

An Introduction to the BOST Framework and Reference Models

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This edition published December 2014

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Abstract

This white paper introduces the *BOST Framework*, a component of the Informatica *Business Transformation Toolkit*. The *Business Transformation Toolkit* includes a formalized framework, best practices, and modeling tools for private sector businesses and public sector institutions.

The *Business Transformation Toolkit* has been in development since 1992 through the efforts of Art Caston, one of early pioneers and global leaders in Enterprise Architecture. Informatica has leveraged over two decades of lessons learned through real-world customer experiences to continue to enhance and expand the Enterprise Architecture practice and achieve compelling business results.

Business Transformation Services from Informatica Professional Services offers comprehensive model-based *Integrated Program Planning*. The services support business and IT planners in client organizations to identify strategic opportunities for business transformation, to define agile solutions for those opportunities, and to then establish and govern transformational programs that deliver real business results.

Informatica uses a unique framework of industry specific *Reference Models* and elements to deliver complex enterprise planning initiatives. This capability is transferred to clients through the Informatica *Business Transformation Toolkit* for those clients wishing to adopt the approach as a standard Enterprise Planning capability for future programs.

Introduction

The *BOST Framework* provides the superstructure for enterprise models, their elements, and relationships. BOST is an acronym representing four views; Business, Operations, Systems and Technology. Enterprise requirements flow downward through the four framework views, starting with the external market opportunities and stakeholder interests. The capabilities flow upward in response to these requirements, starting from the arrival of new technologies. The key determinant of business success is how well an enterprise can align their capabilities with the constantly changing requirements in all four views.

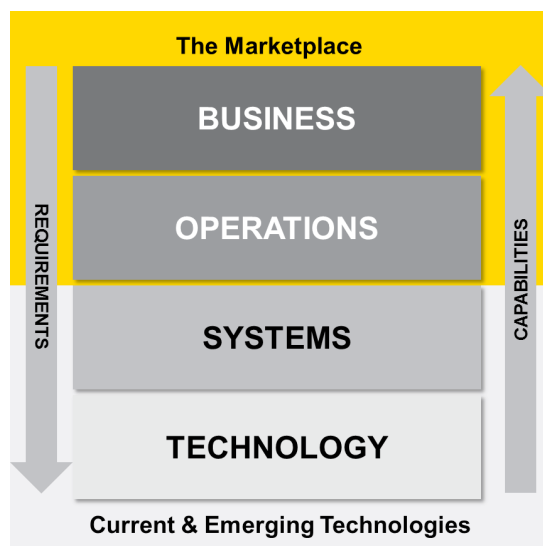


Figure 1. The BOST Framework

The *Reference Models* provide the basis for the identification of the complete set of enterprise capabilities based on the requirements of the business. It also incorporates the impact of new technology on the organization. New technology capabilities can affect the business in a significant fashion. For example, the arrival of the web as a network technology providing capabilities for interlinking systems and users for business collaboration through e-commerce, or the emergence of big data technologies to enable effective governance of large volumes and variety of data from sources such as social media and the internet-of-things.

The Business View

The Business View contains four inter-related Reference Models:

1. Market Model describes the relevant industry sector and classifies the types of segments, solutions, and providers.
2. Product Model defines classes of products and possible sales and service channels.
3. Enterprise Relationship Model identifies the possible types of partnerships affecting enterprise structure, in-sourcing, and out-sourcing options.
4. Enterprise Resource Model identifies the types of workers, classes of facilities, equipment, and supplies, and any other assets required by the business.

The Market Model

This reference model provides the taxonomy for market analysis. It begins by identifying the market sector and possible specialization in which the enterprise operates. Within that sector, the target markets are broken into Market Areas, and Market Segments. A set of needs are identified for these segments. These needs can be further qualified by defining various environments where they occur.

The next component of the Market Model specifies the types of Solutions available to meet these needs in these environments. For example, portable games, CD players, DVD players or mobile devices as solutions to providing access to entertainment. Finally, the types of Providers of these solutions are identified.

With this taxonomy of market components and the ability to cross-reference these components, it is possible to structure various types of strategic uses, which include:

- Structuring demographic analyses and needs/preferences assessments;
- Tracking and predicting the market acceptance cycle for various product solutions;
- Assessing competitive strategies and directions;
- Evaluating possible merger and acquisition candidates; and
- Developing or refining market-positioning strategies

The Product Model

This reference model describes classifications of Products for the enterprise. In the Market Reference Model, the Product classes and Solution types are related. The Product Model provides a top-down classification to organize product portfolios.

A second key element of the Product Model is the type of Channels that are possible considerations for selling and servicing the associated products. For example, for consumer products, possible types of channels include Retail stores, Web-based Shopping, Call Center, Mail Order, and Door-to-Door.

The Product Reference Model has numerous uses within the framework, including:

- Developing Product Portfolio Strategies and Plans;
- Developing Product and Channel Strategies and Plans;
- Assessing Product Assortment;
- Conducting Competitive Analyses;
- Evaluating M&A Candidates Products; and
- Structuring Organizational Accountabilities for Product Management

The Enterprise Relationship Model

This model provides a structure for describing partnering opportunities as well as obligations to shareholders and regulators. It identifies classes of Suppliers, External Channels, Associations, Governments and Regulatory Bodies, Stakeholders, and other types of external entities that require relationship management. This model, along with the Customers in the Market Segments of the Market Reference Model, defines the external relationships that must be addressed in the Operations View.

The Enterprise Relationship Model has the following uses within the framework:

- Identifying Partnering Opportunities and Candidates;
- Identifying Outsourcing Opportunities and Candidates;
- Defining Relationship Roles and Responsibilities; and
- Setting the Business Context for Operations Functions.

The Enterprise Resource Model

This model provides a structure for describing the assets that are required by the enterprise. These assets include human resources, described in terms of worker classes, and physical resources, described in terms of facilities and work center classes, equipment, and supplies.

The framework uses the Resource Model to link functions, organizations, systems, and technology to their allocated resources. Specific uses include:

- Allocating People and Physical Resources to Service Functions;
- Performing Service Function Cost Analyses;
- Linking People to Work Centers to Functions to Systems; and
- Facility and Work Center Structure for Reusable Technology Templates.

The Operations View

The Operations View has three important Reference Models that describe the essential capabilities required to operate in accordance with the Business View. The Service Function Model identifies the functional requirements, the Enterprise Information Model defines the information resources, and the Create/Use Matrix pulls together the end-to-end flow of information across the enterprise.

The Service Function Model

Functional Models are the central component of the Operations View of the framework. They provide a structured definition of all essential operations capabilities using a service-based approach.

These Service Functions are:

- Independent of organization;
- Independent of where work is performed or who performs it; and
- Independent of how the work is performed.

Functions are grouped or clustered using functional affinities starting with the major functions of the Enterprise. These major functions are decomposed into Service Functions.

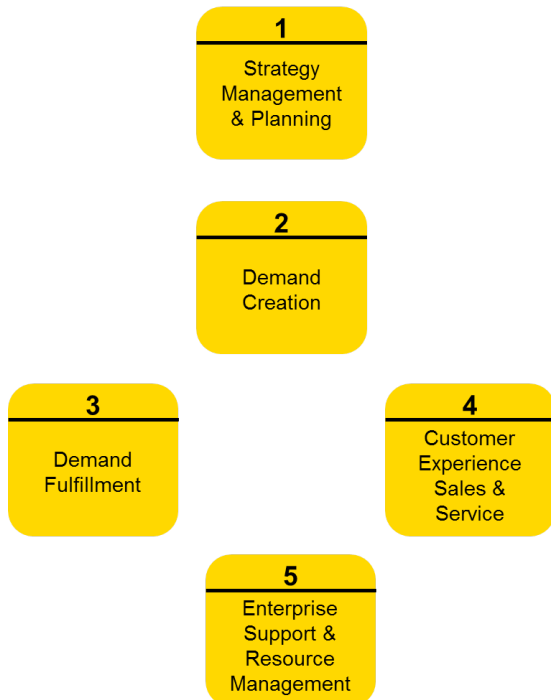


Figure 2. Five Major Functions for Retail Company

For example, Major Function [4] Customer Experience Sales and Service, consists of five Service Functions: [4.1] Channel Operations Management, [4.2] Sales Creation & Solution Support, [4.3] Customer Sales & Order Management, [4.4] Customer Service Order Fulfillment, and [4.5] Customer Retention. The other major functions can be broken down in a similar manner.

Each Function is defined as a Service Producing Entity – not as a step in a process. Service Functions describe “what” capabilities are required not “how” they are performed. There is only one instance of a particular Service Function for the entire enterprise regardless of how often that function exists throughout the organization or across geographic locations.

Service Functions are created using Service Function Models. These models provide for the addition of External Entities, representing other enterprises, customers, or institutions with which the enterprise interacts. Service Functions and External Entities are linked by Service Flows.

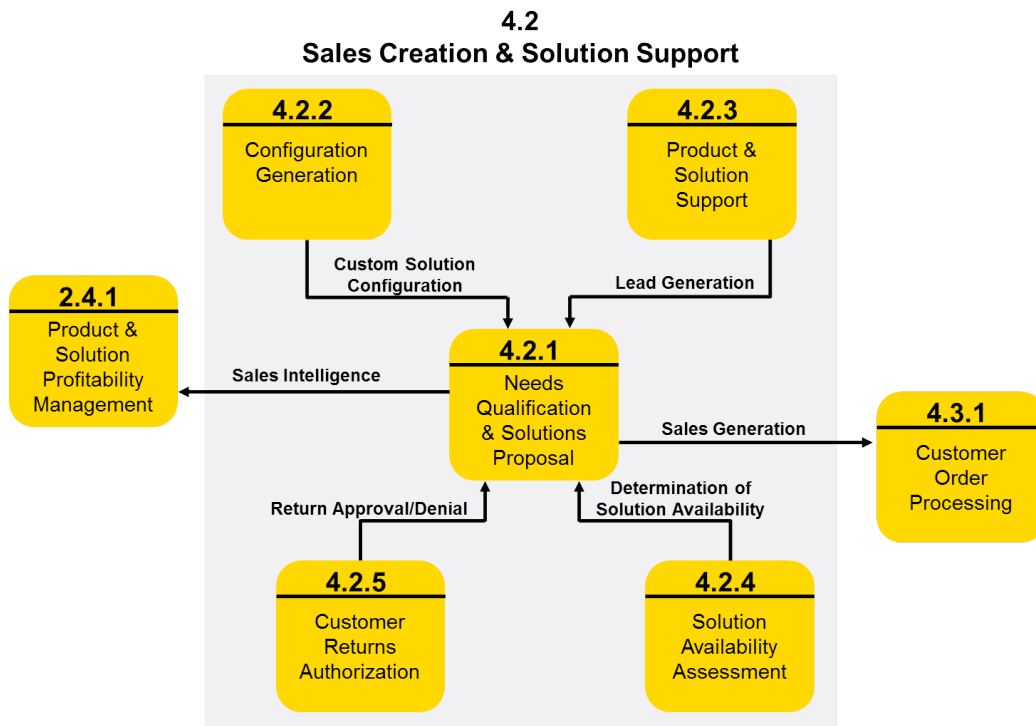


Figure 3. Service Flow model for Customer Experience – Sales & Service

Service Functions provide and receive services to/from other Service Functions as well as external entities. All Services are unique to only one function, resulting in minimal ambiguity and no duplication.

These Service Functions can then be decomposed into Sub-functions where appropriate. Decomposition continues until Service Functions can no longer represent the capabilities; that is, when “what” becomes “how”. The Operations Reference Model only defines the “what”. At their lowest level, Service Functions provide a set of Basic Service Functions.

For example, the Service Function 4.2 Sales Creation & Solution Support is decomposed into five Sub-functions: [4.2.1] Needs Qualification & Solution Support, [4.2.2] Configuration Generation, [4.2.3] Product & Solution Support, [4.2.4] Solution Availability Assessment, and [4.2.5] Customer Returns Authorization. These are all Basic Service Functions.

Later, Process Models are created for selected Basic Service Functions during Target Architecture Development. For each Basic Service Function, information flows are added to link functions to the information subjects that they both create and use.

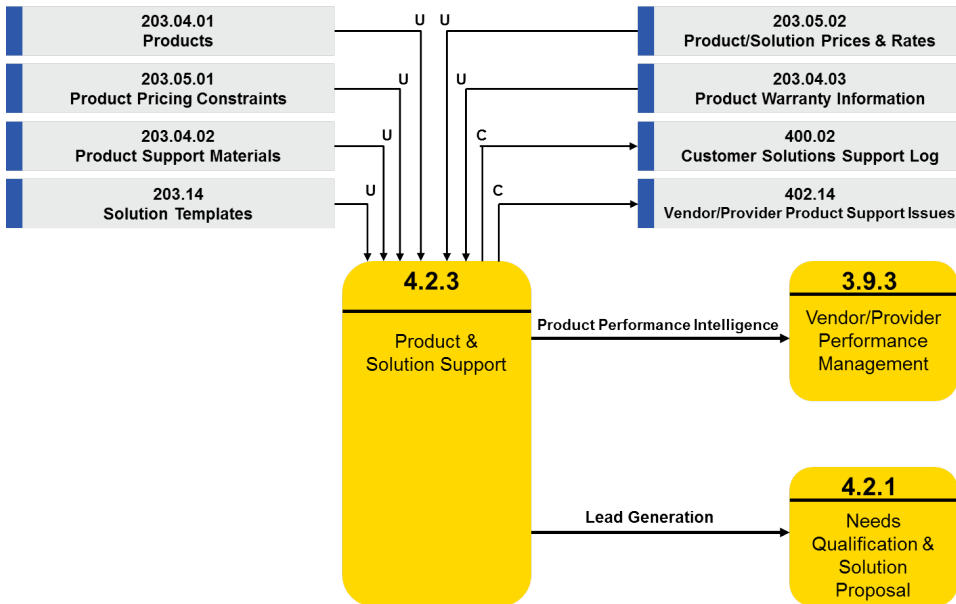


Figure 4. Example of a Basic Service Function

Service Function Reference Models have many uses, including:

- Generating the Create/Use Matrix for use in identifying Systems Families and Reference Systems;
- Defining Service-Oriented Performance Metrics;
- Assessing Operations Performance and uncovering Best Practices;
- Providing Structure and Context for Process Modeling, an ideal starting point for introducing BPM;
- Providing Clear Delineation for Assigning Organizational Roles and Responsibilities;
- Conducting Structured Analysis through Resource Allocations; and
- Evaluating Merger and Acquisition candidates through use as a Capabilities Assessment framework.

The Enterprise Information Model

The Enterprise Information Reference Model is the second model in the Operations View. It is used to define and cluster information subjects that are required to operate the Business. The Information Model starts by identifying major Information Domains based on information affinities.

Each domain is decomposed into its information subjects. This process continues for three or four levels until the definition of subjects is about the same granularity as the Service Functions.

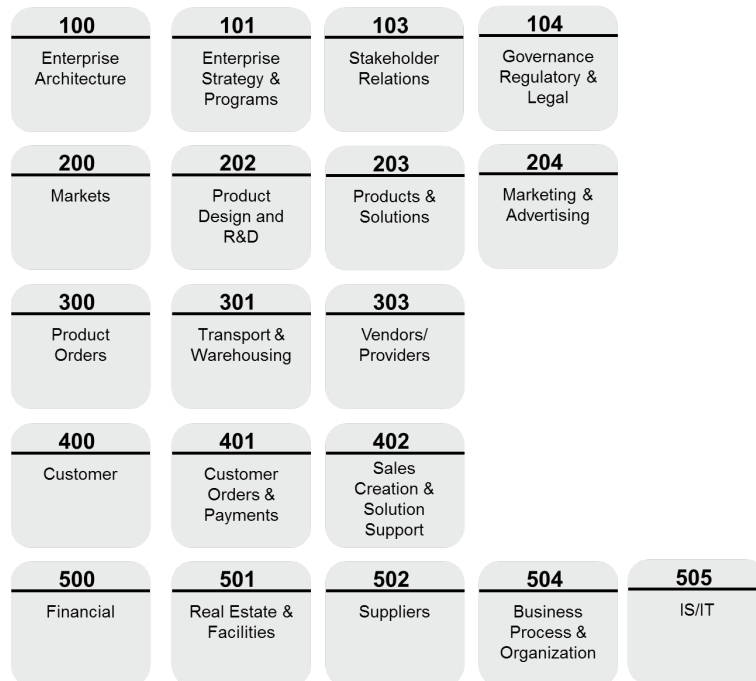


Figure 5. Enterprise Information Model

These basic Information Subjects are then used on the Basic Service Function Model diagrams to graphically link the creation and use relationships between functions and information.

The Create/Use Matrix

The framework provides powerful analytical knowledge with matrix generation features using information contained on diagrams and stored in the repository. The Create/Use matrix is a good example of this analytical power. Each Basic Service Function contains the graphical connection of functions to the information subjects using connectors that indicate a “create” or “use” relationship.

From these connections, the framework automatically generates the Create/Use Matrix, listing all Basic Service Functions in the rows and all Basic Information Subjects in the columns. It places a “C” or “U” in the cells corresponding to the connection between the Service Function and the Information Subject.

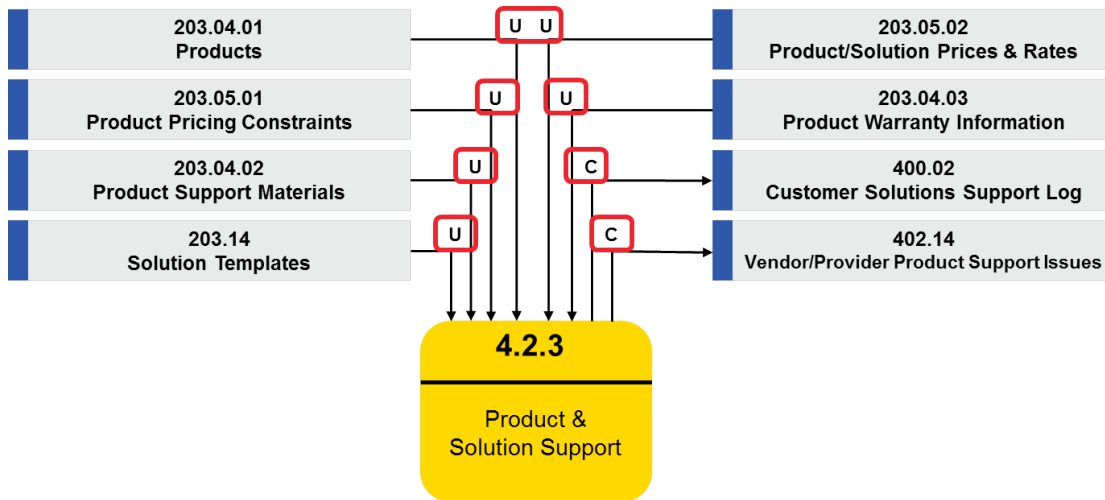


Figure 6. Partial Create Use Matrix for Customer Experience & Sales Support

The Create/Use Matrix is the critical link between the Operations Reference Models and the Systems Reference Models. The framework sorts the columns of the matrix by sequencing create relationships. This provides the basis for identifying clusters of functions and information that have a high affinity. Systems Families are discovered from this analysis. They represent the automation potential for a unique group of Basic Service Functions and Basic Information Subjects.

The Systems View

The Systems View contains three important Reference Models used to describe the capabilities for automating the information processing, management, and exchange in support of the Operations Capabilities described in the Operations Reference Models.

The three models are the Systems Families, the Spider Diagrams that show information exchange between Families, and the Reference Systems that define the applications within Systems Families.

Systems Families

The Systems Families are extracted from the Create/Use Matrix. They form the top-level structure for classifying systems. Figure 8 shows the 28 Systems Families for a Retail Enterprise grouped by the Major Service Functions.

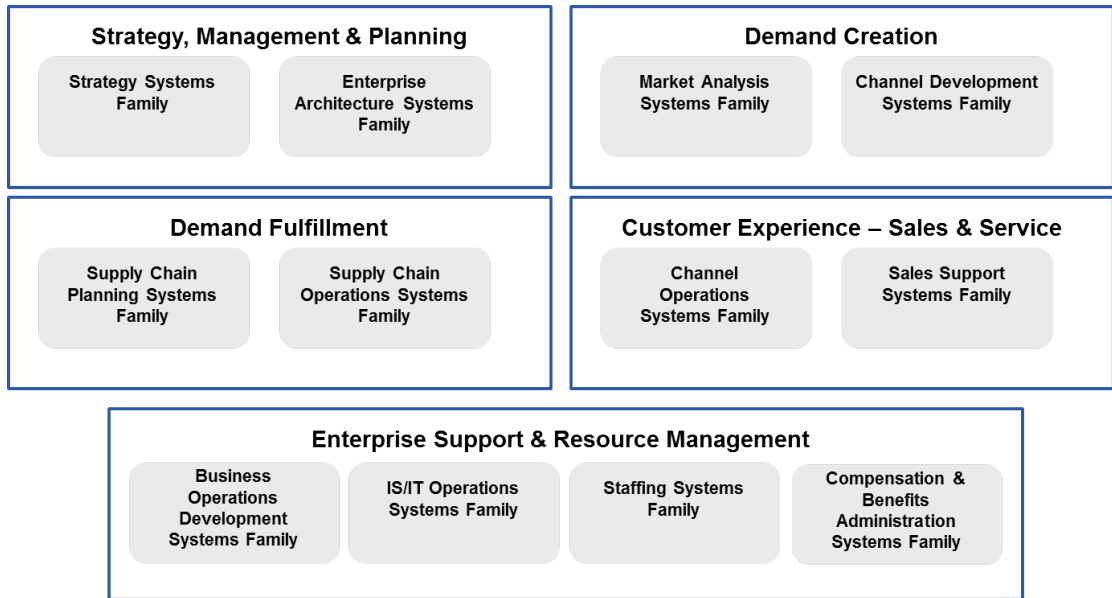


Figure 7. System Families for Retail Enterprise

Systems Families provide the basis for developing Reference Systems Family Spider Diagrams that show the information exchanges between Systems Families and the Reference Systems Models that define the individual applications that exist with the Systems Family.

Systems Family Spider Diagrams

The Systems Families contain all of the “create” relationships for their set of functions and information. However, many “use” relationships fall outside of the System Families on the Create/Use Matrix. These relationships translate into opportunities to exchange information between Systems Families.

The Systems Family Spider Diagram captures these information exchange opportunities between Systems Families. It places the Systems Family in the center and shows all of the in-bound and out-bound information exchanges with other System Families around the periphery.

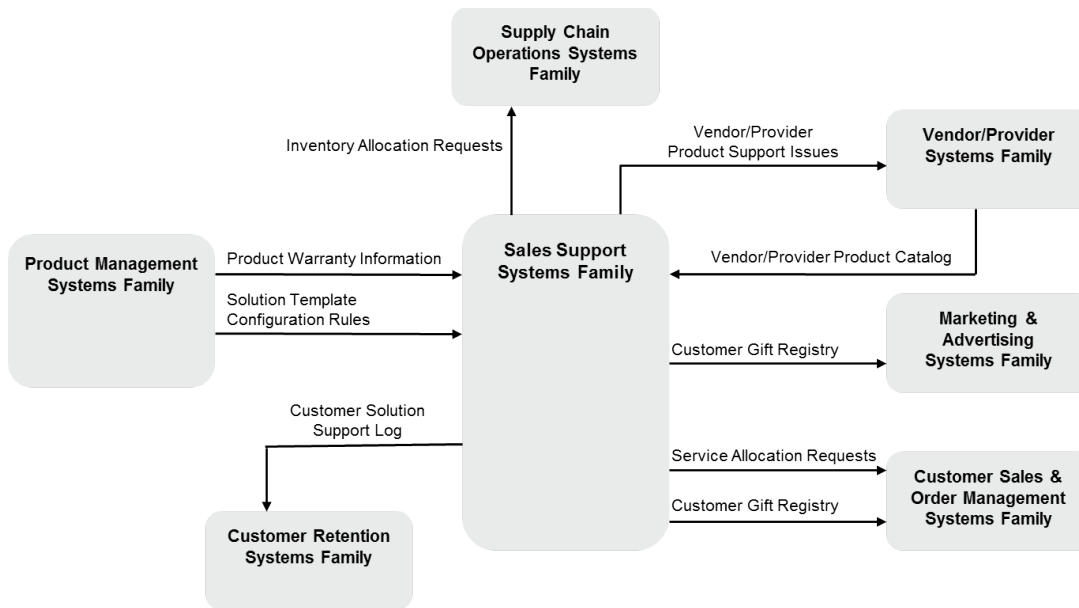


Figure 8. Spider Diagram for Sales Support System Family

These System Spider Diagrams have two important uses within the framework:

- Representing the information exchanges between Systems Families as derived from the information exchanges between Service Functions; and
- Providing the input for developing Information Exchange Architectures between Systems Families in the Target Systems Architecture.

Reference Systems

The second part of developing Reference Models for the Systems View is to identify specific Reference Systems within each Systems Family. These Reference Systems are distinct systems capabilities required to support the automation of the associated Basic Service Functions supported by that Systems Family. Since each Systems Family has an assigned and independent set of Information Subjects, these Reference Systems constitute the required set of Systems of Record for creating and maintaining these Information Subjects.

Like service functions, Reference Systems are generic. There is only one for each distinct System of Record regardless of how many different instances of that system exist in the current inventory.

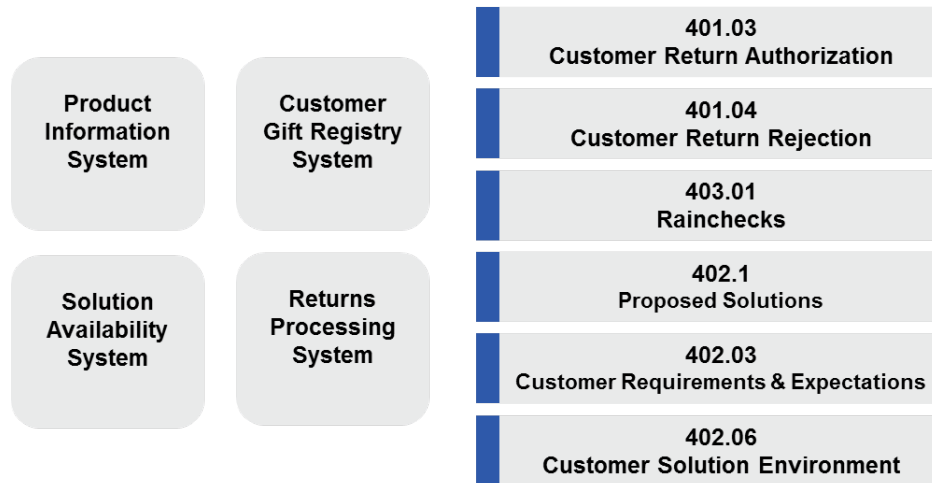


Figure 9. Reference Systems within the Sales Support System Family

Reference Systems have the following uses in the framework:

- Providing the taxonomy for further classification of current systems within Systems Families;
- Providing the basis for determining where diversity is required and justified, based on different requirements (goal is to eliminate nonessential diversity from current systems);
- Providing the basis for determining the distribution or instance strategy for each target system, based on operations and systems requirements for replication and placement of information within the physical business operations; and
- Providing the foundation for Target Systems development to reflect this diversity and distribution, and creating the resulting information exchange architectures and migration strategies.

The Technology View

The *Technology View* contains two *Reference Models*. The Technology Services Reference Model is used to identify and classify the complete set of technology capabilities within the IT infrastructure, represented as services. The Technology Devices Reference Model is used to define the various types of physical and logical platforms that house these Technology Services.

Technology Services Reference Model

The Technology Services Reference Model defines the relevant technology capabilities that the IT Infrastructure intends to provide. Specific technologies are selected and defined as standards or target architectures for implementation from the base.

The Technology Services Reference Model is organized into categories that are layered in support of one another.

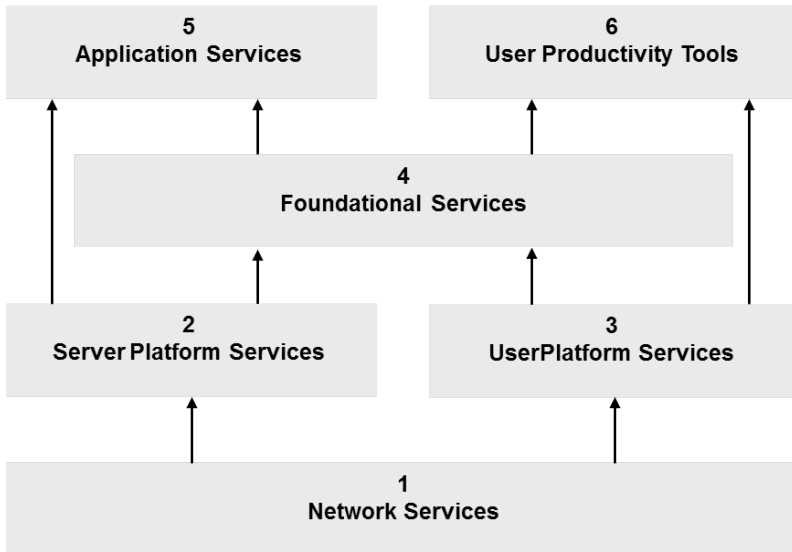


Figure 10. Technology Services Reference Model Structure

In the Technology Services Reference Model, connections to higher views in the framework occur through two service points – support for applications and support for people. These are categorized as [5] Application Services and [6] User Productivity Tools. Underlying these two categories supports both of them – [4] Foundational Services. These three categories define the set of Technology Services available to Systems and Users.

Underlying this set of services are additional Technology Services providing capabilities that are more oriented to the types of platforms and networks within the IT Infrastructure. [2] Server Platform Services and [3] User Platform Services define the underlying services needed to support [5] Application Services, [6] User Productivity Tools and [4] Foundational Services.

These categories are, in turn, supported by [1] Network Services, which include Local Area Networks (LAN), Metropolitan Area Networks (MAN) and an Enterprise Wide Area Network (WAN). This organization of the reference model allows the architect to take a service view of technology from top to bottom. Technology Services are defined within each category.

4
Foundational Services

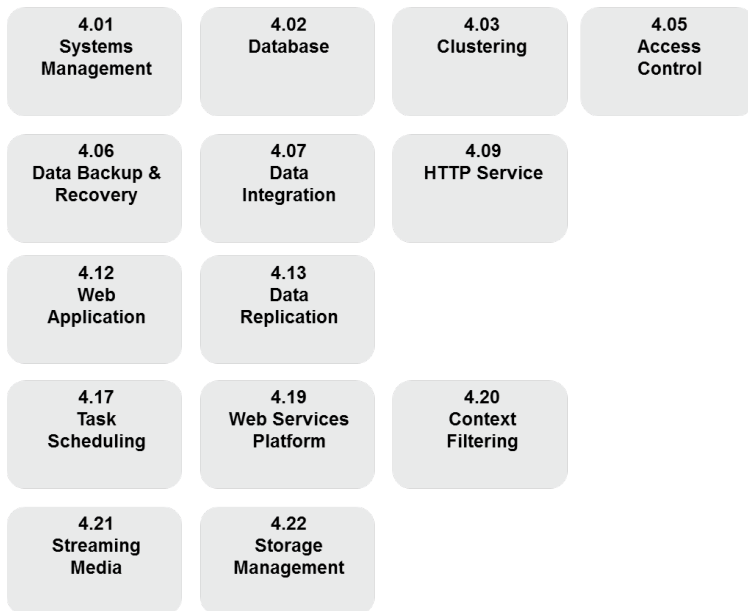


Figure 11. Technology Services within Foundation Services

Hierarchical decomposition structures are clusters of many services. The lowest level services are known as Basic Technology Services.

4.01
Systems Management

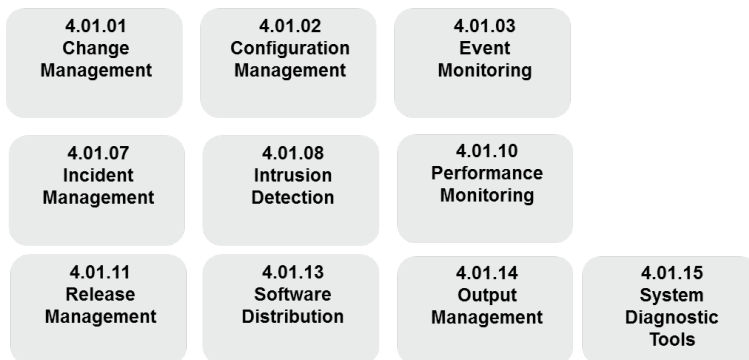


Figure 12. Basic Technology Services in Systems Management

Basic Technology Services are used for the following:

- Categorizing existing technologies within the IT Infrastructure; and
- Establishing target technologies for each service and rationalizing the choice of standards and related vendor products.

Technology Devices Model

The second reference model in the Technology View is the Technology Devices Reference Model. There are three primary categories of devices in the IT Infrastructure: User Devices, including all types of personal computing and communications equipment as well as output and display devices; Computing Devices, including many different types of server environments for applications; and Network Devices, including various types of switches and routers and associated transmission control equipment.

Each of these categories can be decomposed into their respective types of devices such as desktops, laptops, PDAs, etc. Technology Devices have the following uses within the framework:

- They become the physical platform for supporting combinations of Target Technology Services configured to provide a specific role within the IT Infrastructure;
- These Target Devices can be built on common basic platforms such as many server types built on a basic Windows or Unix platform;
- These Target Devices can also be clustered into standard Work Center templates, providing a highly reusable and scalable technology architecture for distribution across similar work areas with common requirements; and
- They provide the building blocks for assembling Systems Technologies to support the full range of requirements of specific Application Systems and related Infrastructure Systems, such as e-mail, e-commerce, and video conferencing.

With this complete set of Reference Models, built on the framework, the Business Transformation Toolkit provides a holistic, integrated structure for analyzing and assessing the capabilities of the enterprise and for developing effective business solutions that are driven by strategic requirements.

Glossary

Business Transformation Toolkit	A formalized framework, methodology, and modeling tools for private sector businesses and public sector institutions.
The BOST Framework	It provides different views of the enterprise through models, elements, and associated relationships built around an underlying Metamodel.
Integrated Program Planning Methodology	It supports the development of reference and target architecture models, assessment of baseline capabilities, identification of transformation opportunities, and creation of migration roadmaps.
Reference Models	It accelerates Enterprise Architecture initiatives by providing an evolving set of generic and industry-specific models that identify essential capabilities and relationships that are crucial to value generation.
Modeling Tool and Repository	It captures the BOST Framework; stores associated element attributes; performs matrix analyses; and generates Web and document-based deliverables.
Business View	It caters to the strategists and planners involved in assessing market opportunities, expanding product portfolios, and leveraging partnering opportunities.
Operations View	It describes the essential functions of the enterprise and is used to design effective business processes and well-defined organizational accountabilities.
Systems View	It defines how information management applications are linked to automate business process workflow and transaction management.
Technology View	It contains the architecture models that are used to design the underlying information technology infrastructure, including user devices that access these applications, the computers that run the applications, and the networks that connect it all together.

Related Documents

An Introduction to Informatica's Approach to Enterprise Architecture and the Business Transformation Toolkit

This white paper introduces the Informatica Business Transformation Toolkit. The paper provides an overview of the philosophy, framework, methods, and tools as well as guidelines for establishing an Enterprise Architecture practice.

An Introduction to the Integrated Program Planning Methodology

This white paper introduces the Integrated Program Planning Methodology, a component of the Informatica Business Transformation Toolkit. It describes how to use the BOST Framework and Reference Models as a capability-based planning approach either for a specific transformation opportunity or in the context of an ongoing Enterprise Architecture program.

About Informatica

Informatica Corporation (Nasdaq:INFA) is the world's number one independent provider of data integration software. Organizations around the world rely on Informatica to realize their information potential and drive top business imperatives. Informatica Vibe, the industry's first and only embeddable virtual data machine (VDM), powers the unique "Map Once. Deploy Anywhere." capabilities of the Informatica Platform. Worldwide, over 5,000 enterprises depend on Informatica to fully leverage their information assets from devices to mobile to social to big data residing on-premise, in the Cloud and across social networks. For more information, call +1 650-385-5000 (1-800-653-3871 in the U.S.), or visit www.informatica.com.

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