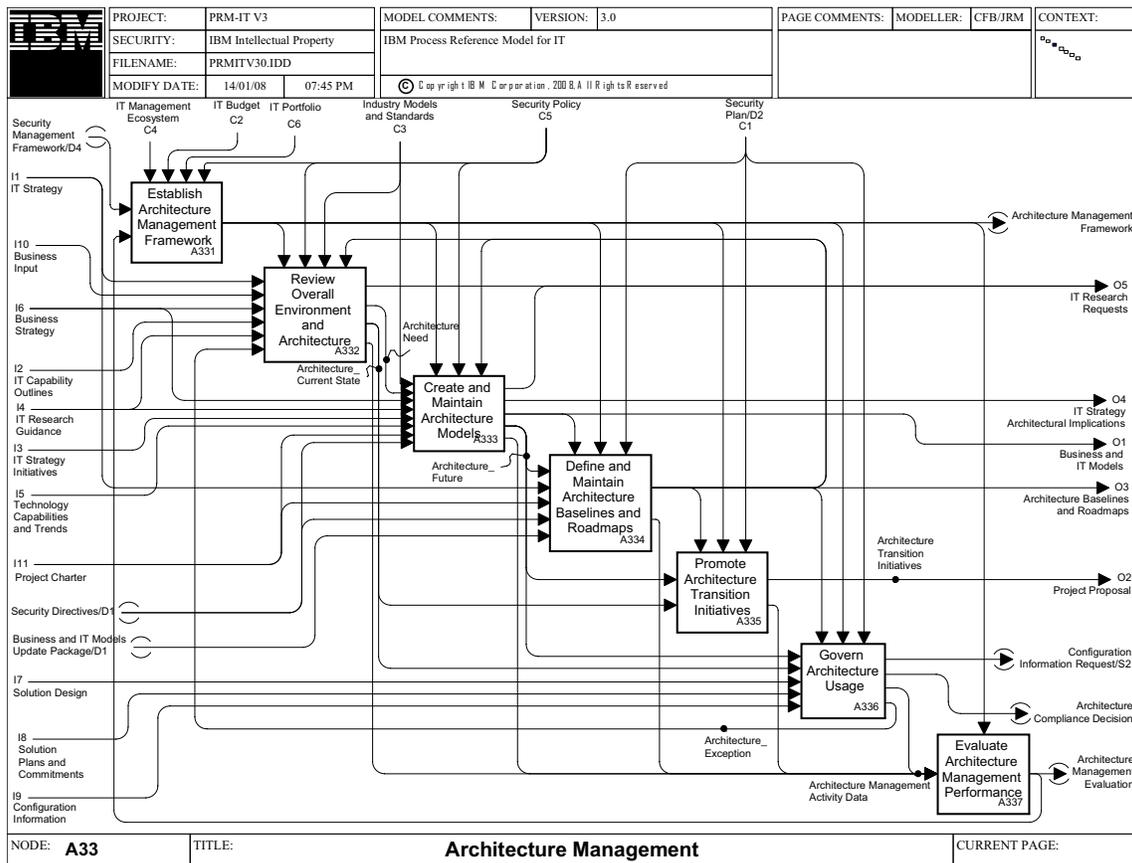


Figure 4. A33 Architecture Management

[A331] Establish Architecture Management Framework

Description

This activity puts in place an Architecture Management Framework (AMF), and continuously maintains its fitness for purpose.

While primarily addressing the ways and means in which the Architecture Management process itself will operate, an AMF also ensures the architecture is maintained and actively and appropriately used by the enterprise's change programs. It includes an organizational structure, documenting the responsibilities of various governance bodies; together with a set of processes used by these bodies to ensure the health and usage of the architecture.

The AMF can take many forms, often dependant on the overarching organizational structure and culture of the business. For example, it might be appropriate to adopt a strongly controlled approach within a centralized corporate culture, or a federated, trust based approach within a federated enterprise. In general, it is necessary for the AMF to be active, rather than passive. For example: ensuring conformance reviews are scheduled and held, and actively communicating the architecture to its stakeholders and users.

There are two distinct objectives for the AMF:

- Managing the architecture itself
- Managing the use of the architecture

The first requires a focus on its vitality (executed in activity Review Overall Environment and Architecture) and communication. The second focuses on conformance to the architecture, and managing exceptions (executed in Govern Architecture Usage).

Controls

- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- IT Budget (From: A8 A81 A813)
The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.
- IT Portfolio (From: A3 A36 A365)
A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.
- Security Policy (From: A7 A72 A722)
The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.

Inputs

- Security Management Framework (From: A721)
The conceptual structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing security.

- Architecture Management Evaluation (From: A337)
Assessment of the effectiveness and efficiency of the architecture management process. Includes identification of areas for process improvement.

Outputs

- Architecture Management Framework (To: A332 A333 A334 A335 A336 A337)
The organizational structure and processes deployed to ensure the architecture is effectively and efficiently established, maintained and used.

[A332] Review Overall Environment and Architecture

Description

Establishing the gap between the business' existing IT environment and planned architecture vision (if one exists), and the combined business and IT strategies.

This vitality activity can also be influenced by the practical experiences of the programs' ability to conform to the existing architecture. For example, if an unexpected number of development programs are unable to conform to the architecture, then it might be that the architecture requires refinement.

Controls

- Architecture Management Framework (From: A331)
The organizational structure and processes deployed to ensure the architecture is effectively and efficiently established, maintained and used.
- Security Policy (From: A7 A72 A722)
The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.
- Industry Models and Standards
From the industry segment of the business and from the IT industry itself:
 - Models of ways of operating and design
 - Formal and informal standards that must be considered in any architectural work
- Architecture Baselines and Roadmaps (From: A3 A33 A334)
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.

Inputs

- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- Business Input (From: Outside-the-Model)
The various input items from the business to the IT provider that shape or direct the IT service. Examples of such inputs include:
 - Guidance

- Instructions
- General commentary and information about business operating conditions
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- IT Capability Outlines (From: A31 A313)
A specification of the desired capabilities of the IT entity, stated in a way that is independent to specific implementations of its services, processes, people, tools, organization, and technology. Capabilities should be stated in a consistent form, as in “the ability to perform service X within the specified service level Y.”
- IT Research Guidance (From: A3 A32 A325)
Guidance and recommendations about which trends and innovations should or should not be adopted. In other words, a summary of overall research results.
- Architecture_ Exception (From: A336)
An allowed deviation within a solution design from the architecture, providing input to the collection of architecture processes which ensure vitality.

Outputs

- IT Research Requests (To: A32 A322)
Requests from within the business or from any other IT process that trigger the identification and selection of research candidates.
- Architecture Need (To: A333)
An identified shortfall in the existing (or envisioned) IT environment that can be addressed by some architectural instrument.
- Architecture_ Current State (To: A335 A336)
A description of the business' overall approach to the structuring and implementation of its IT systems and solutions.
- Architecture Management Activity Data (To: A337)
Metrics on the performance of the architecture management processes, such as the frequency or magnitude of allowed exceptions, enabling the effectiveness of the process to be determined.

[A333] Create and Maintain Architecture Models

Description

This activity addresses the identification, description, and publication of the business' preferred approaches to the design of its IT systems and solutions. A prerequisite to this is the existence of an adequate representation of the business undertaking for which a technology-enabled approach is being examined. Where necessary, this activity participates in business-owned efforts to provide such business models.

Architecture is often formulated within a standard architecture framework, intended to ensure the support of all aspects of the IT systems and solution design. There are many available frameworks (those available from The Open Group (TOGAF), FEAF, and IBM), all of which attempt to embrace a number of factors:

1. Business dependent and business independent IT building blocks (BBs) – sometimes referred to as an IS Architecture and IT Architecture, respectively. These BBs are specified to be the preferred BBs for use throughout the IT organization. Business dependent BBs will, for example, include a preferred application architecture, data architecture, and standard approaches for user support. Business independent IT BBs focus on

documenting standard IT software and hardware components, upon which the IS architecture will be supported.

2. Standard constructions of BBs – as well as a simple catalog of parts, the architecture will provide standard patterns, documenting how the BBs are to be put together in order to solve common IT design challenges.
3. Other guidance, such as architecture principles, that provides additional insights and controls in the use of the architecture.

Good practice suggests that this activity focuses on the specification of the preferred BBs and patterns for their use in design. A separate activity is responsible for the identification of preferred implementations of these BBs and patterns, including guidance on when and how to choose between different permitted implementations of the same BB.

Controls

- Architecture Management Framework (From: A331)
The organizational structure and processes deployed to ensure the architecture is effectively and efficiently established, maintained and used.
- Security Policy (From: A7 A72 A722)
The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.
- Architecture Baselines and Roadmaps (From: A3 A33 A334)
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.

Inputs

- Industry Models and Standards
From the industry segment of the business and from the IT industry itself:
 - Models of ways of operating and design
 - Formal and informal standards that must be considered in any architectural work
- Architecture Need (From: A332)
An identified shortfall in the existing (or envisioned) IT environment that can be addressed by some architectural instrument.
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- IT Research Guidance (From: A3 A32 A325)
Guidance and recommendations about which trends and innovations should or should not be adopted. In other words, a summary of overall research results.
- IT Strategy Initiatives (From: A31 A314)
An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.
- Technology Capabilities and Trends
Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.

- Project Charter (From: A3 A324 A354 A36 A365)
A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.
- Security Directives (From: A725)
The directive to take action, or the action to be taken, so that the protections which implement the desired security practices are properly operated.

Outputs

- IT Research Requests (To: A32 A322)
Requests from within the business or from any other IT process that trigger the identification and selection of research candidates.
- IT Strategy Architectural Implications (To: A31 A313)
An assessment of the implications of architecture changes on the IT Strategy; stated in terms of potential (positive and negative) changes to the value of IT and its alignment to desired business capabilities. For example, it can detail the potential need for compromise on two conflicting aspects of the strategy; only one (or other) of which can be satisfied by the architecture.
- Business and IT Models (To: A2 A25 A253 A254 A32 A322 A323 A334 A34 A342 A344 A35 A352 A4 A41 A412 A413 A42 A422 A7 A71 A712 A714 A8 A82 A821 A822)
Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.
- Architecture_ Future (To: A334 A335 A336)
A structured description of the preferred business approaches to the design and implementation of its IT systems and solutions. Generally published as a specification of architecture building blocks, together with recommended standard constructions of those building blocks.
- Architecture Management Activity Data (To: A337)
Metrics on the performance of the architecture management processes, such as the frequency or magnitude of allowed exceptions, enabling the effectiveness of the process to be determined.

[A334] Define and Maintain Architecture Baselines and Roadmaps

Description

An architecture baseline is a complete statement of the required architecture (in terms of its specification and permitted implementations) as defined at a given moment in time.

There can, therefore, be any number of architecture baselines. For example, a long running project might be required to conform to an architecture baseline published at some time in the past, while a new project can be governed by the architecture's currently published baseline. Also, it can be appropriate to publish architectures intended for use at some future date. For instance, it can be helpful to indicate that building block implementations permitted today can be withdrawn from the catalog on some future date.

Within an architecture baseline, each building block will have one or more permitted implementations, as well as a full listing of all implementations existing within the current running IT environment. It is helpful for the architecture to publish roadmaps (also known as route-maps), in which all existing and possible future implementations are categorized, according to the architecture preferences. For example, if some implementations are to be actively

decommissioned, then they can be categorized as sunset; whereas those which are to be actively encouraged would be tagged as strategic.

Controls

This activity ensures that viable instances of both baselines and roadmaps are always available.

- Business and IT Models (From: A3 A33 A333)
Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.
- Architecture Management Framework (From: A331)
The organizational structure and processes deployed to ensure the architecture is effectively and efficiently established, maintained and used.
- Security Plan (From: A72 A725)
A consolidated view and documentation of the resources, approach, procedures and assets to be protected together with a definition of the security practices and controls which will be enacted in order to fulfill the security policy. It covers both technical capabilities (for example, firewalls, encryption) and non-technical considerations (such as segregation of duties, training needs, user responsibilities).

Inputs

- Architecture_ Future (From: A333)
A structured description of the preferred business approaches to the design and implementation of its IT systems and solutions. Generally published as a specification of architecture building blocks, together with recommended standard constructions of those building blocks.
- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- Project Charter (From: A3 A324 A354 A36 A365)
A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.
- Security Directives (From: A725)
The directive to take action, or the action to be taken, so that the protections which implement the desired security practices are properly operated.
- Business and IT Models Update Package (From: A412)
Additional information about business and IT models obtained as a by-product of detailed investigation under the Solutions Requirements process.

Outputs

- Architecture Baselines and Roadmaps (To: A1 A11 A114 A12 A121 A122 A123 A124 A125 A2 A22 A221 A31 A313 A314 A332 A333 A335 A336 A36 A361 A4 A41 A411 A412 A413 A42 A43 A431 A44 A441 A443 A45 A451 A5 A51 A513 A514 A52 A522 A523 A524 A54 A541 A542 A55 A551 A6 A62 A621 A63 A631 A64 A641 A66 A661 A663 A664 A665 A7 A72 A723 A73 A732 A734 A736 A74 A742 A743 A75 A752 A76 A763 A764 A8 A84 A842 A844 A85 A852)
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.

- Architecture Management Activity Data (To: A337)
Metrics on the performance of the architecture management processes, such as the frequency or magnitude of allowed exceptions, enabling the effectiveness of the process to be determined.

[A335] Promote Architecture Transition Initiatives

Description

If the business wants to actively pursue the implementation of the architecture, then it will be appropriate for it to actively identify, scope, and propose initiatives that will help to realize it. These initiatives can then be considered and prioritized along side all other requests for IT portfolio consideration, particularly those from the business.

The specification of a transition initiative generally includes high level statements on the scope, purpose, business benefit, costs, and project outline. It must subsequently be detailed into a formal proposal, before being considered and accepted as a funded program of change.

Controls

- Architecture Baselines and Roadmaps (From: A3 A33 A334)
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.
- Architecture Management Framework (From: A331)
The organizational structure and processes deployed to ensure the architecture is effectively and efficiently established, maintained and used.
- Security Plan (From: A72 A725)
A consolidated view and documentation of the resources, approach, procedures and assets to be protected together with a definition of the security practices and controls which will be enacted in order to fulfill the security policy. It covers both technical capabilities (for example, firewalls, encryption) and non-technical considerations (such as segregation of duties, training needs, user responsibilities).

Inputs

- Architecture_ Future (From: A333)
A structured description of the preferred business approaches to the design and implementation of its IT systems and solutions. Generally published as a specification of architecture building blocks, together with recommended standard constructions of those building blocks.
- Architecture_ Current State (From: A332)
A description of the business' overall approach to the structuring and implementation of its IT systems and solutions.

Outputs

- Architecture Transition Initiatives
A brief proposal, recommending the implementation of one (or more) aspects of the envisioned architecture. Typically defined in outline, with broad statements on scope, benefits and business case, costs, dependencies, and project timeline.
- Architecture Management Activity Data (To: A337)
Metrics on the performance of the architecture management processes, such as the frequency or magnitude of allowed exceptions, enabling the effectiveness of the process to be determined.

[A336] Govern Architecture Usage

Description

It is generally necessary to actively ensure the architecture is used, and used appropriately. In some corporate cultures, this conformance can be possible through trust and delegated authority to those involved in the design of IT solutions, while in others, it can be necessary to establish formal conformance processes that are exercised at key milestones within the project and technology life cycles.

It will not always be possible for a design to follow the guidance of the architecture. Sometimes business requirements can preclude conformance, or there can be conflicting requirements in the architecture. In these cases a formal exception to the architecture will be requested and processed.

Note that exceptions can indicate a need to enhance the architecture itself. See *vitality* in the activity "Review Overall Environment and Architecture."

Controls

- Architecture Baselines and Roadmaps (From: A3 A33 A334)
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.
- Architecture Management Framework (From: A331)
The organizational structure and processes deployed to ensure the architecture is effectively and efficiently established, maintained and used.
- Security Plan (From: A72 A725)
A consolidated view and documentation of the resources, approach, procedures and assets to be protected together with a definition of the security practices and controls which will be enacted in order to fulfill the security policy. It covers both technical capabilities (for example, firewalls, encryption) and non-technical considerations (such as segregation of duties, training needs, user responsibilities).

Inputs

- Architecture_ Future (From: A333)
A structured description of the preferred business approaches to the design and implementation of its IT systems and solutions. Generally published as a specification of architecture building blocks, together with recommended standard constructions of those building blocks.
- Architecture_ Current State (From: A332)
A description of the business' overall approach to the structuring and implementation of its IT systems and solutions.
- Solution Design (From: A4 A42 A425)
Solution design, including conceptual, macro, and micro designs, together with identified issues and risks, and formally validated and approved (signed off) by the key stakeholders. It not only covers all the functional and non-functional requirements of the solution, but also the design for meeting the compliance reporting requirements applicable to the solution.
- Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)
The collective overall information on both the development plan for the solution and the content of the solution as it progresses from concept to reality.
 - Plans: Sets of committed solution phases, activities, tasks and milestones together with timeframe.

- Commitments: Sets of requirements, designs and other deliverables, such as test cases.
- Configuration Information (From: A5 A54 A544)
The information on any individual configuration item (CI) or collection of CIs, which is made available using standard reports or to meet individual requests.

Outputs

- Configuration Information Request (To: A54 A544)
Any request for information about one or more configuration items. Many IT processes will make such requests.
- Architecture Compliance Decision
A statement or report recording the architectural compliance (including permitted exceptions) of a solution design.
- Architecture Management Activity Data (To: A337)
Metrics on the performance of the architecture management processes, such as the frequency or magnitude of allowed exceptions, enabling the effectiveness of the process to be determined.
- Architecture_ Exception (To: A332)
An allowed deviation within a solution design from the architecture, providing input to the collection of architecture processes which ensure vitality.

[A337] Evaluate Architecture Management Performance

Description

This activity focuses on monitoring the effectiveness of, and suggesting improvements for, the Architecture Management Framework.

Without this activity, it is probable that architecture will not provide the optimum business benefit. Success depends on its continuous evolution, in step with the enterprise's own evolution, as well as ensuring its effective use throughout the IT organization.

The evaluation of process performance identifies areas that need improvement, such as the foundation and interfaces of the process, activity definitions, key performance metrics, the state of supporting automation, as well as the roles and responsibilities and skills required. Insights and lessons learned from direct observation and data collected on process performance are the basis for improvement recommendations.

Controls

- Architecture Management Framework (From: A331)
The organizational structure and processes deployed to ensure the architecture is effectively and efficiently established, maintained and used.

Inputs

- Architecture Management Activity Data (From: A332 A333 A334 A335 A336)
Metrics on the performance of the architecture management processes, such as the frequency or magnitude of allowed exceptions, enabling the effectiveness of the process to be determined.

Outputs

- Architecture Management Evaluation (To: A331)
Assessment of the effectiveness and efficiency of the architecture management process. Includes identification of areas for process improvement.

[A34] Risk Management

Purpose

The Risk Management process exists to identify risks associated with the activities of the IT endeavor and to make measured, appropriate responses to mitigate, ignore, avoid or transfer those risks in line with the desired level of risk tolerance.

The definition of risk is “A possible Event that could cause harm or loss, or affect the ability to achieve Objectives. A Risk is measured by the probability of a Threat, the Vulnerability of the Asset to that Threat, and the Impact it would have if it occurred.”⁵

Outcomes

As a result of successful implementation of this process:

- All of the activities carried out within IT support the desired risk posture while providing the maximal benefit
- The business and IT are able to appropriately respond to threats and opportunities
- Minimal risk exists in the fulfillment of fiduciary responsibilities to stakeholders of the business

Scope

This process provides the overall framework in which risks are handled. Other processes within IT work in conjunction with this process to ensure that specific risk areas are adequately responded to and covered.

Risks occur from a variety of internal and external sources, and cover the range of strategic, tactical, and operational activities. Consideration of risk covers the potential opportunity from a risk outcome happening in addition to the more traditional consideration of possible downside outcomes.

Includes

- ◆ External risk sources⁶ such as:
 - Financial: Interest rates, foreign exchange, credit
 - Strategic: Competition, industry and customer changes, mergers and acquisition integration
 - Operational: Regulations, Culture, Board Composition
 - Hazard: Natural events, environment, contracts
- ◆ Internal risk sources:
 - Employees
 - Information systems
 - Accounting controls
 - Cash flow
 - Research and development
 - Facilities
- ◆ Risk workshops

5. ITIL V3 Glossary

6. Taken from *A Risk Management Standard*. The Institute of Risk Management. 2002

- ◆ Mitigation strategies

Excludes

- ◆ Identification of compliance requirements and controls (Compliance Management)
- ◆ Security-specific risk management (Security Management), though overall decision making *is* part of this process
- ◆ Implementation and operation of the recommended risk controls (responsibility of the target IT processes)
- ◆ Business Continuity Management (Business responsibility in conjunction with IT Service Continuity Management)

Controls

- Security Plan (From: A72 A725)

A consolidated view and documentation of the resources, approach, procedures and assets to be protected together with a definition of the security practices and controls which will be enacted in order to fulfill the security policy. It covers both technical capabilities (for example, firewalls, encryption) and non-technical considerations (such as segregation of duties, training needs, user responsibilities).
- IT Strategy (From: A3 A31 A315)

A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- Security Policy (From: A7 A72 A722)

The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- Technology Capabilities and Trends
Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.
- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.

Inputs

- Market Analysis (From: A2 A22 A222)

A document that evaluates the current service requirements, market segmentation, current customer profiles, and the current typical IT service provider scope. The purpose is to discern general trends and directions in the current IT service marketplace.
- Business and IT Models (From: A3 A33 A333)

Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.

- **Solution Design (From: A4 A42 A425)**
Solution design, including conceptual, macro, and micro designs, together with identified issues and risks, and formally validated and approved (signed off) by the key stakeholders. It not only covers all the functional and non-functional requirements of the solution, but also the design for meeting the compliance reporting requirements applicable to the solution.
- **Business Risk Posture**
The capability of the business to tolerate varying levels of risk. It includes business guidance on how to choose which risks to accept and which need mitigation.
- **Project Proposal (From: A2 A22 A25 A255 A26 A264 A33 A5 A51 A515)**
A formal statement of an idea being put forward for consideration that includes the business case for the proposed IT investment.
- **Program Plan (From: A37 A372)**
The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:
 - The structure of the set of projects which constitute the program
 - The measurements and reports by which the program will be managed
 - The program's governance and communication plans
- **Project Plan (From: A3 A37 A374)**
The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.
- **Program and Project Reports (From: A37)**
The body of information ranging from formal, regular and summarized, through informal, ad hoc, and detailed about any aspect of program and project status, and plans. It is available to any process with a need to know.

Outputs

- **Risk Assessment and Mitigation Plans (To: A36 A364 A37 A374 A712 A714)**
The recommendations as to the acceptability or otherwise of the risk factors of any undertaking (such as project, external development) and the risk limitation measures selected to reduce the impact of unacceptable risk occurrence.

Activities

This process is composed of these activities:

- 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 and Report Risk Mitigation Results
- A347 Evaluate Risk Management Performance

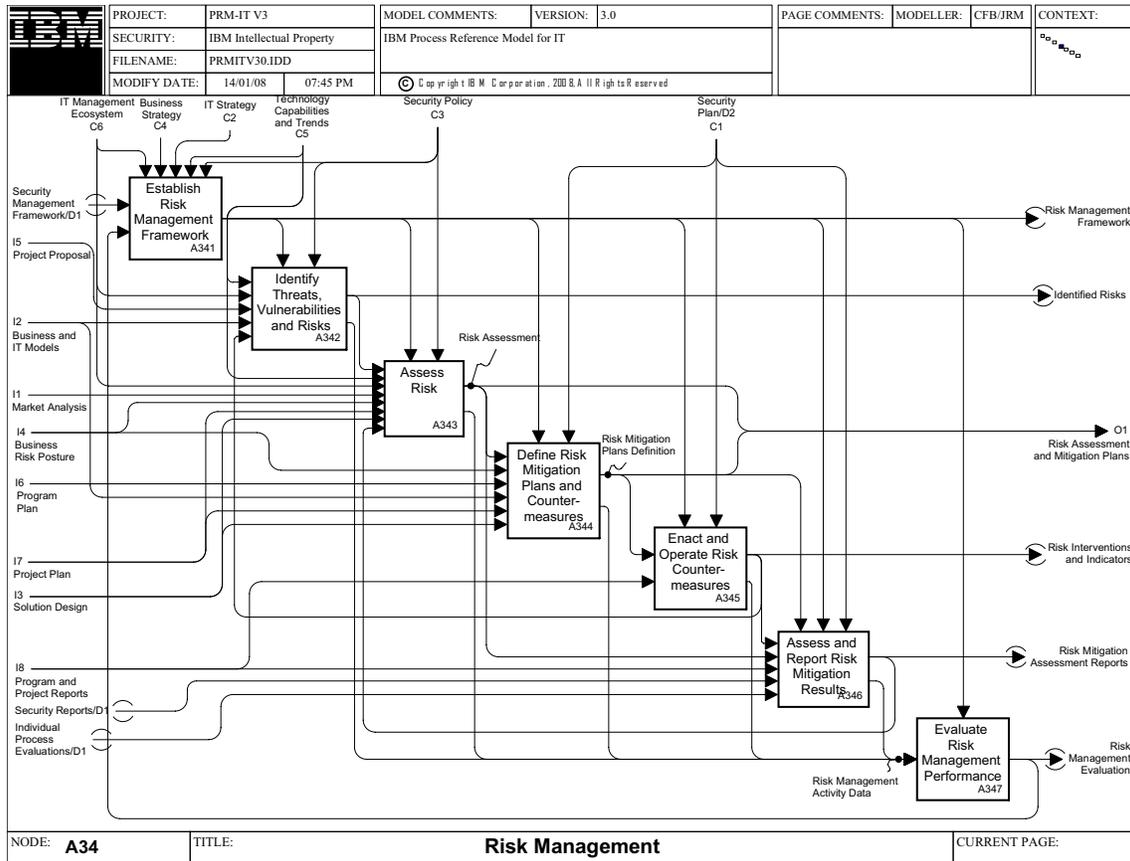


Figure 5. A34 Risk Management

[A341] Establish Risk Management Framework

Description

Based on the business, IT strategy, and the overall IT Management Ecosystem, a framework for risk management has to be developed. The tasks in this activity include:

- Understanding the goals and objectives for the contribution of risk management to the IT endeavor
- Defining the strategy for risk management approaches and capabilities (including tools), and how they should be sourced. For instance, should they be developed in-house or rely more on vendor capabilities
- Establishing the decision making capabilities (for example, the algorithms and evaluation criteria for assessing risk), and the authorities for progressing the results of risk assessment
- Determining skill requirements for the staff, and assigning staff
- Ensuring the framework for risk management is deployed and operational, including relevant communication and guidance to process users.

The establishment of the process framework also includes the continuous improvement of risk management. For example, the consideration of the Risk Management process evaluation and the implementation of recommended improvement actions.

Controls

- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- Technology Capabilities and Trends
Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.
- Security Policy (From: A7 A72 A722)
The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.

Inputs

- Security Management Framework (From: A721)
The conceptional structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing security.

- Risk Management Evaluation (From: A347)

An assessment of the overall performance of the process against the targets set in the process framework and an identification of possible process improvement areas.

Outputs

- Risk Management Framework (To: A342 A343 A344 A345 A346 A347)

A risk management model that allows identification, definition, and assessment of risks, and the implementation and operation of risk mitigation and avoidance activities.

[A342] Identify Threats, Vulnerabilities and Risks

Description

An analysis of any chosen domain focusing on risk, such as any aspect of the business or any change program or project. It will examine items such as Business and IT Models, business policies, regulatory requirements, marketplace information, and IT Management System elements. The outcome of this analysis identifies current risks and vulnerabilities that the business or change activity faces.

Controls

- Risk Management Framework (From: A341)

A risk management model that allows identification, definition, and assessment of risks, and the implementation and operation of risk mitigation and avoidance activities.

- Security Policy (From: A7 A72 A722)

The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.

Inputs

- Technology Capabilities and Trends

Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.

- IT Management Ecosystem (From: A1)

To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.

- Project Proposal (From: A2 A22 A25 A255 A26 A264 A33 A5 A51 A515)

A formal statement of an idea being put forward for consideration that includes the business case for the proposed IT investment.

- Business and IT Models (From: A3 A33 A333)

Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.

- Risk Interventions and Indicators (From: A345)

The actions taken, either directly or implicitly through the controls previously put in place, which aim to modify or determine the events or their outcome so that risk exposures are minimized. In some cases these will be 'Key Risk Indicators' which should be monitored against thresholds rather than directly requiring risk intervention.

Outputs

- Identified Risks (To: A343 A722)
Areas in the business where there is a potential for realization of unwanted, adverse consequences if an event or a given set of events occurs.
- Risk Management Activity Data (To: A347)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A343] Assess Risk

Description

An assessment of identified risks through categorization, impact analysis, quantification and qualification, and prioritization based on severity and probability. Based on this assessment, the business risk posture is updated to reflect the current risk assessment.

Controls

- Risk Management Framework (From: A341)
A risk management model that allows identification, definition, and assessment of risks, and the implementation and operation of risk mitigation and avoidance activities.
- Security Policy (From: A7 A72 A722)
The statement of the types and levels of security over information technology resources and capabilities that must be established and operated in order for those items to be considered *secure*. It provides management direction into the allowable behaviors of the actors working with the resources and exercising the capabilities. It defines the scope of management and specifies the requirements for the security controls.

Inputs

- Identified Risks (From: A342)
Areas in the business where there is a potential for realization of unwanted, adverse consequences if an event or a given set of events occurs.
- Technology Capabilities and Trends
Available external data, both uncoordinated and already analyzed, of world class IT technologies available, declining, and emerging.
- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- Market Analysis (From: A2 A22 A222)
A document that evaluates the current service requirements, market segmentation, current customer profiles, and the current typical IT service provider scope. The purpose is to discern general trends and directions in the current IT service marketplace.
- Business Risk Posture
The capability of the business to tolerate varying levels of risk. It includes business guidance on how to choose which risks to accept and which need mitigation.
- Project Plan (From: A3 A37 A374)
The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.

- Solution Design (From: A4 A42 A425)
Solution design, including conceptual, macro, and micro designs, together with identified issues and risks, and formally validated and approved (signed off) by the key stakeholders. It not only covers all the functional and non-functional requirements of the solution, but also the design for meeting the compliance reporting requirements applicable to the solution.
- Risk Mitigation Assessment Reports (From: A346)
Information about the outcomes of risk mitigation activities, indicating both successes and risk items which require improved treatment.

Outputs

- Risk Assessment (To: A344 A346)
Sets of categorized, quantified, and prioritized risks for which the IT endeavor will need to consider putting in place risk avoidance and mitigation plans.
- Risk Management Activity Data (To: A347)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A344] Define Risk Mitigation Plans and Countermeasures

Description

Based on the Risk Assessment, a plan is developed to effectively manage these risks. The plan includes:

- A strategy for risk avoidance and mitigation
- Action plans, prioritized recommendations, compliance mechanisms, and development of metrics to achieve the desired risk tolerance

Controls

- Risk Management Framework (From: A341)
A risk management model that allows identification, definition, and assessment of risks, and the implementation and operation of risk mitigation and avoidance activities.
- Security Plan (From: A72 A725)
A consolidated view and documentation of the resources, approach, procedures and assets to be protected together with a definition of the security practices and controls which will be enacted in order to fulfill the security policy. It covers both technical capabilities (for example, firewalls, encryption) and non-technical considerations (such as segregation of duties, training needs, user responsibilities).

Inputs

- Risk Assessment (From: A343)
Sets of categorized, quantified, and prioritized risks for which the IT endeavor will need to consider putting in place risk avoidance and mitigation plans.
- Business Risk Posture
The capability of the business to tolerate varying levels of risk. It includes business guidance on how to choose which risks to accept and which need mitigation.
- Program Plan (From: A37 A372)
The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:

- The structure of the set of projects which constitute the program
- The measurements and reports by which the program will be managed
- The program's governance and communication plans
- Business and IT Models (From: A3 A33 A333)
Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.
- Project Plan (From: A3 A37 A374)
The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.
- Solution Design (From: A4 A42 A425)
Solution design, including conceptual, macro, and micro designs, together with identified issues and risks, and formally validated and approved (signed off) by the key stakeholders. It not only covers all the functional and non-functional requirements of the solution, but also the design for meeting the compliance reporting requirements applicable to the solution.

Outputs

- Risk Mitigation Plans Definition (To: A345 A346)
Definition of the Risk Mitigation plans required to be implemented to minimize exposures and vulnerabilities.
- Risk Management Activity Data (To: A347)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A345] Enact and Operate Risk Countermeasures

Description

The selected risk avoidance and mitigation countermeasures are put into effect and carried out. The measures can be one-time, periodical, or continuously active. Implementation will require communication with employees, and active monitoring and measurement.

Controls

- Risk Management Framework (From: A341)
A risk management model that allows identification, definition, and assessment of risks, and the implementation and operation of risk mitigation and avoidance activities.
- Security Plan (From: A72 A725)
A consolidated view and documentation of the resources, approach, procedures and assets to be protected together with a definition of the security practices and controls which will be enacted in order to fulfill the security policy. It covers both technical capabilities (for example, firewalls, encryption) and non-technical considerations (such as segregation of duties, training needs, user responsibilities).

Inputs

- Risk Mitigation Plans Definition (From: A344)
Definition of the Risk Mitigation plans required to be implemented to minimize exposures and vulnerabilities.

- Program and Project Reports (From: A37)

The body of information ranging from formal, regular and summarized, through informal, ad hoc, and detailed about any aspect of program and project status, and plans. It is available to any process with a need to know.

Outputs

- Risk Interventions and Indicators (To: A342 A346)

The actions taken, either directly or implicitly through the controls previously put in place, which aim to modify or determine the events or their outcome so that risk exposures are minimized. In some cases these will be 'Key Risk Indicators' which should be monitored against thresholds rather than directly requiring risk intervention.

- Risk Management Activity Data (To: A347)

Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A346] Assess and Report Risk Mitigation Results

Description

Risk mitigation plan execution and internal controls are monitored and analyzed to determine their impact and effectiveness. Exposures and findings that are discovered during the assessment will be documented and communicated.

Controls

- Risk Mitigation Plans Definition (From: A344)

Definition of the Risk Mitigation plans required to be implemented to minimize exposures and vulnerabilities.

- Risk Management Framework (From: A341)

A risk management model that allows identification, definition, and assessment of risks, and the implementation and operation of risk mitigation and avoidance activities.

- Security Plan (From: A72 A725)

A consolidated view and documentation of the resources, approach, procedures and assets to be protected together with a definition of the security practices and controls which will be enacted in order to fulfill the security policy. It covers both technical capabilities (for example, firewalls, encryption) and non-technical considerations (such as segregation of duties, training needs, user responsibilities).

Inputs

- Risk Interventions and Indicators (From: A345)

The actions taken, either directly or implicitly through the controls previously put in place, which aim to modify or determine the events or their outcome so that risk exposures are minimized. In some cases these will be 'Key Risk Indicators' which should be monitored against thresholds rather than directly requiring risk intervention.

- Risk Assessment (From: A343)

Sets of categorized, quantified, and prioritized risks for which the IT endeavor will need to consider putting in place risk avoidance and mitigation plans.

- Program and Project Reports (From: A37)

The body of information ranging from formal, regular and summarized, through informal, ad hoc, and detailed about any aspect of program and project status, and plans. It is available to any process with a need to know.

- Security Reports (From: A72 A727)
The reports from auditing and other analyses of IT security monitoring data.
- Individual Process Evaluations
A collection of metrics which describe the effectiveness and efficiency of an individual process.

Outputs

- Risk Mitigation Assessment Reports (To: A343)
Information about the outcomes of risk mitigation activities, indicating both successes and risk items which require improved treatment.
- Risk Management Activity Data (To: A347)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A347] Evaluate Risk Management Performance

Description

The evaluation of the performance of the process aims at identifying areas of the overall process that require improvement. For example, the foundation and interfaces of the process, all activities, their accomplishment, their degree of automation, as well as the roles and responsibilities including the respective skills. The bases for the improvements are the insights and the lessons learned from the observations and analysis of activity accomplishments and results.

Controls

- Risk Management Framework (From: A341)
A risk management model that allows identification, definition, and assessment of risks, and the implementation and operation of risk mitigation and avoidance activities.

Inputs

- Risk Management Activity Data (From: A342 A343 A344 A345 A346)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

Outputs

- Risk Management Evaluation (To: A341)
An assessment of the overall performance of the process against the targets set in the process framework and an identification of possible process improvement areas.

[A35] Product Management

Purpose

The purpose of the Product Management process is to guide any IT product (such as an application, an infrastructure component, an IT service, documentation, or combination thereof) throughout its life cycle from inception to retirement and to be the ultimate owner of that product.

Definition of Product: an application, asset, tool, or IT assembly that will be used in the delivery of a set of IT services to IT customers.

Outcomes

As a result of the successful implementation of this process:

- Robust, resilient products meet the IT service needs of IT customers
- Evolving IT products meet business needs
- Adequate resources are provided to carry out product development and support needs
- Each product has a long-term vision and direction

Scope

Product Management involves oversight through the entire life of a product.⁷ This process will make the case for allocation of resources to this product (and hence its inclusion into the portfolio) and then provide stewardship over the efforts to create, launch, operate, maintain and finally retire the product. It will measure product value against objectives throughout the life cycle, and make recommendations for any modification of the product within the overall portfolio.

Designation as a product does not indicate the make-up of solutions and services that will be managed. It acts purely as the unit of management for this process. A product could be developed that becomes the basis for, or contributes to, many services. The converse is also possible.

This process has a symbiotic relationship with Portfolio Management; put another way, they could be seen as two sides of a coin. Whereas Portfolio Management takes an aggregate, balancing view across all IT activities, Product Management exists to champion the case for each IT solution, service or general capability which is managed as a product. In many cases, the Portfolio Management process will trigger a product life cycle by making a high-level, conceptual decision to pursue an opportunity area. Product Management is then responsible for developing the concept through to productive use while under the overall decision-making authority of Portfolio Management.

7. See ITIL V3 *Service Strategy*, Appendix B2 for further discussion

Includes

- ◆ Product vision
- ◆ Long-term product requirements management (as opposed to Solution Requirements, which manages requirements for a specific release)
- ◆ Product marketing and launch
- ◆ Ownership of the content that is included in the Service Catalog
- ◆ Oversight of ongoing product development and enhancement
- ◆ Approval authority over product change requests
- ◆ Initiation of necessary change requests to bring a new product release into production
- ◆ Product assessment and improvement
- ◆ Product retirement

Excludes

- ◆ Development (Realization category of processes)
- ◆ Product sales (Service Marketing and Sales)
- ◆ Project management

Controls

- Business and IT Models (From: A3 A33 A333)
Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.
- IT Budget (From: A8 A81 A813)
The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.
- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- SLAs, OLAs, UCs (From: A2 A24 A243)
The agreements that represent the interlinked set of commitments for the service utility and warranty that is to be provided to one or more customers. The agreement between the customer and the organizational unit that directly provides the service is known as a service level agreement (SLA) and is visible to the customer. The agreements that represent the commitments of the collective set of internal organizational units and external entities to provide identified sub-components of the overall service are known as operational level agreements (OLAs). OLAs are not usually visible to the customer. Contractual statements of the commitments by external entities are known as underpinning contracts (UCs).
ITIL definition of these terms:
 - SLA: "An Agreement between an IT Service Provider and a Customer. The SLA describes the IT Service, documents Service Level Targets, and specifies the

responsibilities of the IT Service Provider and the Customer. A single SLA may cover multiple IT Services or multiple Customers.”⁸

- OLA: “An Agreement between an IT Service Provider and another part of the same Organisation. An OLA supports the IT Service Provider's delivery of IT Services to Customers. The OLA defines the goods or Services to be provided and the responsibilities of both parties.”⁹
- UC: “A Contract between an IT Service Provider and a Third Party. The Third Party provides goods or Services that support delivery of an IT Service to a Customer. The Underpinning Contract defines targets and responsibilities that are required to meet agreed Service Level Targets in an SLA.”¹⁰

These agreements can be in a draft or finalized status.

Inputs

■ Market Analysis (From: A2 A22 A222)

A document that evaluates the current service requirements, market segmentation, current customer profiles, and the current typical IT service provider scope. The purpose is to discern general trends and directions in the current IT service marketplace.

■ Project Proposal (From: A2 A22 A25 A255 A26 A264 A33 A5 A51 A515)

A formal statement of an idea being put forward for consideration that includes the business case for the proposed IT investment.

■ IT Strategy Initiatives (From: A31 A314)

An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.

■ Viable Innovation (From: A32 A325)

Any innovations that seem viable to be adopted by the IT service provider in order to enhance the service to the business (IT Architecture, the IT Portfolio, IT Strategy). The information provided will include analysis and assessment of the potential impact to the business, and to the parameters of the IT service provision, stated in terms of ideas, value and viability.

■ Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)

The collective overall information on both the development plan for the solution and the content of the solution as it progresses from concept to reality.

- Commitments: Sets of requirements, designs and other deliverables, such as test cases. Plans: Sets of committed solution phases, activities, tasks and milestones together with timeframe.

■ Service Resilience Plans (From: A7)

The collection of plans produced by the individual processes involved in ensuring the resilience within service management. Processes contributing are:

- Compliance Management
- Security Management
- Availability Management
- Capacity Management
- Facilities Management

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- IT Service Continuity Management

(See the definition of the *plan* output from each individual process for more details.)

- Service Level Package (From: A2 A25 A255)

Details of the expected implications to the service utility and warranty which will result from agreement with the relevant business units on the demand management approaches under which the service will be provided. ITIL definition: "A defined level of Utility and Warranty for a particular Service Package. Each SLP is designed to meet the needs of a particular Pattern of Business Activity."¹¹

- Change Information (From: A5 A51 A518)

The full scope of information is covered. This could be about an individual detail within a particular change through ad hoc or pre-determined reporting on a set of changes.

- Service Catalog (From: A2 A23 A235)

Catalog of all services offered for delivery by the IT service provider. Portions of it can be used as a means of communication to the customers, but there are also sections that describe details (usually not published outside the delivery organization) of how each service is provided.

ITIL defines Service Catalog as: "A database or structured Document with information about all Live IT Services, including those available for Deployment. The Service Catalogue is the only part of the Service Portfolio published to Customers, and is used to support the sale and delivery of IT Services. The Service Catalogue includes information about deliverables, prices, contact points, ordering and request Processes."¹²

- Stakeholder Requirements (From: A2 A21 A213)

The qualified needs for IT services that are to be progressed through the Portfolio process for decision making.

These needs might be in a form suitable for direct translation into solution requirements and should include stakeholders' acceptance criteria.

- Portfolio Decision and Resource Allocation (From: A36 A365)

An allotment or apportionment of financial and other resources (possibly from both the business and IT) to develop or refine the product vision and product life cycle definition and plan or for any project proposal not related to a specific product. The financial allotment includes consideration of both capital and expense funds.

Outputs

- Change Request (To: A5 A51 A512)

Change requests (also known as RFCs) are the means for submitting proposed change and actual change activity in the environment. Change requests can be triggered for a wide variety of reasons, from a broad spectrum of sources. They can be concerned with any part of the environment or with any service or activity.

- Product Package (To: A2 A23 A24 A243 A5 A52 A522)

A description of the product that details how it is to be iteratively assembled, integrated and deployed, as well as the status of the product itself as it migrates through the various stages of realization, deployment and operation.

- Product Proposal (To: A36 A364)

A product idea being put forward for consideration. A high-level evaluation and documentation of a product's (or change in a product's characteristics) impact on and fit with the IT Portfolio, addressing elements such as the market opportunity, technical and

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integration benefits, risks, costs and potential returns, improving service, competitive positioning, value, lifespan, among others.

Activities

This process is composed of these activities:

- A351 Establish Product Management Framework
- A352 Formulate Product Concept
- A353 Plan and Control Product Lifecycle
- A354 Initiate and Oversee Product Realization
- A355 Guide Product Transition and Operation
- A356 Monitor and Assess Product Performance
- A357 Evaluate Product Management Performance

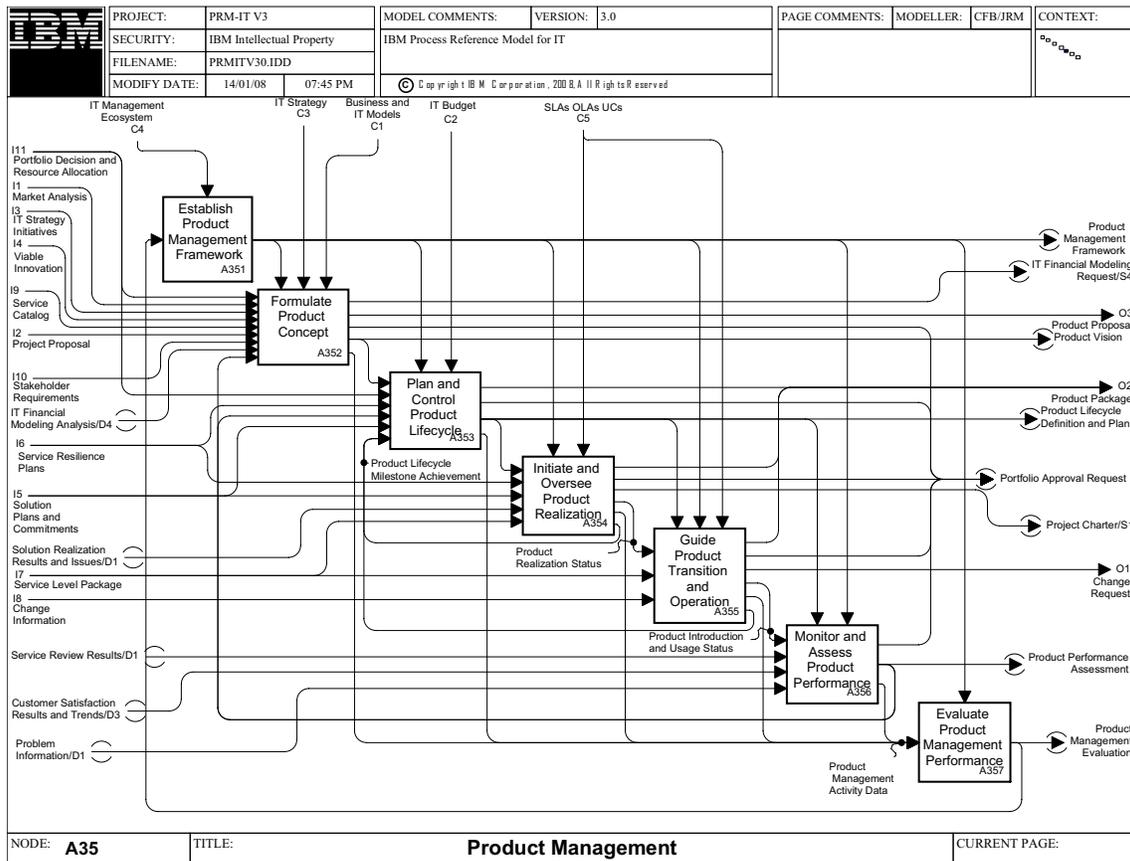


Figure 6. A35 Product Management

[A351] Establish Product Management Framework

Description

Create an overall framework for how Product Management will be carried out. This includes process goals, policies, procedures, tool enablement, metrics, inter-process relationships, role responsibilities, industry research, and other tasks that define the constraints within which Product Management will be performed.

Controls

- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.

Inputs

- Product Management Evaluation (From: A357)
Quantitative and qualitative analysis of the performance of Product Management process and activities as defined in the Product Management Framework. It also incorporates recommendations for changes to the framework, the process, and to the metrics.

Outputs

- Product Management Framework (To: A352 A353 A354 A355 A356 A357)
A specification of the framework and metrics for managing and measuring the Product Management process and activities, and incorporating any mandatory elements required by the overall IT Management System. Incorporates process governance, policies, standards, methods, reporting and evaluation criteria.

[A352] Formulate Product Concept

Description

Define the long-term vision and high-level capabilities of the product. Develop business cases and obtain necessary resource commitments. Define product differentiation and key messaging about the product.

The activity evaluates and documents (at a high level) the market opportunity, potential technical and manufacturing approaches and risks, cost and schedule estimates, and financial impact. A final step is making an assessment of the concept and a decision to proceed to the Develop Definition and Project Plan phase, or to cancel.

Controls

- Product Management Framework (From: A351)
A specification of the framework and metrics for managing and measuring the Product Management process and activities, and incorporating any mandatory elements required by the overall IT Management System. Incorporates process governance, policies, standards, methods, reporting and evaluation criteria.
- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.

- Business and IT Models (From: A3 A33 A333)

Representations of relevant aspects of the business' activities, in model formats, and with or without the inclusion of related IT factors.

Inputs

- Portfolio Decision and Resource Allocation (From: A36 A365)

An allotment or apportionment of financial and other resources (possibly from both the business and IT) to develop or refine the product vision and product life cycle definition and plan or for any project proposal not related to a specific product. The financial allotment includes consideration of both capital and expense funds.

- Market Analysis (From: A2 A22 A222)

A document that evaluates the current service requirements, market segmentation, current customer profiles, and the current typical IT service provider scope. The purpose is to discern general trends and directions in the current IT service marketplace.

- IT Strategy Initiatives (From: A31 A314)

An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.

- Viable Innovation (From: A32 A325)

Any innovations that seem viable to be adopted by the IT service provider in order to enhance the service to the business (IT Architecture, the IT Portfolio, IT Strategy). The information provided will include analysis and assessment of the potential impact to the business, and to the parameters of the IT service provision, stated in terms of ideas, value and viability.

- Service Catalog (From: A2 A23 A235)

Catalog of all services offered for delivery by the IT service provider. Portions of it can be used as a means of communication to the customers, but there are also sections that describe details (usually not published outside the delivery organization) of how each service is provided.

ITIL defines Service Catalog as: "A database or structured Document with information about all Live IT Services, including those available for Deployment. The Service Catalogue is the only part of the Service Portfolio published to Customers, and is used to support the sale and delivery of IT Services. The Service Catalogue includes information about deliverables, prices, contact points, ordering and request Processes."¹³

- Project Proposal (From: A2 A22 A25 A255 A26 A264 A33 A5 A51 A515)

A formal statement of an idea being put forward for consideration that includes the business case for the proposed IT investment.

- Stakeholder Requirements (From: A2 A21 A213)

The qualified needs for IT services that are to be progressed through the Portfolio process for decision making.

These needs might be in a form suitable for direct translation into solution requirements and should include stakeholders' acceptance criteria.

- IT Financial Modeling Analysis (From: A812)

The outcome of the request for modeling the financial implications of any aspect of the IT undertakings.

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- **Product Performance Assessment (From: A356)**
A summary of the product's current level of achievement with regard to commitments made in the product plan. Includes assessments of both quantitative and qualitative factors and the overall value of the product.

Outputs

- **IT Financial Modeling Request (To: A812)**
A request for financial modeling to be performed so that the financial implications of a potential proposal relating to IT resources and capabilities can be understood. Any process can originate this type of request.
- **Product Proposal (To: A36 A364)**
A product idea being put forward for consideration. A high-level evaluation and documentation of a product's (or change in a product's characteristics) impact on and fit with the IT Portfolio, addressing elements such as the market opportunity, technical and integration benefits, risks, costs and potential returns, improving service, competitive positioning, value, life span, among others.
- **Portfolio Approval Request**
A request directed to the IT Portfolio Management process for a decision or commitment, related to a given product's position or milestone achievements within the stages of its life cycle.
- **Product Vision (To: A353)**
A shared perspective on the future possibilities of a product or group of related products. Includes context elements such as markets and market share, customers, technologies and projected technology advances, competitors and product differentiators, cost and return parameters. Provides a touchstone for product plans and life cycle events.
- **Product Management Activity Data (To: A357)**
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A353] Plan and Control Product Lifecycle

Description

Match product commitments against schedules and resources. Plan contents of product versions. Determine schedules and plans for new releases. Identify priorities concerning requirements and responses. Determine product variations. Define packaging approach. Identify key interfaces with other products. Control product progress against plan.

Controls

- **Product Management Framework (From: A351)**
A specification of the framework and metrics for managing and measuring the Product Management process and activities, and incorporating any mandatory elements required by the overall IT Management System. Incorporates process governance, policies, standards, methods, reporting and evaluation criteria.
- **IT Budget (From: A8 A81 A813)**
The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.

Inputs

- **Product Vision (From: A352)**

A shared perspective on the future possibilities of a product or group of related products. Includes context elements such as markets and market share, customers, technologies and projected technology advances, competitors and product differentiators, cost and return parameters. Provides a touchstone for product plans and life cycle events.
- **Portfolio Decision and Resource Allocation (From: A36 A365)**

An allotment or apportionment of financial and other resources (possibly from both the business and IT) to develop or refine the product vision and product life cycle definition and plan or for any project proposal not related to a specific product. The financial allotment includes consideration of both capital and expense funds.
- **Service Resilience Plans (From: A7)**

The collection of plans produced by the individual processes involved in ensuring the resilience within service management. Processes contributing are:

 - Compliance Management
 - Security Management
 - Availability Management
 - Capacity Management
 - Facilities Management
 - IT Service Continuity Management

(See the definition of the *plan* output from each individual process for more details.)
- **Product Performance Assessment (From: A356)**

A summary of the product's current level of achievement with regard to commitments made in the product plan. Includes assessments of both quantitative and qualitative factors and the overall value of the product.
- **Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)**

The collective overall information on both the development plan for the solution and the content of the solution as it progresses from concept to reality.

 - Plans: Sets of committed solution phases, activities, tasks and milestones together with timeframe.
 - Commitments: Sets of requirements, designs and other deliverables, such as test cases.
- **Product Lifecycle Milestone Achievement (From: A354 A355)**

Information and status of the product's progression through declared life cycle milestones for realization, transition and operation.

Outputs

- **Product Package (To: A2 A23 A24 A243 A5 A52 A522)**

A description of the product that details how it is to be iteratively assembled, integrated and deployed, as well as the status of the product itself as it migrates through the various stages of realization, deployment and operation.
- **Portfolio Approval Request**

A request directed to the IT Portfolio Management process for a decision or commitment, related to a given product's position or milestone achievements within the stages of its life cycle.
- **Product Lifecycle Definition and Plan (To: A354 A355 A356)**

A plan that guides and controls a given product's evolution and transition through all phases of the product life cycle. The plan addresses milestones related to requirements coverage, realization and integration activities, product version and release schedules,

funding and resource assumptions, as well as relationships to IT Strategy and IT Portfolio directions. Also covers retirement and disposal.

- Product Management Activity Data (To: A357)

Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A354] Initiate and Oversee Product Realization

Description

Provide resources for the development and introduction of the product. Plan and provide resources needed for development cycles. If this is a service, create the service package. Collaborate with project management to ensure product release meets requirements. Authorize acceptance of completed product. Introduce the product into the IT community.

Controls

- Product Management Framework (From: A351)

A specification of the framework and metrics for managing and measuring the Product Management process and activities, and incorporating any mandatory elements required by the overall IT Management System. Incorporates process governance, policies, standards, methods, reporting and evaluation criteria.

- SLAs, OLAs, UCs (From: A2 A24 A243)

The agreements that represent the interlinked set of commitments for the service utility and warranty that is to be provided to one or more customers. The agreement between the customer and the organizational unit that directly provides the service is known as a service level agreement (SLA) and is visible to the customer. The agreements that represent the commitments of the collective set of internal organizational units and external entities to provide identified sub-components of the overall service are known as operational level agreements (OLAs). OLAs are not usually visible to the customer. Contractual statements of the commitments by external entities are known as underpinning contracts (UCs).

ITIL definition of these terms:

- SLA: “An Agreement between an IT Service Provider and a Customer. The SLA describes the IT Service, documents Service Level Targets, and specifies the responsibilities of the IT Service Provider and the Customer. A single SLA may cover multiple IT Services or multiple Customers.”¹⁴
- OLA: “An Agreement between an IT Service Provider and another part of the same Organisation. An OLA supports the IT Service Provider's delivery of IT Services to Customers. The OLA defines the goods or Services to be provided and the responsibilities of both parties.”¹⁵
- UC: “A Contract between an IT Service Provider and a Third Party. The Third Party provides goods or Services that support delivery of an IT Service to a Customer. The Underpinning Contract defines targets and responsibilities that are required to meet agreed Service Level Targets in an SLA.”¹⁶

These agreements can be in a draft or finalized status.

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Inputs

- **Product Lifecycle Definition and Plan (From: A353)**

A plan that guides and controls a given product's evolution and transition through all phases of the product life cycle. The plan addresses milestones related to requirements coverage, realization and integration activities, product version and release schedules, funding and resource assumptions, as well as relationships to IT Strategy and IT Portfolio directions. Also covers retirement and disposal.
- **Service Resilience Plans (From: A7)**

The collection of plans produced by the individual processes involved in ensuring the resilience within service management. Processes contributing are:

 - Compliance Management
 - Security Management
 - Availability Management
 - Capacity Management
 - Facilities Management
 - IT Service Continuity Management

(See the definition of the *plan* output from each individual process for more details.)
- **Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)**

The collective overall information on both the development plan for the solution and the content of the solution as it progresses from concept to reality.

 - Plans: Sets of committed solution phases, activities, tasks and milestones together with timeframe.
 - Commitments: Sets of requirements, designs and other deliverables, such as test cases.
- **Solution Realization Results and Issues (From: A4)**

The collection of summary level history and status of Solution Realization activities and work products throughout their life cycle. Typically used to establish and update organizational performance benchmarks (estimates versus actual), transmit quality information, and other heuristics related to Solution Realization processes.
- **Service Level Package (From: A2 A25 A255)**

Details of the expected implications to the service utility and warranty which will result from agreement with the relevant business units on the demand management approaches under which the service will be provided. ITIL definition: "A defined level of Utility and Warranty for a particular Service Package. Each SLP is designed to meet the needs of a particular Pattern of Business Activity."¹⁷

Outputs

- **Product Package (To: A2 A23 A24 A243 A5 A52 A522)**

A description of the product that details how it is to be iteratively assembled, integrated and deployed, as well as the status of the product itself as it migrates through the various stages of realization, deployment and operation.
- **Portfolio Approval Request**

A request directed to the IT Portfolio Management process for a decision or commitment, related to a given product's position or milestone achievements within the stages of its life cycle.

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- Project Charter (To: A33 A333 A334 A37 A372 A373 A4 A41 A412 A414)
A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.
- Product Realization Status (To: A355)
Detailed information about the progress of projects underway to create or change the product.
- Product Management Activity Data (To: A357)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.
- Product Lifecycle Milestone Achievement (To: A353)
Information and status of the product's progression through declared life cycle milestones for realization, transition and operation.

[A355] Guide Product Transition and Operation

Description

Ensure proper deployment and eventual retirement of the product. Promote integration of the product within IT services. Ensure satisfactory testing and pilots. Identify and target key customers of the product. Interface with marketing and sales. Ensure support over all active releases.

Controls

- Product Lifecycle Definition and Plan (From: A353)
A plan that guides and controls a given product's evolution and transition through all phases of the product life cycle. The plan addresses milestones related to requirements coverage, realization and integration activities, product version and release schedules, funding and resource assumptions, as well as relationships to IT Strategy and IT Portfolio directions. Also covers retirement and disposal.
- Product Management Framework (From: A351)
A specification of the framework and metrics for managing and measuring the Product Management process and activities, and incorporating any mandatory elements required by the overall IT Management System. Incorporates process governance, policies, standards, methods, reporting and evaluation criteria.
- SLAs, OLAs, UCs (From: A2 A24 A243)
The agreements that represent the interlinked set of commitments for the service utility and warranty that is to be provided to one or more customers. The agreement between the customer and the organizational unit that directly provides the service is known as a service level agreement (SLA) and is visible to the customer. The agreements that represent the commitments of the collective set of internal organizational units and external entities to provide identified sub-components of the overall service are known as operational level agreements (OLAs). OLAs are not usually visible to the customer. Contractual statements of the commitments by external entities are known as underpinning contracts (UCs).
ITIL definition of these terms:
These agreements can be in a draft or finalized status.

Inputs

- **Product Realization Status (From: A354)**
Detailed information about the progress of projects underway to create or change the product.
- **Service Level Package (From: A2 A25 A255)**
Details of the expected implications to the service utility and warranty which will result from agreement with the relevant business units on the demand management approaches under which the service will be provided. ITIL definition: “A defined level of Utility and Warranty for a particular Service Package. Each SLP is designed to meet the needs of a particular Pattern of Business Activity.”¹⁸
- **Change Information (From: A5 A51 A518)**
The full scope of information is covered. This could be about an individual detail within a particular change through ad hoc or pre-determined reporting on a set of changes.

Outputs

- **Product Package (To: A2 A23 A24 A243 A5 A52 A522)**
A description of the product that details how it is to be iteratively assembled, integrated and deployed, as well as the status of the product itself as it migrates through the various stages of realization, deployment and operation.
- **Portfolio Approval Request**
A request directed to the IT Portfolio Management process for a decision or commitment, related to a given product's position or milestone achievements within the stages of its life cycle.
- **Change Request (To: A5 A51 A512)**
Change requests (also known as RFCs) are the means for submitting proposed change and actual change activity in the environment. Change requests can be triggered for a wide variety of reasons, from a broad spectrum of sources. They can be concerned with any part of the environment or with any service or activity.
- **Product Introduction and Usage Status (To: A356)**
Detailed information about the progress of projects underway to deploy or retire the product, as well as information about current usage and acceptance.
- **Product Management Activity Data (To: A357)**
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.
- **Product Lifecycle Milestone Achievement (To: A353)**
Information and status of the product's progression through declared life cycle milestones for realization, transition and operation.

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[A356] Monitor and Assess Product Performance

Description

Collect product metrics and analyze to identify relevant aspects of product performance against commitments in the product plan. Identify opportunities for improving the product. Determine the value of the product to the IT organization and the business. Identify tangible and intangible value of the product.

Controls

- Product Lifecycle Definition and Plan (From: A353)
A plan that guides and controls a given product's evolution and transition through all phases of the product life cycle. The plan addresses milestones related to requirements coverage, realization and integration activities, product version and release schedules, funding and resource assumptions, as well as relationships to IT Strategy and IT Portfolio directions. Also covers retirement and disposal.
- Product Management Framework (From: A351)
A specification of the framework and metrics for managing and measuring the Product Management process and activities, and incorporating any mandatory elements required by the overall IT Management System. Incorporates process governance, policies, standards, methods, reporting and evaluation criteria.

Inputs

- Product Introduction and Usage Status (From: A355)
Detailed information about the progress of projects underway to deploy or retire the product, as well as information about current usage and acceptance.
- Service Review Results (From: A24 A245)
The outcome from a review of service level attainment. This might include:
 - Exceptions and violations with regard to target and actual service delivery
 - Determination of responsibility for non-attainment
 - Identification of penalties incurred
- Customer Satisfaction Results and Trends (From: A27 A276)
A report summarizing current customer satisfaction results and historical data. Can be used to identify trends.
- Problem Information (From: A6 A66 A667)
Information about one or more problems. Can range from full details of an individual problem through to collated and summarized information about sets of problems. Can be provided both as formal reports (such as documents to customers describing root cause, contributing factors and corrective actions) and informally as structured data for other processes to analyze for their own purposes.

Outputs

- Portfolio Approval Request
A request directed to the IT Portfolio Management process for a decision or commitment, related to a given product's position or milestone achievements within the stages of its life cycle.
- Product Performance Assessment (To: A273 A352 A353)
A summary of the product's current level of achievement with regard to commitments made in the product plan. Includes assessments of both quantitative and qualitative factors and the overall value of the product.

- Product Management Activity Data (To: A357)

Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A357] Evaluate Product Management Performance

Description

This activity determines how well product management was carried out versus its objectives. Metrics defined by the process framework are collected and analyzed. In addition, other sources of feedback, such as anecdotal feedback, are collected, and assessments are carried out as called for by the process framework. All of this goes into making recommendations for improving the process framework, and those recommendations are provided to the Establish Product Management Framework activity.

Controls

- Product Management Framework (From: A351)

A specification of the framework and metrics for managing and measuring the Product Management process and activities, and incorporating any mandatory elements required by the overall IT Management System. Incorporates process governance, policies, standards, methods, reporting and evaluation criteria.

Inputs

- Product Management Activity Data (From: A352 A353 A354 A355 A356)

Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

Outputs

- Product Management Evaluation (To: A351)

Quantitative and qualitative analysis of the performance of Product Management process and activities as defined in the Product Management Framework. It also incorporates recommendations for changes to the framework, the process, and to the metrics.

[A36] Portfolio Management

Purpose

The purpose of the Portfolio Management process is to decide the content of and resource allocation for the set of IT investments. It includes 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 undertakings that consume resources (such as applications, services, and IT projects) in order to understand their value to the IT organization.

Definition of Portfolio: The set of development projects and ongoing delivery services that are part of the IT budget.

Outcomes

As a result of the successful implementation of this process:

- Customers participate in defining the IT Portfolio
- The strategic fit of IT investments to business intent and priorities is very well matched
- Business needs correlate very closely to IT expenditures
- The portfolio meets business needs
- The business receives maximum value from the IT Portfolio

Scope

Provide for the continuous identification, evaluation, selection, control, and life cycle management of the aggregate collection of IT investments

Includes

- ◆ Cognizance of key business drivers to influence investment decisions
- ◆ Decisions on what programs and projects to fund, often in conjunction with any business or customer stakeholders
- ◆ Application portfolio management
- ◆ Identification of in-sourced, out-sourced, business, and infrastructure applications and services to be included in the portfolio
- ◆ Determination of value obtained or projected from portfolio items

Excludes

- ◆ Execution of projects (Program and Project Management)
- ◆ Asset management
- ◆ Delivery of services (Operations category of processes)
- ◆ Service Level Management
- ◆ Customer Satisfaction Management

Controls

- **Architecture Baselines and Roadmaps (From: A3 A33 A334)**
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.
- **IT Strategy (From: A3 A31 A315)**
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- **Business Strategy**
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- **IT Management Ecosystem (From: A1)**
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- **Compliance Plans and Controls (From: A7 A71 A714)**
The authoritative and comprehensive statement of:
 - The items for which compliance is required
 - The means (policies, data specifications, procedures, techniques, tools) to achieve compliance
 - The definition of required compliance metrics and reports by which conformance will be able to be demonstrated for required scrutinyIt will be the major vehicle for communications and guidance on compliance efforts.

Inputs

- **IT Budget (From: A8 A81 A813)**
The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.
- **Risk Assessment and Mitigation Plans (From: A34)**
The recommendations as to the acceptability or otherwise of the risk factors of any undertaking (such as project, external development) and the risk limitation measures selected to reduce the impact of unacceptable risk occurrence.
- **Product Proposal (From: A35 A352)**
A product idea being put forward for consideration. A high-level evaluation and documentation of a product's (or change in a product's characteristics) impact on and fit with the IT Portfolio, addressing elements such as the market opportunity, technical and integration benefits, risks, costs and potential returns, improving service, competitive positioning, value, lifespan, among others.
- **Market Analysis (From: A2 A22 A222)**
A document that evaluates the current service requirements, market segmentation, current customer profiles, and the current typical IT service provider scope. The purpose is to discern general trends and directions in the current IT service marketplace.
- **Project Proposal (From: A2 A22 A25 A255 A26 A264 A33 A5 A51 A515)**
A formal statement of an idea being put forward for consideration that includes the business case for the proposed IT investment.

- **IT Strategy Initiatives (From: A31 A314)**

An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.
- **Viable Innovation (From: A32 A325)**

Any innovations that seem viable to be adopted by the IT service provider in order to enhance the service to the business (IT Architecture, the IT Portfolio, IT Strategy). The information provided will include analysis and assessment of the potential impact to the business, and to the parameters of the IT service provision, stated in terms of ideas, value and viability.
- **Service Resilience Plans (From: A7)**

The collection of plans produced by the individual processes involved in ensuring the resilience within service management. Processes contributing are:

 - Compliance Management
 - Security Management
 - Availability Management
 - Capacity Management
 - Facilities Management
 - IT Service Continuity Management

(See the definition of the *plan* output from each individual process for more details.)
- **IT Financial Reports (From: A8 A81 A813 A814 A815)**

All reports on financial data of IT for different stakeholders. Covers a wide range of reports from outlining projected costs through after-the-fact financial analyses.
- **Service Catalog (From: A2 A23 A235)**

Catalog of all services offered for delivery by the IT service provider. Portions of it can be used as a means of communication to the customers, but there are also sections that describe details (usually not published outside the delivery organization) of how each service is provided.

ITIL defines Service Catalog as: “A database or structured Document with information about all Live IT Services, including those available for Deployment. The Service Catalogue is the only part of the Service Portfolio published to Customers, and is used to support the sale and delivery of IT Services. The Service Catalogue includes information about deliverables, prices, contact points, ordering and request Processes.”¹⁹
- **Stakeholder Requirements (From: A2 A21 A213)**

The qualified needs for IT services that are to be progressed through the Portfolio process for decision making.

These needs might be in a form suitable for direct translation into solution requirements and should include stakeholders' acceptance criteria.
- **Program and Project Reports (From: A37)**

The body of information ranging from formal, regular and summarized, through informal, ad hoc, and detailed about any aspect of program and project status, and plans. It is available to any process with a need to know.

Outputs

- **IT Portfolio (To: A1 A12 A122 A123 A124 A125 A126 A13 A131 A132 A133 A14 A142 A2 A21 A211 A213 A22 A221 A222 A223 A226 A23 A231 A232 A233 A24 A241 A243 A25**

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A251 A254 A255 A26 A261 A263 A27 A271 A31 A313 A314 A32 A322 A324 A33 A331 A366 A4 A42 A421 A8 A81 A811 A82 A822 A83 A831 A85 A852)

A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.

■ IT Business Value Report

The contribution to the business from an information technology investment, usually expressed in economic terms.

■ Program Charter (To: A37 A372)

A document issued by or created on behalf of the sponsor to describe the program's objectives. It provides the program manager with the authority to apply organizational resources to set up and run program activities.

■ Project Charter (To: A33 A333 A334 A37 A372 A373 A4 A41 A412 A414)

A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.

■ IT Plan (To: A2 A22 A221 A25 A254 A255 A26 A264 A265 A31 A314 A366 A4 A41 A411 A42 A421 A43 A431 A44 A441 A45 A451 A5 A51 A511 A52 A521 A53 A531 A6 A61 A611 A62 A621 A63 A631 A64 A641 A65 A651 A66 A661 A67 A671 A7 A72 A723 A725 A73 A731 A737 A74 A741 A742 A745 A75 A752 A76 A763 A764 A8 A81 A813 A84 A842 A844)

The set of approved projects and associated schedule, operating plan, service level management commitments, and resource allocation commitments and adjustments for a defined fiscal or planning cycle.

■ IT Portfolio Performance Report (To: A31 A313 A316 A364 A365 A366)

A management report describing the actual results of IT portfolio management activities in terms of value realized, balance achieved, and degree of strategic alignment.

■ Portfolio Decision and Resource Allocation (To: A35 A352 A353 A366 A813)

An allotment or apportionment of financial and other resources (possibly from both the business and IT) to develop or refine the product vision and product life cycle definition and plan or for any project proposal not related to a specific product. The financial allotment includes consideration of both capital and expense funds.

Activities

This process is composed of these activities:

- A361 Establish Portfolio Management Framework
- A362 Inventory IT Projects and Services
- A363 Create and Maintain IT Portfolio Categories
- A364 Assess and Prioritize IT Portfolio
- A365 Make IT Portfolio Decisions and Commitments
- A366 Conduct IT Portfolio Review
- A367 Communicate IT Business Value and IT Portfolio Performance
- A368 Evaluate Portfolio Management Performance

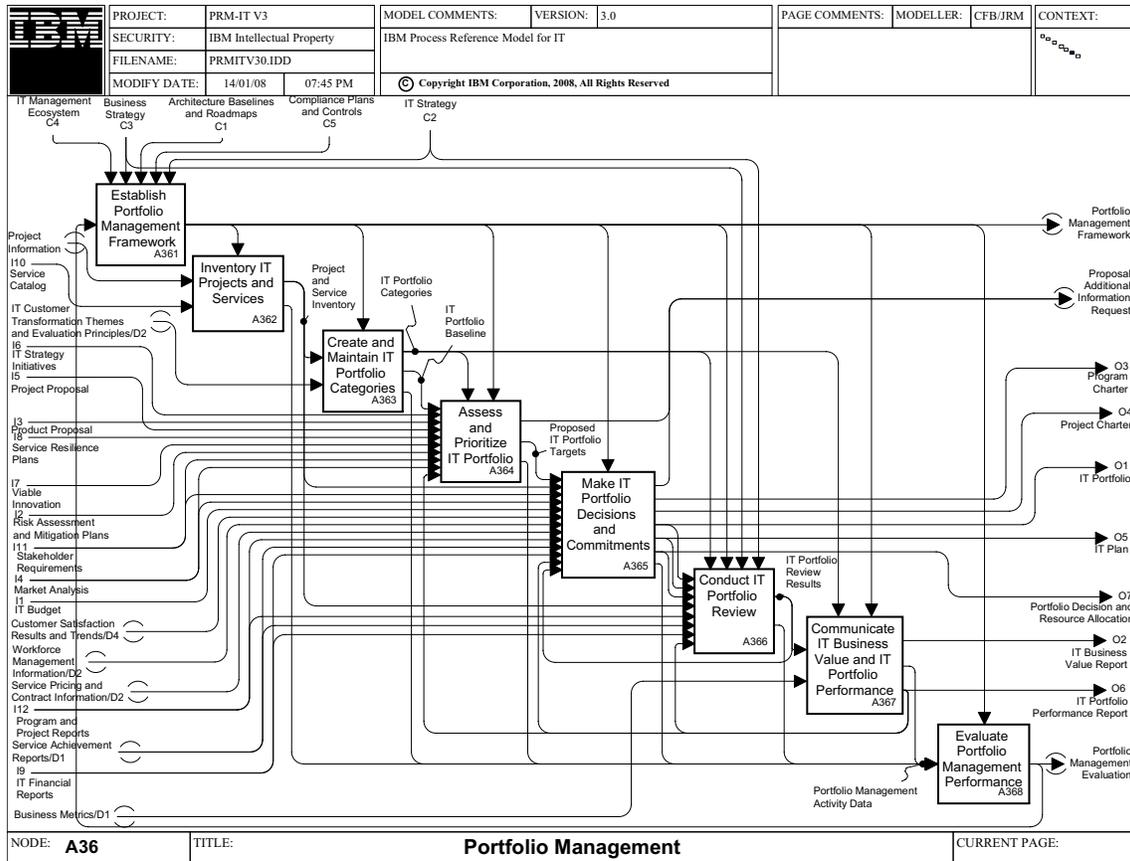


Figure 7. A36 Portfolio Management

[A361] Establish Portfolio Management Framework

Description

The IT Portfolio Management Framework is established by understanding the business and IT strategies, determining the strategic priorities and assumptions for IT investments (focus areas to allocate resources). Further, it defines the strategic, organizational, process, and technology disciplines for managing the IT Portfolio, in line with the overarching governance from the IT Management Ecosystem. The disciplines are documented in a conceptual structure called the IT Portfolio Management Framework, which is used to communicate the framework contents to the organization.

Controls

- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- Architecture Baselines and Roadmaps (From: A3 A33 A334)
Provides an agreed, published statement of the required architecture at a moment in time. Includes statements to assist in selection and evaluation of appropriate implementations of specified architecture building blocks.
- Compliance Plans and Controls (From: A7 A71 A714)
The authoritative and comprehensive statement of:
 - The items for which compliance is required
 - The means (policies, data specifications, procedures, techniques, tools) to achieve compliance
 - The definition of required compliance metrics and reports by which conformance will be able to be demonstrated for required scrutinyIt will be the major vehicle for communications and guidance on compliance efforts.
- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.

Inputs

- Portfolio Management Evaluation (From: A368)
The effectiveness and efficiency of the process activities and practices performed in managing the IT portfolio.

Outputs

- Portfolio Management Framework (To: A362 A363 A364 A365 A366 A367 A368)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing the IT portfolio.

[A362] Inventory IT Projects and Services

Description

This activity creates and maintains an itemized record of all IT projects and IT services that IT resources have been allocated or are being consumed.

Controls

- Portfolio Management Framework (From: A361)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing the IT portfolio.

Inputs

- Project Information
Project information includes charter, description, budget and schedule performance and outlook.
- Service Catalog (From: A2 A23 A235)
Catalog of all services offered for delivery by the IT service provider. Portions of it can be used as a means of communication to the customers, but there are also sections that describe details (usually not published outside the delivery organization) of how each service is provided.
ITIL defines Service Catalog as: "A database or structured Document with information about all Live IT Services, including those available for Deployment. The Service Catalogue is the only part of the Service Portfolio published to Customers, and is used to support the sale and delivery of IT Services. The Service Catalogue includes information about deliverables, prices, contact points, ordering and request Processes."²⁰

Outputs

- Project and Service Inventory
The itemized record of projects and services for which IT resources are being consumed or are being proposed.(To: A363 A365 A366)
- Portfolio Management Activity Data (To: A368)
Performance and quality data regarding activities performed in managing the IT portfolio.

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[A363] Create and Maintain IT Portfolio Categories

Description

Based on the strategic priorities and assumptions related for the use of IT within the business, this activity creates and maintains the categorization schema to be applied to the IT Portfolio. The categories assist management in assessing the coverage of current and proposed services and projects, and their relative contribution to the maximization of value, balance, and strategic alignment.

Controls

- Portfolio Management Framework (From: A361)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing the IT portfolio.

Inputs

- Project and Service Inventory (From: A362)
The itemized record of projects and services for which IT resources are being consumed or are being proposed.
- IT Customer Transformation Themes and Evaluation Principles (From: A26 A263)
A statement of the general headings under a customer's business operations that might be transformed together with a set of evaluation principles which can be used to prioritize alternative transformation candidates.

Outputs

- IT Portfolio Categories (To: A364 A366 A367)
Key project and asset characteristics and parameters that are used to ensure strategic alignment with business priorities and to manage risk through diversity of investments.
- IT Portfolio Baseline (To: A364)
The initial or starting point of the IT portfolio.
- Portfolio Management Activity Data (To: A368)
Performance and quality data regarding activities performed in managing the IT portfolio.

[A364] Assess and Prioritize IT Portfolio

Description

This activity enables the consistent evaluation and adjustment of the IT Portfolio. For each IT project and the majority of IT assets, a unique value is determined in terms of risk and return, followed by an overall ranking of relative value contribution.

Using this data, IT managers (and the business) can ensure their investment and portfolio decisions consider the observed or projected values of specific projects and assets, and improve the predictability of anticipated returns.

Controls

- IT Portfolio Categories (From: A363)
Key project and asset characteristics and parameters that are used to ensure strategic alignment with business priorities and to manage risk through diversity of investments.
- Portfolio Management Framework (From: A361)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing the IT portfolio.

Inputs

- IT Portfolio Baseline (From: A363)
The initial or starting point of the IT portfolio.
- IT Strategy Initiatives (From: A31 A314)
An outline charter for each strategic IT initiative, stated in terms of scope of change, stakeholders, benefits, time scales and costs. The scope of change is stated in terms of changes to the architecture baseline.
- Product Proposal (From: A35 A352)
A product idea being put forward for consideration. A high-level evaluation and documentation of a product's (or change in a product's characteristics) impact on and fit with the IT Portfolio, addressing elements such as the market opportunity, technical and integration benefits, risks, costs and potential returns, improving service, competitive positioning, value, lifespan, among others.
- Project Proposal (From: A2 A22 A25 A255 A26 A264 A33 A5 A51 A515)
A formal statement of an idea being put forward for consideration that includes the business case for the proposed IT investment.
- Service Resilience Plans (From: A7)
The collection of plans produced by the individual processes involved in ensuring the resilience within service management. Processes contributing are:
 - Compliance Management
 - Security Management
 - Availability Management
 - Capacity Management
 - Facilities Management
 - IT Service Continuity Management(See the definition of the *plan* output from each individual process for more details.)

- **Viable Innovation (From: A32 A325)**

Any innovations that seem viable to be adopted by the IT service provider in order to enhance the service to the business (IT Architecture, the IT Portfolio, IT Strategy). The information provided will include analysis and assessment of the potential impact to the business, and to the parameters of the IT service provision, stated in terms of ideas, value and viability.
- **Risk Assessment and Mitigation Plans (From: A34)**

The recommendations as to the acceptability or otherwise of the risk factors of any undertaking (such as project, external development) and the risk limitation measures selected to reduce the impact of unacceptable risk occurrence.
- **Stakeholder Requirements (From: A2 A21 A213)**

The qualified needs for IT services that are to be progressed through the Portfolio process for decision making.

These needs might be in a form suitable for direct translation into solution requirements and should include stakeholders' acceptance criteria.
- **Market Analysis (From: A2 A22 A222)**

A document that evaluates the current service requirements, market segmentation, current customer profiles, and the current typical IT service provider scope. The purpose is to discern general trends and directions in the current IT service marketplace.
- **IT Portfolio Performance Report (From: A36 A367)**

A management report describing the actual results of IT portfolio management activities in terms of value realized, balance achieved, and degree of strategic alignment.

Outputs

- **Proposal Additional Information Request**

A request to provide additional information for a proposed project in order to effectively perform portfolio management activities.
- **Proposed IT Portfolio Targets (To: A365)**

The set of performance targets set for the IT portfolio including economic, strategic alignment, and balance.
- **Portfolio Management Activity Data (To: A368)**

Performance and quality data regarding activities performed in managing the IT portfolio.

[A365] Make IT Portfolio Decisions and Commitments

Description

This is the portfolio gating mechanism, which means that management confirms the IT Portfolio targets. It approves accepted project charters and provisions resources, cancels projects and de-commits resources, approves the IT plan and authorizes funding for IT operations. The aggregate of these decisions establishes the contents of the IT Portfolio, and the detail of them represents the IT Plan. The IT plan provides the basis for the day-to-day management of IT.

Controls

- Portfolio Management Framework (From: A361)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing the IT portfolio.

Inputs

- Proposed IT Portfolio Targets (From: A364)
The set of performance targets set for the IT portfolio including economic, strategic alignment, and balance.
- Project and Service Inventory (From: A362)
The itemized record of projects and services for which IT resources are being consumed or are being proposed.
- Stakeholder Requirements (From: A2 A21 A213)
The qualified needs for IT services that are to be progressed through the Portfolio process for decision making.
These needs might be in a form suitable for direct translation into solution requirements and should include stakeholders' acceptance criteria.
- Market Analysis (From: A2 A22 A222)
A document that evaluates the current service requirements, market segmentation, current customer profiles, and the current typical IT service provider scope. The purpose is to discern general trends and directions in the current IT service marketplace.
- IT Budget (From: A8 A81 A813)
The planned IT funding broken down in relevant ways, such as activities and milestones per period, to reflect the contents of the IT plan.
- Customer Satisfaction Results and Trends (From: A27 A276)
A report summarizing current customer satisfaction results and historical data. Can be used to identify trends.
- Workforce Management Information (From: A84 A842 A843 A844)
Profiles of current managed workforce including performance reviews, skills, training and compensation.
- Service Pricing and Contract Information (From: A83)
Ranges from generic to specific:
 - Services and price list (the complete service price model)
 - Standard terms and conditions
 - Individual actual and proposed terms and conditions for a specific customer

- Program and Project Reports (From: A37)
The body of information ranging from formal, regular and summarized, through informal, ad hoc, and detailed about any aspect of program and project status, and plans. It is available to any process with a need to know.
- Service Achievement Reports (From: A24 A244)
One or more reports about how well the service levels have been achieved and which compare IT's actual service level results achieved against the service level standards and any specific service level targets negotiated with customers. The reports can include details of service impacts – both directly measured and an assessment of business impact. Some sections will be for customer distribution and others can be for service provider receipt only.
- IT Financial Reports (From: A8 A81 A813 A814 A815)
All reports on financial data of IT for different stakeholders. Covers a wide range of reports from outlining projected costs through after-the-fact financial analyses.
- IT Portfolio Performance Report (From: A36 A367)
A management report describing the actual results of IT portfolio management activities in terms of value realized, balance achieved, and degree of strategic alignment.
- IT Portfolio Review Results (From: A366)
The level of performance achieved to-date of the IT portfolio against target and planned adjustments necessary to close any performance shortfalls or to exploit performance opportunities.

Outputs

- Proposal Additional Information Request
A request to provide additional information for a proposed project in order to effectively perform portfolio management activities.
- Program Charter (To: A37 A372)
A document issued by or created on behalf of the sponsor to describe the program's objectives. It provides the program manager with the authority to apply organizational resources to set up and run program activities.
- Project Charter (To: A33 A333 A334 A37 A372 A373 A4 A41 A412 A414)
A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.
- IT Portfolio (To: A1 A12 A122 A123 A124 A125 A126 A13 A131 A132 A133 A14 A142 A2 A21 A211 A213 A22 A221 A222 A223 A226 A23 A231 A232 A233 A24 A241 A243 A25 A251 A254 A255 A26 A261 A263 A27 A271 A31 A313 A314 A32 A322 A324 A33 A331 A366 A4 A42 A421 A8 A81 A811 A82 A822 A83 A831 A85 A852)
A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.
- IT Plan (To: A2 A22 A221 A25 A254 A255 A26 A264 A265 A31 A314 A366 A4 A41 A411 A42 A421 A43 A431 A44 A441 A45 A451 A5 A51 A511 A52 A521 A53 A531 A6 A61 A611 A62 A621 A63 A631 A64 A641 A65 A651 A66 A661 A67 A671 A7 A72 A723 A725 A73 A731 A737 A74 A741 A742 A745 A75 A752 A76 A763 A764 A8 A81 A813 A84 A842 A844)
The set of approved projects and associated schedule, operating plan, service level management commitments, and resource allocation commitments and adjustments for a defined fiscal or planning cycle.
- Portfolio Decision and Resource Allocation (To: A35 A352 A353 A366 A813)
An allotment or apportionment of financial and other resources (possibly from both the business and IT) to develop or refine the product vision and product life cycle definition and

plan or for any project proposal not related to a specific product. The financial allotment includes consideration of both capital and expense funds.

- Portfolio Management Activity Data (To: A368)
Performance and quality data regarding activities performed in managing the IT portfolio.

[A366] Conduct IT Portfolio Review

Description

The IT Portfolio Review identifies any strategic imperatives based on the business strategy and priorities, checks project priorities, and evaluates portfolio balance and alignment. The Portfolio Review determines corrections to the mix of projects and in adjustments to the portfolio gating mechanism, to better maximize the portfolio and to reflect the desired balance and alignment.

Controls

- IT Portfolio Categories (From: A363)
Key project and asset characteristics and parameters that are used to ensure strategic alignment with business priorities and to manage risk through diversity of investments.
- Portfolio Management Framework (From: A361)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing the IT portfolio.
- Business Strategy
The business strategy stated in terms of strategic intent, roadmap, drivers, objectives and policies.
- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.

Inputs

- IT Portfolio (From: A3 A36 A365)
A central repository containing all the IT resources and assets, projects, and services controlled and managed by the IT organization, departments, and functions.
- IT Plan (From: A3 A36 A365)
The set of approved projects and associated schedule, operating plan, service level management commitments, and resource allocation commitments and adjustments for a defined fiscal or planning cycle.
- Portfolio Decision and Resource Allocation (From: A36 A365)
An allotment or apportionment of financial and other resources (possibly from both the business and IT) to develop or refine the product vision and product life cycle 16 definition and plan or for any project proposal not related to a specific product. The financial allotment includes consideration of both capital and expense funds.
- Project and Service Inventory (From: A362)
The itemized record of projects and services for which IT resources are being consumed or are being proposed.

- Program and Project Reports (From: A37)
The body of information ranging from formal, regular and summarized, through informal, ad hoc, and detailed about any aspect of program and project status, and plans. It is available to any process with a need to know.
- Service Achievement Reports (From: A24 A244)
One or more reports about how well the service levels have been achieved and which compare IT's actual service level results achieved against the service level standards and any specific service level targets negotiated with customers. The reports can include details of service impacts – both directly measured and an assessment of business impact. Some sections will be for customer distribution and others can be for service provider receipt only.
- IT Financial Reports (From: A8 A81 A813 A814 A815)
All reports on financial data of IT for different stakeholders. Covers a wide range of reports from outlining projected costs through after-the-fact financial analyses.
- IT Portfolio Performance Report (From: A36 A367)
A management report describing the actual results of IT portfolio management activities in terms of value realized, balance achieved, and degree of strategic alignment.

Outputs

- IT Portfolio Review Results (To: A365 A367)
The level of performance achieved to-date of the IT portfolio against target and planned adjustments necessary to close any performance shortfalls or to exploit performance opportunities.
- Portfolio Management Activity Data (To: A368)
Performance and quality data regarding activities performed in managing the IT portfolio.

[A367] Communicate IT Business Value and IT Portfolio Performance

Description

This activity communicates the results of the IT Portfolio Review by reporting actual performance achieved against the portfolio targets, and by demonstrating IT business value realized.

The reports produced are a key element in aligning business and IT goals and objectives, as well as in determining the effectiveness of the IT Management System and IT strategies.

Controls

- IT Portfolio Categories (From: A363)
Key project and asset characteristics and parameters that are used to ensure strategic alignment with business priorities and to manage risk through diversity of investments.
- Portfolio Management Framework (From: A361)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing the IT portfolio.

Inputs

- IT Portfolio Review Results (From: A366)
The level of performance achieved to-date of the IT portfolio against target and planned adjustments necessary to close any performance shortfalls or to exploit performance opportunities.
- Business Metrics
Metrics (measurements, key performance indicators) on business performance. They are provided by the business whether or not the underlying data is managed by IT solutions.

Outputs

- IT Business Value Report
The contribution to the business from an information technology investment, usually expressed in economic terms.
- Portfolio Management Activity Data (To: A368)
Performance and quality data regarding activities performed in managing the IT portfolio.
- IT Portfolio Performance Report (To: A31 A313 A316 A364 A365 A366)
A management report describing the actual results of IT portfolio management activities in terms of value realized, balance achieved, and degree of strategic alignment.

[A368] Evaluate Portfolio Management Performance

Description

This activity analyzes activity data from all the Portfolio Management activities for efficiency and effectiveness, identifies opportunities for improvement, and recommends changes to the IT Portfolio Management Framework to enhance overall performance.

The evaluation of process performance identifies areas that need improvement, such as the foundation and interfaces of the process, activity definitions, key performance metrics, the state of supporting automation, as well as the roles and responsibilities and skills required. Insights and lessons learned from direct observation and data collected on process performance are the basis for improvement recommendations.

Controls

- Portfolio Management Framework (From: A361)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing the IT portfolio.

Inputs

- Portfolio Management Activity Data (From: A362 A363 A364 A365 A366 A367)
Performance and quality data regarding activities performed in managing the IT portfolio.

Outputs

- Portfolio Management Evaluation (To: A361)
The effectiveness and efficiency of the process activities and practices performed in managing the IT portfolio.

[A37] Program and Project Management

Purpose

The purpose of Program and Project Management is to plan and oversee programs and projects in support of their objectives.

The definition of a project is a team-based effort to meet specific objectives within a defined period of time.

The definition of a program is a long-term endeavor undertaken to implement a strategy or mission to meet business or organizational goals. A program is realized through multiple projects and ongoing activity.

Outcomes

As a result of successful implementation of this process:

- Projects are completed by the committed target date and within the allocated budget
- Stakeholder value is maximized through continuous evolution with stakeholders of project parameters (scope, budget, time lines, quality) as necessary
- 's business environment is reduced through precisely defined projects with clearly identified and managed risks
- Programs controlling multiple projects achieve maximization of value through coordination of trade-offs between requirements and solution space, and of incremental project completion and delivery
- Productivity is increased by a clear definition of roles, responsibilities, and deliverables, which result in faster startup through the use of knowledge management, less rework, and more productive time available to the project
- Project resource commitments are clearly separated from operational workload demands
- Customer and project teams form more quickly and use common terminology, facilitated by clearer communication
 - Customer satisfaction increases through visibility of the project plans, schedule, and actual performance against the project objectives

Scope

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 long-term, 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 is more likely to affect the bottom line of a business.

The same activities apply to both Program and Project Management, but with differing scope and time scales. Activities within the Program and Project Management process can be classified into four basic groups:

1. Defining and initiating
2. Planning
3. Executing, monitoring and controlling
4. Closing

A project usually consists of a series of phases, known as the project life cycle, and these groups of process activities can be applied to each phase individually or to a set of multiple phases. Therefore, these groups do not necessarily correspond to the phases of the project life cycle. For example, in a waterfall project, executing and controlling activities can be completed in the design phase of a project, alongside or followed by planning activities for the development phase.²¹

The activities described represent a broad model for Project Management activities, which is largely applicable to both projects and programs alike. A program is realized through multiple projects and ongoing activity.

Includes

- ◆ Identifying program and project goals
- ◆ Establishing clear and achievable objectives
- ◆ Balancing the competing demands for quality, scope, time, cost factors and resources
- ◆ Creating project plans
- ◆ Program and project status reporting to stakeholders
- ◆ Reconciling the specifications, plans, and approach to the different concerns and expectations of various stakeholders
- ◆ Running joint projects with any external agent (such as business, customers, suppliers):
 - Such projects might need to establish agreed standards and conventions
 - Alternatively, in the case of multi-supplier projects, there can be reporting responsibilities to the prime contractor while in-house practices apply within each contractor's scope

Excludes

- ◆ Performance and delivery activities (many process categories carry out this work)
- ◆ Promotion of the end result to production (Deployment Management, usually within a program or project context)

Controls

- Compliance Plans and Controls (From: A7 A71 A714)

The authoritative and comprehensive statement of:

- The items for which compliance is required
- The means (policies, data specifications, procedures, techniques, tools) to achieve compliance

21. IBM WWPMM Concepts.

- The definition of required compliance metrics and reports by which conformance will be able to be demonstrated for required scrutiny

It will be the major vehicle for communications and guidance on compliance efforts.

- IT Strategy (From: A3 A31 A315)

A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.

- IT Management Ecosystem (From: A1)

To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.

Inputs

- Program Charter (From: A36 A365)

A document issued by or created on behalf of the sponsor to describe the program's objectives. It provides the program manager with the authority to apply organizational resources to set up and run program activities.

- Project Charter (From: A3 A324 A354 A36 A365)

A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.

- Risk Assessment and Mitigation Plans (From: A34)

The recommendations as to the acceptability or otherwise of the risk factors of any undertaking (such as project, external development) and the risk limitation measures selected to reduce the impact of unacceptable risk occurrence.

- Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)

The collective overall information on both the development plan for the solution and the content of the solution as it progresses from concept to reality.

- Plans: Sets of committed solution phases, activities, tasks and milestones together with timeframe.
- Commitments: Sets of requirements, designs and other deliverables, such as test cases.

- Business Project Management Framework

The implementation within the parent business of a project management framework. This will usually provide most, if not all, of the framework for managing IT projects.

Outputs

- Program Plan (To: A34 A344 A373 A374 A375 A376 A377 A378)

The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:

- The structure of the set of projects which constitute the program
- The measurements and reports by which the program will be managed
- The program's governance and communication plans

- Project Plan (To: A265 A34 A343 A344 A372 A375 A376 A377 A4 A41 A412 A5 A51 A514 A52 A522 A53 A532)

The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.

- Program and Project Reports (To: A13 A131 A324 A34 A345 A346 A36 A365 A366 A716)
 The body of information ranging from formal, regular and summarized, through informal, ad hoc, and detailed about any aspect of program and project status, and plans. It is available to any process with a need to know.

Activities

This process is composed of these activities:

- A371 Establish Program and Project Management Framework
- A372 Manage Program
- A373 Define and Initiate Project
- A374 Plan Project
- A375 Track and Report Project
- A376 Control Project
- A377 Close Project
- A378 Evaluate Program and Project Management Performance

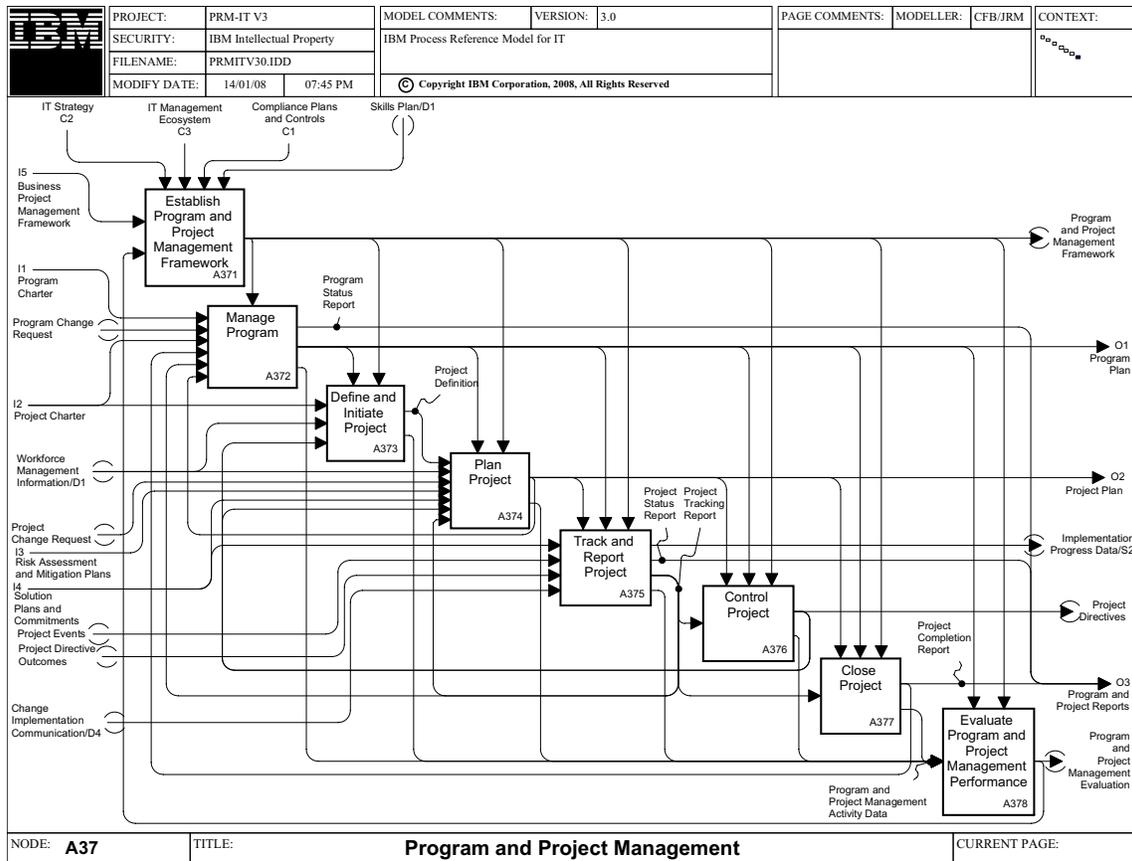


Figure 8. A37 Program and Project Management

[A371] Establish Program and Project Management Framework

Description

Based on the business and IT strategy, architectural models, guidelines, and a framework for project management have to be developed. The tasks in this activity include:

- Understanding the requirements and specifications for project management
- Defining the strategy for project management tools and capabilities, and how they should be sourced. For example, should they be developed in-house or rely more on vendor capabilities
- Defining evaluation criteria for project management solutions and services
- Establishing the framework for project management by defining and implementing practices and systems that support process activities
- Determining skill requirements for the staff and assigning staff based on these systems

Finally, the structure and process of project management including escalation responsibilities have to be communicated to the process users.

This activity can be triggered by any decision for joint program or project working with any external party in order that a clear, unambiguous and agreed framework is established.

The establishment of the process framework also includes the continuous improvement of project management; that is, the consideration of the Project Management process evaluation and the implementation of recommended improvement actions.

Controls

- IT Strategy (From: A3 A31 A315)
A consolidated statement of IT initiatives. Includes a summary of changes to IT capabilities and a summary of each strategic IT initiative. Also includes a statement of planned and required changes to the IT Portfolio and IT Plan. The IT Sourcing Strategy would be included.
- IT Management Ecosystem (From: A1)
To paraphrase a dictionary definition: the complex of management system elements, their physical implementation, and all their interrelationships in the unit of space that is the domain of the IT function. Its fundamental purpose is to provide an environment that is supportive of the carrying out of all of the IT activities defined elsewhere in this model.
- Compliance Plans and Controls (From: A7 A71 A714)
The authoritative and comprehensive statement of:
 - The items for which compliance is required
 - The means (policies, data specifications, procedures, techniques, tools) to achieve compliance
 - The definition of required compliance metrics and reports by which conformance will be able to be demonstrated for required scrutinyIt will be the major vehicle for communications and guidance on compliance efforts.
- Skills Plan (From: A84 A844)
Projection of skills needed, including indicating where training is required. For skills identified to be developed through external means, this represents a requisition to procurement.

Inputs

- Business Project Management Framework
The implementation within the parent business of a project management framework. This will usually provide most, if not all, of the framework for managing IT projects.
- Program and Project Management Evaluation (From: A378)
An assessment of the overall performance of the process against the targets set in the process framework and an identification of possible process improvement areas.

Outputs

- Program and Project Management Framework (To: A372 A373 A374 A375 A376 A377 A378 A411)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing projects and programs.

[A372] Manage Program

Description

The direction, supervision and control of all aspects of the life cycle of a program of inter-connected projects. This activity focuses on the coordination and prioritization across projects, departments, and entities to insure that resource contention is managed from a global focus, while leaving individual project control to the other activities within this process. Some aspects which distinguish program management include:

- Manage Steering Committee – Projects typically have simple management structures. Programs, on the other hand, involve a more complex governance primarily because programs are typically close to the heartbeat of the business. For this reason, a program will have something like a steering committee that involves executives from various organizations. Keeping the steering committee informed, staffed, and participating is a major aspect of program management.
- Promote Program Environment – A program manager must often work both inside and outside of his domain in order to remove barriers that may endanger the program's success. This involves identifying issues and obtaining agreement with other executives and teams to remove those barriers and can involve working outside the company.
- Plan and Coordinate Program Projects – This is probably the closest to project management, since it is the chopping up of a program into parts and managing those parts. It is different, however, in that those projects often do not have a similar management chain, and those projects might not have a definite end.
- Obtain and Manage Program Resources – Financial management of programs might have to conform to specific regulatory policies. There is typically more money (and other resources) involved in a program, and they often involve many other types of expenditures than those faced by projects. CFOs are typically very involved in the financial management of programs.
- Review Program Progress – This is also somewhat similar to project management, except that projects must constantly be evaluated concerning how well they further the goals of the program. This involves review of those projects, aligning projects with program goals, and adjusting or removing projects that no longer meet the program manager's needs. Some work that has been going on for a long time might be ended because specific goals have been reached, such as when the program is trying to achieve a culture change.

Controls

- Program and Project Management Framework (From: A371)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing projects and programs.

Inputs

- Program Charter (From: A36 A365)
A document issued by or created on behalf of the sponsor to describe the program's objectives. It provides the program manager with the authority to apply organizational resources to set up and run program activities.
- Program Change Request
A request to modify or adjust any aspect of an established program. Requests are usually processed under a requirements or change control procedure in order to ensure appropriate and auditable responses.
- Project Charter (From: A3 A324 A354 A36 A365)
A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.
- Project Completion Report (From: A377)
Communication between the delivery organization and the sponsor indicating that the work committed within the project is completed. Provides evidence that all terms of the agreement have been satisfied and all work has been completed.
- Project Tracking Report (From: A375)
Detailed project management information which indicates the status, in terms of schedule, quality, risks and costs, of the project against plan.
- Project Plan (From: A3 A37 A374)
The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.

Outputs

- Program Status Report
A snapshot of the progress, status, and issues relating to an established program.
- Program Plan (To: A34 A344 A373 A374 A375 A376 A377 A378)
The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:
 - The structure of the set of projects which constitute the program
 - The measurements and reports by which the program will be managed
 - The program's governance and communication plans
- Program and Project Management Activity Data (To: A378)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A373] Define and Initiate Project

Description

The activities that are used to understand objectives and scope, shape the target solution (which might be larger than the current project) and the project to a level that allows planning activities.

Agreement is reached on the objectives of the project, the scope of the project is established, the initial organization is defined, responsibilities are assigned, and the assessment of situational factors is documented.

Controls

- Program Plan (From: A37 A372)

The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:

- The structure of the set of projects which constitute the program
- The measurements and reports by which the program will be managed
- The program's governance and communication plans

- Program and Project Management Framework (From: A371)

The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing projects and programs.

Inputs

- Project Charter (From: A3 A324 A354 A36 A365)

A document issued by or created on behalf of the sponsor to describe the project's objectives. It provides the project manager with the authority to apply organizational resources to project activities.

- Workforce Management Information (From: A84 A842 A843 A844)

Profiles of current managed workforce including performance reviews, skills, training and compensation.

- Project Directives (From: A376)

Instructions or changes made to bring future performance of the project into line with the plans and procedures.

Outputs

- Project Definition (To: A374)

The document that describes the shape of the project and includes:

- The objectives and scope
- The stakeholders and proposed organization with responsibilities
- The major risks associated with the project

- Program and Project Management Activity Data (To: A378)

Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A374] Plan Project

Description

Detailed work and risk plans are drawn up, the organization is confirmed, and staff assignments are made. No significant amount of resource can be expended on the project (that is, execution does not begin) until clear plans are in place and authorization to proceed has been received at the end of this activity.

Controls

- Program Plan (From: A37 A372)
The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:
 - The structure of the set of projects which constitute the program
 - The measurements and reports by which the program will be managed
 - The program's governance and communication plans
- Program and Project Management Framework (From: A371)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing projects and programs.

Inputs

- Project Definition (From: A373)
The document that describes the shape of the project and includes:
 - The objectives and scope
 - The stakeholders and proposed organization with responsibilities
 - The major risks associated with the project
- Workforce Management Information (From: A84 A842 A843 A844)
Profiles of current managed workforce including performance reviews, skills, training and compensation.
- Project Change Request
A request to change some document or aspect of the project that has been placed under change control. An accepted change request may result in one or more change orders.
- Risk Assessment and Mitigation Plans (From: A34)
The recommendations as to the acceptability or otherwise of the risk factors of any undertaking (such as project, external development) and the risk limitation measures selected to reduce the impact of unacceptable risk occurrence.
- Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)
The collective overall information on both the development plan for the solution and the content of the solution as it progresses from concept to reality.
 - Plans: Sets of committed solution phases, activities, tasks and milestones together with timeframe.
 - Commitments: Sets of requirements, designs and other deliverables, such as test cases.
- Project Directives (From: A376)
Instructions or changes made to bring future performance of the project into line with the plans and procedures.

- Project Tracking Report (From: A375)
Detailed project management information which indicates the status, in terms of schedule, quality, risks and costs, of the project against plan.

Outputs

- Project Plan (To: A265 A34 A343 A344 A372 A375 A376 A377 A4 A41 A412 A5 A51 A514 A52 A522 A53 A532)
The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.
- Program and Project Management Activity Data (To: A378)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A375] Track and Report Project

Description

This activity collects and disseminates information about the current state of projects and sub-projects, and their performance against plans and future projections of achievement or risk.

Project reports summarize status and any issues.

Controls

- Project Plan (From: A3 A37 A374)
The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.
- Program Plan (From: A37 A372)
The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:
 - The structure of the set of projects which constitute the program
 - The measurements and reports by which the program will be managed
 - The program's governance and communication plans
- Program and Project Management Framework (From: A371)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing projects and programs.

Inputs

- Solution Plans and Commitments (From: A4 A41 A42 A422 A425 A43 A432 A44 A442 A45 A452)
The collective overall information on both the development plan for the solution and the content of the solution as it progresses from concept to reality.
 - Plans: Sets of committed solution phases, activities, tasks and milestones together with timeframe.
 - Commitments: Sets of requirements, designs and other deliverables, such as test cases.
- Project Events (From: A41 A42 A43 A44 A45)
s opinion, are important to support the management of the project.

- **Project Directive Outcomes**
The outcomes of actions taken in response to instructions or changes from project management made to bring future performance of the project into line with the plans and procedures.
- **Change Implementation Communication (From: A51 A516)**
Information used to coordinate and implement a change. It can reflect either or both the:
 - Status of the overall change as a result of carrying out previous instructions
 - Instructions for the next stages of implementationThis dual nature is required to reflect incremental progress towards completion of a multi-stage implementation, especially when the outcome of one or more steps did not meet expectations in all respects.

Outputs

- **Implementation Progress Data (To: A51 A516 A537)**
The record of each incremental activity performed as part of the implementation of a change or release.
- **Project Status Report**
A report, prepared to schedule or request, by the top-level project manager for the line of business management. It documents the status, progress and accomplishments, and forecasts for the end of the project. General categories include:
 - Health status summary
 - Resources
 - Earned value indicators
 - Accomplishments
 - Quality, issue, risk, change, and compliance incident summaries
- **Project Tracking Report (To: A372 A374 A376 A377)**
Detailed project management information which indicates the status, in terms of schedule, quality, risks and costs, of the project against plan.
- **Program and Project Management Activity Data (To: A378)**
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A376] Control Project

Description

This activity invokes appropriate governance, disciplines, techniques, and actions to ensure the success of the project.

Approved standard project management methods are applied and executed to manage to the project plan.

Controls

- Project Plan (From: A3 A37 A374)
The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.
- Program Plan (From: A37 A372)
The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:
 - The structure of the set of projects which constitute the program
 - The measurements and reports by which the program will be managed
 - The program's governance and communication plans
- Program and Project Management Framework (From: A371)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing projects and programs.

Inputs

- Project Tracking Report (From: A375)
Detailed project management information which indicates the status, in terms of schedule, quality, risks and costs, of the project against plan.

Outputs

- Project Directives (To: A373 A374)
Instructions or changes made to bring future performance of the project into line with the plans and procedures.
- Program and Project Management Activity Data (To: A378)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A377] Close Project

Description

This activity addresses the use of formal and consistent disciplines to end projects. The sponsors and stakeholders reach a consensus and agree that the project has run its course and can be ended.

A project completion report is produced to capture lessons learned.

Controls

- Project Plan (From: A3 A37 A374)
The set of the work plans, plus other plans including management plan, human resource plan, technical environment, project quality, communications management, and others.
- Program Plan (From: A37 A372)
The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:
 - The structure of the set of projects which constitute the program
 - The measurements and reports by which the program will be managed
 - The program's governance and communication plans
- Program and Project Management Framework (From: A371)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing projects and programs.

Inputs

- Project Tracking Report (From: A375)
Detailed project management information which indicates the status, in terms of schedule, quality, risks and costs, of the project against plan.

Outputs

- Project Completion Report (To: A372)
Communication between the delivery organization and the sponsor indicating that the work committed within the project is completed. Provides evidence that all terms of the agreement have been satisfied and all work has been completed.
- Program and Project Management Activity Data (To: A378)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

[A378] Evaluate Program and Project Management Performance

Description

The evaluation of process performance identifies areas that need improvement, such as the foundation and interfaces of the process, activity definitions, key performance metrics, the state of supporting automation, as well as the roles and responsibilities and skills required. Insights and lessons learned from direct observation and data collected on process performance are the basis for improvement recommendations.

Controls

- Program Plan (From: A37 A372)
The overall plan for the delivery of the program. It will not describe specific details of any individual part of the work, but will focus on aspects such as:
 - The structure of the set of projects which constitute the program
 - The measurements and reports by which the program will be managed
 - The program's governance and communication plans
- Program and Project Management Framework (From: A371)
The logical structure describing the strategic (vision, mission, value proposition), organizational (organizational mechanisms, roles, accountabilities), process (activities, work flows, inputs, outputs), and technology (software, hardware) practices for managing projects and programs.

Inputs

- Program and Project Management Activity Data (From: A372 A373 A374 A375 A376 A377)
Data resulting from all work carried out by each process activity. Examples would be volumes, timings, resources used, success and error rates, interfaces invoked, rework, customer feedback, priorities.

Outputs

- Program and Project Management Evaluation (To: A371)
An assessment of the overall performance of the process against the targets set in the process framework and an identification of possible process improvement areas.

PRM-IT A3 Node Tree

A3 – 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	Create and Maintain Architecture Models
A334	Define and Maintain Architecture Baselines and Roadmaps
A335	Promote Architecture Transition Initiatives
A336	Govern Architecture Usage
A337	Evaluate Architecture Management Performance
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	Product Management
A351	Establish Product Management Framework
A352	Formulate Product Concept
A353	Plan and Control Product Lifecycle
A354	Initiate and Oversee Product Realization
A355	Guide Product Transition and Operation
A356	Monitor and Assess Product Performance
A357	Evaluate Product Management Performance

A3 – DIRECTION	
A36	IT Portfolio Management
A361	Establish IT Portfolio Management Framework
A362	Inventory IT Projects and Services
A363	Create and Maintain IT Portfolio Categories
A364	Assess and Prioritize IT Portfolio
A365	Make IT Portfolio Decisions and Commitments
A366	Conduct IT Portfolio Review
A367	Communicate IT Business Value and IT Portfolio Performance
A368	Evaluate Portfolio Management Performance
A37	Program and Project Management
A371	Establish Program and Project Management Framework
A372	Manage Program
A373	Define and Initiate Project
A374	Plan Project
A375	Track and Report Project
A376	Control Project
A377	Close Project
A378	Evaluate Program and Project Management Performance

Figure 9. A3 Direction Node Tree