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TM Forum Reference

TM Forum Core Frameworks Concepts and Principles

Business Process, Information and Functional Frameworks

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Executive Summary

TM Forum Open Digital Framework (ODF) contains a suite of best practices, standards and core frameworks that provide the blueprint for effective, efficient business operations and enable a service-oriented, highly automated, and efficient approach to business operations and application integration.

This Concepts and Principles document strives to enable the reader to get a complete point of view of the compilation and creation of the core Frameworks; (business process, Information, functional and in the future business capability frameworks), explaining the reasoning to its construction.

Core Frameworks Design Principles

The ODF Core Frameworks are built on a services-oriented design and use standard, reusable, generic blocks that can be assembled in unique ways to gain the advantages of standardization while still allowing customization and enabling differentiation and competition at the service level.

The core frameworks that make up the TM Forum ODF include the following:

1. The Business Process Framework (aka eTOM)
2. The Information Framework (aka as SID)
3. The Functional Framework

This guidebook focuses on these three core elements of ODF: The Business Process, Information and Functional frameworks, referred to as Core Frameworks.

All core frameworks are organized around domains; the definition of a domain is as follows:

A domain is a classification area which brings together a collection of objects that share some specific common architectural characteristics and subject to a common management policy.

In the Business process framework, it comprises distinct groupings of processes pertinent to a specific management area.

In the Information framework it comprises a collection of ABEs (Aggregate Business Entities whose lifecycle is the responsibility of the management area.

In the Functional Framework it comprises a collection of sub-Domain Functions (set of functions) that are specific to the sub-domain.

Domains provide a common architectural construct for processes, information, and functions, and have the following properties:

- *Contain processes, business entities, functions, and interfaces that encapsulate both operations/behavior and corporate/enterprise information for the domain's business objectives*
- *Represent a distinguishable share of the enterprise's operations*

They are closely related (very cohesive) collections of corporate/enterprise processes, business entities, functions, and interfaces to fulfill the domain's role within the enterprise.

Nota bene: The Business Process Framework and the Information Framework (Product & Service domains) were approved as official ITU-T standards (M-3050 and M-3190 respectively) in 2004 and 2006. See References for further information on ITU-T TMN and 'M' Series.

The Business Process Framework

The purpose of the Business Process Framework is to continue to set a vision for the CSP industry to compete successfully through the implementation of business process driven approaches to managing the enterprise. This includes ensuring integration among all vital enterprise support systems concerned with service delivery and support.

The focus of the Business Process Framework is on the business processes used by service providers, the linkages between these processes, and the use of Market, Product, Customer, Service, Resource, Business Partner, and Enterprise Management related information by multiple processes.

The over-arching objective of the Business Process Framework is to continue to build on TM Forum's success in establishing:

- An (CSP) 'industry standard' business process framework.
- Common definitions to describe process elements of a CSP.
- Agreement on the basic information required to perform each process element within a business activity and use of this within the overall ODF program for business requirements and information model development that can guide industry agreement on contract interfaces, shared data model elements, and supporting system infrastructure and products.

The Information Framework

The Information Framework provides an information reference model and a common information data vocabulary from a business entity perspective.

Like the other Core Frameworks components, the Information Framework uses the concepts of domains and aggregate business entities (or sub-domains) to categorize business entities, to reduce duplication and overlap. Based on data affinity concepts, the categorization scheme is necessarily layered, with each layer identifying in more detail the "things" associated with the immediate parent layer. This partitioning of the Information Framework also allows distributed work teams to build out the model definitions while minimizing the flow-on impacts across the model.

The Information Framework provides CSPs with a data entity view of their business. That is to say, the Information Framework provides the definition of the 'things' that are to be affected by the business processes defined in the Business Process Framework.

The Application Framework

NOTA BENE:

As of 2020, the TM Forum Executive Board agreed to stop maintaining the Application Framework (aka TAM), as it is gradually being deprecated and replaced by a Functional Architecture and Framework, which is supported by technical architecture components formally known as ODA components. ODA replaces traditional operations and business support systems (OSS/BSS) with a new approach to building software for the telecoms industry, opening a market for standardized, cloud-native software components, and enabling communication service providers and suppliers to invest in IT for new and differentiated services instead of maintenance and integration.

ODA comprises an architecture framework, common language, design principles, and specifications for standardized, interoperable software components and Open APIs.

The Application Framework (originally known as TAM) has been since its inception around 2005, the TM Forum initiative to deliver an application architecture or framework for use by service providers and others within the Information Communications, and Entertainment industries. At its core, the Application Framework is a logical application map supporting the business processes in a Communications Service Provider type of enterprise. It includes descriptions and hierarchal groupings that are structured based on the common horizontal domains in Core Frameworks.

The Application Framework provides its own decomposition and methods for identifying, classifying and grouping of concepts. The identification guidelines include commercial and best IT practices.

Reasoning for grouping of applications can vary. The document suggests a number of cases for grouping throughout the Application Framework. These can be based on applications that consume other application's functionality or share functionality with another application. Grouping can also be based on similar end users, purpose, or data entity.

The classification system in the Application Framework makes reuse of the Business Process and Information Framework decompositions and the domains, along with its own methods to specify integration infrastructure functionality.

Functional Framework

At its core, the Functional Framework is a Function map supporting the business processes and producing / consuming Information from Information Framework of Service Provider type of enterprise. It includes descriptions and hierarchal groupings that are structured based on the Horizontal Domains of Core Frameworks.

The TM Forum Functional Framework is another plane in the Service Provider's ecosystem Functional Architecture. It is a functional orientated framework of reference. It describes the Service Provider automated functions.

It provides a common reference map and language to navigate the Functional Architecture. Where the Business Process Framework (a.k.a. eTOM) provides a frame of reference for processes and the Core Frameworks - Information Framework (a.k.a. SID) provides a frame of reference for information language, the Frameworx – Functional Framework provides a frame of reference for telecom automated functionalities.

The Functional Framework provides the bridge between Business Process Framework and Information Framework:

- Each Function from the Functional Framework supports one or many processes from Business Process Framework and each process might be supported by many Functions sequenced by the process.
- Each Function might produce one or many ABEs / BEs from Information Framework and each ABEs / BEs is produced by a unique Function.

PART I – CORE FRAMEWORKS - STATUS & RELATIONSHIPS

The purpose of this section on Core Frameworks is to outline the relationship between the processes as defined in the Business Process Framework, the information elements as defined in the Information Framework and the Functional Framework specification of functions and other characteristics.

1 Definition of Horizontal Domains and Verticals Contexts

1.1 Definition of Horizontal Domain (DRAFT)

A domain is a classification area which brings together a collection of objects that share some specific common architectural characteristics and subject to a common management policy.

From the user's viewpoint, objects exist in a domain. Domains in fact hold references to member objects. In addition, domains provide a flexible structuring of the name space for identifying objects. Domains are a generalization of the concepts of a tree structured directory system.

1.1.1 Market/Sales Domain

The Market & Sales Domain represents roles, information and activities pertaining to marketing and sales strategy, capability delivery, lifecycle management and support of parties (e.g., individuals / organizations) that move through sales lifecycle stages (e.g., contact / lead / prospect) as they learn about, inquire, choose, negotiate, order and are supported for goods and services (i.e., products) that are offered by an enterprise. On the Sales side, this includes sales contacts / leads / prospects through to the sales force and sales statistics. Market includes market strategy and plans, market segments, competitors and their products, through to campaign formulation and reporting.

1.1.2 Product Domain

The Product domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development, and operational aspects of Products that are offered to customers by an enterprise. Activities include management of Product: strategies, capabilities, lifecycles, offerings, instances, performance, contract operations, usage statistics and support of goods and services (products) that are offered to customers by an enterprise.

1.1.3 Customer Domain

The Customer domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the management of and all types of contact with customers as they acquire, use, pay for and are supported for goods and services (i.e., products) that they obtain from an enterprise. Activities include Strategy to Readiness (e.g., customer strategies, capabilities, customer lifecycle management) and Operations (e.g., customer

relationship management , data, privacy, interactions, communications, orders, accounts, balances, service level agreements (SLAs), training, problems, cases, invoices, payments, disputes, collections, loyalty, performance, usage statistics, analytics and support).

1.1.4 Service Domain

The Service domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development, and operational aspects of Services that are used to realize Product offerings to the market. Activities include management of strategies, capabilities, lifecycles, catalogs, inventories, installations, activations, problems, performance, guiding, mediation, usage statistics and support of customer-facing services that are offered to customers and resource-facing services that are presented to resources by an enterprise.

1.1.5 Resource Domain

The Resource domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development and operational aspects of Resources (e.g., functions, applications, computing, networking and storage) that represent the infrastructure of an enterprise that are used to realize Services. Activities include management of strategies, capabilities, lifecycles, catalogs, inventories, topologies, installations, activations, alarms, problems, performance, mediation, usage statistics and support of Resources that are managed by an enterprise.

1.1.6 Business Partner Domain

The Business Partner domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development, operational aspects and all types of contact with Business Partners (e.g., Suppliers, Partners, etc.) with which an enterprise collaborates in order to operate their business. Activities include management of Business Partner: strategies, capabilities, value propositions, relationships, profiles, data, privacy, security, interactions, communications, tenders, agreements, orders, requisitions, supplies, accounts, balances, inventories, reconciliations, service level agreements (SLAs), training, problems, cases, invoices, payments, revenues, disputes, collections, loyalty, performance, usage statistics, analytics and support of Business Partners as they supply, acquire, use, support, purchase, pay for and are supported for goods and services (products) that they provide and / or obtain from an enterprise.

1.1.7 Enterprise Domain

The Enterprise domain represents roles, information and activities that are required to run and support a business. These concepts focus on both the setting and achieving of strategic corporate goals and objectives, as well as providing those support services that are required throughout an Enterprise. These concepts are sometimes considered to be the corporate functions and/or processes (e.g., Financial Management, Human Resources Management processes, etc.). Since Enterprise Management is aimed at general support within the Enterprise, they may interface as needed with almost every other process in the Enterprise, be they operational, strategy, infrastructure or product processes.

1.1.8 Common Domain

The Common domain which is part of the Information Framework (SID) and the Functional Framework (the Common domain was part of the eTOM in versions 19.0 to 21.0, but it was

removed from the eTOM in the latest release 21.5) represents business roles, information, functions and metrics, etc. that support several Core Frameworks' domains and are not specific to (i.e., are generic) or "owned by" any particular domain or are referenced or utilized from two or more other domains.

1.2 Definition of Vertical Contexts (DRAFT)

Vertical Contexts (originally known as "Process Groupings") are (in the Business Process Framework-eTOM) "pillars" (therefore vertical) which represent stages or partitions of the lifecycle of the enterprise. "Process Groupings" have been since the early days of development of the eTOM, an enterprise lifecycle-related concept which represents an important aspect in the classification, structure and definition of core business processes in the Business Process Framework, but also applied (at least partially) to the Application Framework (TAM), and in some cases it was applied to the Information Framework as well.

More recently the term "Vertical Context" (which is still under discussion), intends to bring a broader classification concept anchored in the idea that such vertical partitions should or could be common to all ODF core Frameworks, permeating each and all of these frameworks, in which case the purpose and role of such verticals may call for a different semantic definition.

2 Information Framework to Business Process Framework Mappings

2.1 Principles for Mapping

Please note:

This mapping chapter is under review and has been deemed as not current.

The team is in the process of reviewing and updating this chapter.

The following principles and delimitations are used for coupling Information Framework ABEs to Business Process Framework business processes.

When possible, an ABE is coupled to only one core process. This specific process is denoted as "primary".

Primary core processes manage the complete life cycle of an ABE, by creating, reading, updating, and deleting (CRUD) entity instances contained within the ABE.

Information is considered to flow both in the process layer as well as the systems (read ABE) layer.

If a one-to-one pairing is not attainable, an ABE is mapped to at most two core processes. If an ABE is mapped to two core processes, both core processes are considered to be primary.

Processes requiring information feeds from ABEs or read an ABE's entities to function properly are termed as "secondary".

In some cases, a secondary process may update an ABE's entities. While this is permissible care must be taken. This is because it then begins to bind the secondary process more closely with the primary process, which means the two processes must be used together to manage the lifecycle of the ABE's entities. Often the secondary process can initiate a flow to the primary processes lower level process that updates an entity or entities rather than updating the entity or entities.

Regarding ABEs Supporting Two Core Processes.

Some ABEs are coupled to two or more core processes. This occurs as the result of:

Duality phenomenon: implies that an arbitrary ABE supports two primary level 2 Business Process Framework processes, whereas the two primary processes belong to separate process areas. Thus, three combinations are available, [1] Operations & S2R, [2] Operations & EM or [3] S2R & EM. The duality phenomenon takes place because the ABE in question is regarded as unclear in terms of "core functionality", since it does not explicitly support only one primary level 2 Business Process Framework process.

Ambiguity phenomenon: is similar to the duality phenomenon, however, here an arbitrary ABE supports two primary level 2 Business Process Framework processes which both belong to only one of the three available process areas.

These phenomena may have any number of causes, such as:

The ABE may be separated into two ABEs, each supporting a single level 2 Business Process Framework process.

There may be a missing ABE that supports one of the level 2 Business Process Framework processes.

There may be a missing Business Process Framework level 2 process that aggregates the two processes.

A mistake could have been made in the mapping.

The phenomena will be investigated and, if possible, resolved in subsequent phases of the Information Framework project via the continued collaboration between the Information Framework team and the Business Process Framework team.

Business Process Framework Vertical Contexts

The column “eTOM Vertical” already present in former versions of documents GB922-CP and GB942MAP, has been preserved in this current version as an additional reference for the mapping of processes and ABEs. The following are the list of vertical process groupings used:

SM - Strategy Management

CD – Capability Delivery

LM –Lifecycle Management

OR&S – Operations Readiness & Support

F – Fulfilment

A – Assurance

B&RM – Billing & Revenue Management

FAB – Fulfilment, Assurance, Billing & Revenue Management (combination of the three verticals in Operations)

2.2 Market & Sales Domain

The Market & Sales Domain represents roles, information and activities pertaining to marketing and sales strategy, capability delivery, lifecycle management and support of parties (e.g., individuals / organizations) that move through sales lifecycle stages (e.g., contact / lead / prospect) as they learn about, inquire, choose, negotiate, order and are supported for goods and services (i.e., products) that are offered by an enterprise. On the Sales side, this includes sales contacts / leads / prospects through to the sales force and sales statistics. Market includes market strategy and plans, market segments, competitors and their products, through to campaign formulation and reporting.

Market_Sales Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Competitor ABE Identifies other providers who compete in the same market segments, accumulates intelligence about the competitors, including products (price, Key Performance Indicators and so forth).	SM	1.1.17 - Market Research	Enterprise Performance Assessment Product & Offer Portfolio Planning
Contact_Lead_Prospect ABE Provides the ability to track sales leads through their life cycle up until the time the leads become customers, including lead and contact information, sales prospects, proposals made to potential customers, and the amount of potential revenue the leads represent in the form of a sales pipeline.	F	1.1.11 - Contact/Lead/Prospect Management	Manage Prospect Selling
Market Segment ABE Supports market segments, market statistics, and forecasts.	SM	1.1.1 - Market Strategy & Policy	Sales Development Product & Offer Portfolio Planning Product Specification & Offering Development & Retirement
Market & Sales Strategy Plan ABE Supports the business plans and strategies on how to address the market with appropriate products and channels.	SM	1.1.1 - Market Strategy & Policy	Resource Strategy & Planning Product & Offer Portfolio Planning Party Strategy & Planning
Marketing Campaign ABE Supports marketing new or existing product offerings to identified target markets. For example, the launch of a pre-paid product with multiple promotions across distribution channels, market segments and so forth; a new campaign for an existing product; a re-launch of a campaign for an existing product.	LM/OR&S	1.1.15 - Marketing Campaign Management	Marketing Communications Marketing Fulfillment Response Market Research Sales Development
Sales Channel ABE Keeps track of distribution channels and sales activities, sales quotas, sales contests, commission/bonus plans, commissions/bonuses, and maintains groups of individuals that make up the sales force.	LM	1.1.8 - Sales Channel Management	Contact/Lead/Prospect Management Market/Sales Support & Readiness
Market Sales Forecast ABE Maintains market and sales forecasts, new service requirements, customer needs, and customer education.		1.1.1 - Market Strategy & Policy 1.1.3 - Sales Forecasting	

The Market & Sales Domain represents roles, information and activities pertaining to marketing and sales strategy, capability delivery, lifecycle management and support of parties (e.g., individuals / organizations) that move through sales lifecycle stages (e.g., contact / lead / prospect) as they learn about, inquire, choose, negotiate, order and are supported for goods and services (i.e., products) that are offered by an enterprise. On the Sales side, this includes sales contacts / leads / prospects through to the sales force and sales statistics. Market includes market strategy and plans, market segments, competitors and their products, through to campaign formulation and reporting.

Market_Sales Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Market Sales Roles ABE Market Sales Roles ABE contains all PartyRoles related to the Market Sales Domain such as MarketingManager, SalesAgent...		To be analyzed	
Market Sales Statistics ABE Maintains market and sales key performance indicators about Sales & Marketing revenue and sales channel performance.	OR&S	1.1.7 - Market Sales Support & Readiness	Market Strategy & Policy Sales Development Product Specification & Offering Development & Retirement
Market Segment Market Segment ABE supports market segments, market statistics, and forecasts.		To be analyzed	

2.3 Customer Domain

The Customer domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the management of and all types of contact with customers as they acquire, use, pay for and are supported for goods and services (i.e., products) that they obtain from an enterprise. Activities include Strategy to Readiness (e.g., customer strategies, capabilities, customer lifecycle management) and Operations (e.g., customer relationship management , data, privacy, interactions, communications, orders, accounts, balances, service level agreements (SLAs), training, problems, cases, invoices, payments, disputes, collections, loyalty, performance, usage statistics, analytics and support).

Customer Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Applied Customer Billing Rate ABE Deals with the correlation of related usage for subsequent rating, rates applied to the usage (both regulated and non-regulated), discounts to usage, and any taxes due on the rated usage.	B&RM	1.3.13 - Charging	Bill Payments & Receivables Management Bill Inquiry Handling Enable Retention & Loyalty Bill Invoice Management
Customer Roles ABE The Customer Roles ABE is the focus on all the roles related to Customer.	F	1.3.16 Manage Customer Inventory (New process in 19.0)	1.3.4 - Customer Management Marketing Communications Bill Payments & Receivables Management Customer Interaction Management Order Handling Enable Retention & Loyalty Problem Handling Customer QoS/SLA Management

The Customer domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the management of and all types of contact with customers as they acquire, use, pay for and are supported for goods and services (i.e., products) that they obtain from an enterprise. Activities include Strategy to Readiness (e.g., customer strategies, capabilities, customer lifecycle management) and Operations (e.g., customer relationship management , data, privacy, interactions, communications, orders, accounts, balances, service level agreements (SLAs), training, problems, cases, invoices, payments, disputes, collections, loyalty, performance, usage statistics, analytics and support).

Customer Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
			Bill Invoice Management
Customer Bill ABE Handles real-time and non-real-time Call Detail Records (CDRs) and other sources of data that result in invoice items. The Customer Bill ABE also represents the format of a bill, schedule the production of bills, customer invoicing profiles, all the financial calculations necessary to determine the total of the bill (except for rating and rating discounts), and credits and adjustments to bills.	B&RM	1.3.9 - Bill Invoice Management	1.3.10 - Bill Payments & Receivables Management Enable Retention & Loyalty Bill Payments & Receivables Management Bill Inquiry Handling
Customer Bill Collection ABE Handles credit violations, actions for overdue debts, and facility billing audits.	B&RM	1.3.10 - Bill Payments & Receivables Management	Enable Retention & Loyalty Bill Inquiry Handling
Customer Bill Inquiry ABE Represents invoice inquiries associated with invoices sent to customers and handles disputes and adjustments on individual charges, invoices, and accounts.	B&RM	1.3.11 - Bill Inquiry Handling	Enable Retention & Loyalty Customer Management
Customer Interaction ABE Represents communications with customers, and the translation of customer requests and inquiries into appropriate "events" such as the creation of a customer order, the creation of a customer bill inquiry, or the creation of a customer problem.	FAB	1.3.5 - Customer Interaction Management	Selling Bill Payments & Receivables Management Bill Inquiry Handling Order Handling Enable Retention & Loyalty Problem Handling Customer QoS/SLA Management Bill Invoice Management
Customer Order ABE Handles single customer orders and the various types thereof, such as regulated and non-regulated orders.	F	1.3.3 - Order Handling	Selling Enable Retention & Loyalty Service Configuration & Activation Problem Handling Bill Inquiry Handling
Customer Problem ABE Focuses on technical assistance and problem handling for customers.	A	1.3.7 - Problem Handling	Enable Retention & Loyalty Bill Inquiry Handling Service Configuration & Activation
Customer SLA ABE Is a special case of the Service Level Agreement ABE where an involved party in the agreement is a Customer. See the Agreement ABE in the Common Business Entity Domain for details.	A	1.3.8 - Customer QoS/SLA Management	Selling Bill Payments & Receivables Management Bill Inquiry Handling Enable Retention & Loyalty
Customer Statistic ABE Represents the analysis of customer usage patterns, customer profitability statistics and churn and retention statistics.	OR&S FAB	1.3.1 - Customer Support	Selling Bill Payments & Receivables Management Bill Inquiry Handling Order Handling Problem Handling

The Customer domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the management of and all types of contact with customers as they acquire, use, pay for and are supported for goods and services (i.e., products) that they obtain from an enterprise. Activities include Strategy to Readiness (e.g., customer strategies, capabilities, customer lifecycle management) and Operations (e.g., customer relationship management , data, privacy, interactions, communications, orders, accounts, balances, service level agreements (SLAs), training, problems, cases, invoices, payments, disputes, collections, loyalty, performance, usage statistics, analytics and support).			
Customer Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
			Customer QoS/SLA Management Bill Invoice Management

2.4 Product Domain

The Product domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development and operational aspects of Products that are offered to customers by an enterprise. Activities include management of Product: strategies, capabilities, lifecycles, offerings, instances, performance, contract operations, usage statistics and support of goods and services (products) that are offered to customers by an enterprise.			
Product Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Loyalty ABE A loyalty program is one of the tools used by the loyalty process to retain customers. The Loyalty ABE contains all entities useful to specify and instantiate loyalty programs. A LoyaltyProgramProdSpec defines the LoyaltyRules that have to be checked in order to identify the actions to apply. Depending on the type of LoyaltyRules a LoyaltyAccount might be needed to collect gains or not. A LoyaltyProgramProduct is a type of ProductComponent and described by a LoyaltyProgramProdSpec.	FAB	1.1.19 - Loyalty Program Management	Customer Information Management Customer Interaction Management Problem Handling Bill Inquiry Handling Customer QoS/SLA Management
Product ABE Represents an instance of a product offering subscribed to by a party, such as a customer, the place where the product is in use, as well as configuration characteristics, such as assigned telephone numbers and internet addresses. The Product ABE also tracks the services and/or resources through which the product is realized.	F	1.2.11 Product Inventory Management (New process in 19.0)	Selling Order Handling Bill Payments & Receivables Management Bill Inquiry Handling Charging Verify Product Configuration Problem Handling Customer QoS/SLA Management Bill Invoice Management SM&O Support & Readiness Develop Detailed Service Design Create Service Orders Service Configuration & Activation

The Product domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development and operational aspects of Products that are offered to customers by an enterprise. Activities include management of Product: strategies, capabilities, lifecycles, offerings, instances, performance, contract operations, usage statistics and support of goods and services (products) that are offered to customers by an enterprise.

Product Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
			Service Problem Management Service Quality Management Service Guiding & Mediation Create Resource Orders
Product Configuration ABE The definition of how a Product operates or functions in terms of CharacteristicSpecification(s) and related ResourceSpec(s), ProductSpec(s), ServiceSpec(s) as well as a representation of how a Product operates or functions in terms of characteristics and related Resource(s), Product(s), Service(s).	F	1.2.5 - Product Configuration Management	Problem Handling Product Performance Management Product Support & Readiness
Product Offering ABE Represents tangible and intangible goods and services made available for a certain price to the market in the form of product catalogs. This ABE is also responsible for targeting market segments based on the appropriate market strategy.	LM	1.2.7 - Prod Spec & Offering Development & Retirement 1.6.4 - Party Offering Development & Retirement	Marketing Communications Marketing Fulfillment Response Selling Order Handling Product & Offer Capability Delivery
Product Performance ABE The Product Performance ABE handles product performance goals, the results of end-to-end product performance assessments, and the comparison of assessments against goals. The results may include the identification of potential capacity issues.	A	1.2.6 - Product Performance Management	Customer QoS/SLA Management Service Quality Management Resource Performance Management Product Specification & Offering Development & Retirement Enterprise Performance Assessment
Product Specification ABE Defines the functionality and characteristics of product offerings made available to the market.	LM	1.2.7 - Prod Spec & Offering Development & Retirement 1.6.4 - Party Offering Development & Retirement	SM&O Support & Readiness Develop Detailed Service Design Create Service Orders Service Configuration & Activation Create Resource Orders Product & Offer Capability Delivery
Product Test ABE A product test is a function performed on a product that results in measures being produced that reflect the functioning of the entity under test.	F	1.3.7 - Problem Handling *Note: Sub-process level 3 "1.3.7.1.3 Perform Specific Customer Problem Tests" proposed by ODA to be replaced by 2 level 2 processes "Product Test Strategy" & "Product Test Management"*	Product Specification & Offering Development & Retirement Problem Handling
Product Usage ABE Represents usage of products associated with Customers used for charging that may appear on a Customer Bill.	OR&S	1.2.7 - Prod Spec & Offering Development & Retirement	Problem Handling Customer QoS/SLA Management

The Product domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development and operational aspects of Products that are offered to customers by an enterprise. Activities include management of Product: strategies, capabilities, lifecycles, offerings, instances, performance, contract operations, usage statistics and support of goods and services (products) that are offered to customers by an enterprise.

Product Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
		1.6.4 - Party Offering Development & Retirement 1.3.12 - Billing Events Management 1.6.19 Party Billing Events Management (New process in 19.0)	Enterprise Performance Assessment Product Specification & Offering Development & Retirement
Strategic Product Portfolio Plan ABE Is concerned with the plans of the product port-folio, which product offerings to make available to each market segment and the plans to development and deploy product offerings, as well as retirement of products.	SM	1.2.1 - Product & Offer Portfolio Planning	Market Strategy & Policy Product Specification & Offering Development & Retirement

2.5 Service Domain

The Service Domain consists of a set of layered ABEs that are used to manage the definition, development, and operational aspects of Services provided by an NGOSS system. Entities in this domain support various Business Process Framework processes that deal with the definition, development and management of services offered by an enterprise. This includes agreement on Service levels to be offered, deployment and configuration of Services, management of problems in Service installation, deployment, usage, or performance, quality analysis, and rating. Finally, this domain also includes entities to perform planning for future offerings, service enhancement or retirement, and capacity.

Service Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Service ABE The Service ABE contains entities that are used to represent both customer-facing and resource-facing types of services. Entities in this ABE provide different views to examine, analyze, configure, monitor and repair Services of all types. Entities in this ABE are derived from Service Specification entities.	F	1.4.4 - SM&O Support & Readiness	Service Capability Delivery Service Development & Retirement SM&O Support & Readiness Service Problem Management Service Quality Management Service Guiding & Mediation
Service Configuration ABE The Service Configuration ABE contains entities that are used to represent and manage configurations of CustomerFacingService and ResourceFacingService entities. This set of entities also provides details on how the configuration of each of these types of Services can be changed. The entities in this ABE depend on entities in the Resource Domain, which provide the physical and logical infrastructure for implementing a Service. They all define dependencies between a higher-level Service and any sub-Services that are used by the higher-level Service.	F	1.4.3 - Service Development & Retirement 1.4.5 - Service Configuration & Activation	Service Capability Delivery SM&O Support & Readiness Resource Provisioning
Service Order ABE The Service Order ABE contains entities that represent a type of Request that decomposes a Customer Order's products	F	1.4.5 - Service Configuration & Activation	

The Service Domain consists of a set of layered ABEs that are used to manage the definition, development, and operational aspects of Services provided by an NGOSS system. Entities in this domain support various Business Process Framework processes that deal with the definition, development and management of services offered by an enterprise. This includes agreement on Service levels to be offered, deployment and configuration of Services, management of problems in Service installation, deployment, usage, or performance, quality analysis, and rating. Finally, this domain also includes entities to perform planning for future offerings, service enhancement or retirement, and capacity.			
Service Domain ABEs	**eTOM Vertical**	**Primary Process**	**Secondary Process**
into the services associated with a ServiceOrder through which the products are realized.			
Service Performance ABE The Service Performance ABE collects, correlates, consolidates, and validates various performance statistics and other operational characteristics of customer and resource facing service entities. It provides a set of entities that can monitor and report on performance. Each of these entities also conducts network performance assessment against planned goals, performs various aspects of trend analysis, including error rate and cause analysis and Service degradation. Entities in this ABE also manage the traffic generated by a Service, as well as traffic trend analysis. This is important for newer technologies that separate data, control and management functions for a given Service.	A	1.4.7 - Service Quality Management	Service Development & Retirement SM&O Support & Readiness Service Problem Management Resource Performance Management
Service Problem ABE The Service Trouble ABE manages faults, alarms, and outages from a Service point-of-view. This is then correlated to trouble tickets, regardless of whether the cause is physical or logical. Other entities in this ABE are used to direct the recovery from each of these three types of problems. They provide the ability to associate Resource faults and alarms to degradation and outages of Services that run on those Resources. These functions are independent of the Resources and technologies used to build the Service. A third set of entities in this ABE is used to differentiate between customer-reported problems and network-induced problems.	A	1.4.6 - Service Problem Management	Problem Handling SM&O Support & Readiness Service Quality Management Resource Trouble Management
Service Roles ABE Service Roles ABE contains all PartyRoles related to the Service Domain such as ServiceManager.		To be analyzed	
Service Specification ABE The Service Specification ABE contains entities that define the invariant characteristics and behavior of both types of Service entities. This enables multiple instances to be derived from a single specification entity. In this derivation, each instance will use the invariant characteristics and behavior defined in its associated template. Entities in this ABE focus on adherence to standards, distinguishing features of a Service, dependencies (both physical and logical, as well as on other services), quality, and cost. In general, entities in this	LM	1.4.3 - Service Development & Retirement	Service Capability Delivery SM&O Support & Readiness Service Configuration & Activation Service Problem Management Service Quality Management Service Guiding & Mediation

The Service Domain consists of a set of layered ABEs that are used to manage the definition, development, and operational aspects of Services provided by an NGOSS system. Entities in this domain support various Business Process Framework processes that deal with the definition, development and management of services offered by an enterprise. This includes agreement on Service levels to be offered, deployment and configuration of Services, management of problems in Service installation, deployment, usage, or performance, quality analysis, and rating. Finally, this domain also includes entities to perform planning for future offerings, service enhancement or retirement, and capacity.

Service Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
ABE enable Services to be bound to Products and run using Resources.			
Service Strategy & Plan ABE The Service Strategy and Plan ABE contains entities that are used to address the need for enhanced or new Services, as well as the retirement of existing Services, by the enterprise. These entities have a strong dependency on both entities in the Resource and Product domains. Resulting efforts, such as deciding what Resources to use to host a Service, or what Services are used to support new Product Specifications, are also supported, as are service demand forecasts.	SM	1.4.1 - Service Strategy & Planning	Service Capability Delivery Service Development & Retirement Resource Strategy & Planning Product & Offer Portfolio Planning
Service Test ABE The Service Test ABE contains entities that are used to test customer and resource facing service entities. These entities are usually invoked during installation, as a part of trouble diagnosis, or after trouble repair has been completed.	F	1.4.6 Service Problem Management *Note: Sub-process level 3 "1.4.6.2 Diagnose Service Problem" proposed by ODA to be replaced by 2 level 2 processes "Service Test Strategy" & "Service Test Management"*	Service Problem Management Service Quality Management
Service Usage ABE The Service Usage ABE collects Service consumption data, and generates Service usage records, for use by other business entities. The entities in this ABE provide physical, logical, and network usage information.	B&RM	1.4.3 - Service Development & Retirement 1.4.8 - Service Guiding & Mediation	Service Development & Retirement Service Quality Management Resource Data Collection & Distribution

2.6 Resource Domain

The Resource domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development and operational aspects of Resources (e.g., functions, applications, computing, networking and storage) that represent the infrastructure of an enterprise that are used to realize Services. Activities include management of strategies, capabilities, lifecycles, catalogs, inventories, topologies, installations, activations, alarms, problems, performance, mediation, usage statistics and support of Resources that are managed by an enterprise.

Resource Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Resource ABE The Resource ABE contains entities that are used to represent the various aspects of a Resource. This includes four sets of entities that represent: the physical and logical aspects of a Resource; show how to aggregate such resources into aggregate entities that have physical and logical characteristics and behaviour; and show how to represent networks,	F	1.5.4 - RM&O Support & Readiness	1.5.6 - Resource Provisioning Resource Capability Delivery RM&O Support & Readiness Resource Data Collection & Distribution Resource Trouble Management Resource Performance Management

The Resource domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development and operational aspects of Resources (e.g., functions, applications, computing, networking and storage) that represent the infrastructure of an enterprise that are used to realize Services. Activities include management of strategies, capabilities, lifecycles, catalogs, inventories, topologies, installations, activations, alarms, problems, performance, mediation, usage statistics and support of Resources that are managed by an enterprise.			
Resource Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
sub-networks, network components, and other related aspects of a network.			
Resource Configuration ABE The Resource Configuration ABE contains entities that are used to represent and manage configurations of PhysicalResource, LogicalResource, and CompoundResource entities. It should be noted that configurations themselves are managed entities. This set of entities also provides details on how the configuration of each of these types of resources is changed in order to meet product, service, and resource requirements, including activation, deactivation, and testing. Areas covered include verifying resource availability, reservation and allocation of resource instances, configuring and activating physical and logical resource instances, testing and updating of the resource inventory database.	F	1.5.3 - Resource Development & Retirement 1.5.6 - Resource Provisioning	Resource Capability Delivery RM&O Support & Readiness
Resource Order ABE The Resource Order ABE contains entities related to the business interaction orders.	F	1.5.6 - Resource Provisioning	
Resource Performance ABE The Resource Performance ABE collects, correlates, consolidates, and validates various performance statistics and other operational characteristics of Resource entities. It provides a set of entities that can monitor and report on performance. The entities in this ABE provide physical, logical, and performance information. Each of these entities also conducts network performance assessment against planned goals, performs various aspects of trend analysis, including error rate and cause analysis and Resource degradation. Entities in this ABE also manage traffic in a Resource. This includes statistics defining Resource loading, and traffic trend analysis.	A	1.5.9 - Resource Performance Management	Resource Development & Retirement RM&O Support & Readiness Resource Data Collection & Distribution
Resource Roles ABE Resource Roles ABE contains all PartyRoles related to the Resource Domain such as Technician, ResourceManager.		To be further analyzed	

The Resource domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development and operational aspects of Resources (e.g., functions, applications, computing, networking and storage) that represent the infrastructure of an enterprise that are used to realize Services. Activities include management of strategies, capabilities, lifecycles, catalogs, inventories, topologies, installations, activations, alarms, problems, performance, mediation, usage statistics and support of Resources that are managed by an enterprise.			
Resource Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Resource Specification ABE The Resource Specification ABE contains entities that define the invariant characteristics and behavior of each type of Resource entities. This enables multiple instances to be derived from a single specification entity. In this derivation, each instance will use the invariant characteristics and behavior defined in its associated template.	LM	1.5.3 - Resource Development & Retirement	Resource Capability Delivery RM&O Support & Readiness Resource Provisioning Resource Data Collection & Distribution Resource Trouble Management Resource Performance Management
Resource Strategy & Plan ABE The Resource Plan ABE is used to plan networks and resource elements both initially and for growth. It will coordinate both logical and physical resource growth. Inputs are budgets from business sources, service forecasts, current and projected network utilization, new technologies, and retiring technologies. It handles the lifecycle (installation, modification, removal, and retirement) for both logical and physical resources.	SM	1.5.1 – Resource Strategy & Planning	Service Strategy & Planning Resource Capability Delivery Resource Development & Retirement RM&O Support & Readiness
Resource Test ABE The Resource Test ABE contains entities that are used to test PhysicalResources, LogicalResources, CompoundResources, and Networks. These entities are usually invoked during installation, as a part of trouble diagnosis, or after trouble repair has been completed.	F	Resource Provisioning *Note: Sub-process level 3 "Test Resource" proposed by ODA to be replaced by 2 level 2 processes "Resource Test Strategy" & "Resource Test Management"*	Resource Capability Delivery Resource Trouble Management Resource Performance Management
Resource Topology ABE The Resource Topology ABE contains entities that define physical, logical, and network topological information. This information is critical for assessing the current state of the network, as well as providing information on how to fix problems, tune performance, and in general work with the network (both as a whole and with its components). Each of these topological views provides its own physical, logical, or network related information that can be used to manage one or more layers in a layered network.	F	1.5.6 - Resource Provisioning	Resource Development & Retirement RM&O Support & Readiness

The Resource domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development and operational aspects of Resources (e.g., functions, applications, computing, networking and storage) that represent the infrastructure of an enterprise that are used to realize Services. Activities include management of strategies, capabilities, lifecycles, catalogs, inventories, topologies, installations, activations, alarms, problems, performance, mediation, usage statistics and support of Resources that are managed by an enterprise.

Resource Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Resource Trouble ABE The Resource Trouble ABE manages problems found in allocated resource instances, regardless of whether the problem is physical or logical. Entities in this ABE detect these problems, act to determine their root cause, resolve these problems and maintain a history of the activities involved in diagnosing and solving the problem. Detecting problems can be done via software (e.g., responding to an alarm) and/or by hardware (e.g., a measurement or probe) and/or manually (e.g., visual inspection). This includes tracking, reporting, assigning people to fix the problem, testing and verification, and overall administration of repair activities.	A	1.5.8 - Resource Trouble Management	Service Problem Management RM&O Support & Readiness Resource Performance Management
Resource Usage ABE The Resource Usage ABE collects Resource consumption data, and generates Resource usage records, for use by other business entities. The entities in this ABE provide physical, logical, and network usage information.	FAB	1.5.3 - Resource Development & Retirement 1.5.7 - Resource Data Collection & Distribution	1.5.10 - Resource Mediation & Reporting Manage Billing Events Service Guiding & Mediation

2.7 Business Partner Domain

The Business Partner domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development, operational aspects and all types of contact with Business Partners (e.g., Suppliers, Partners, etc.) with which an enterprise collaborates in order to operate their business. Activities include management of Business Partner: strategies, capabilities, value propositions, relationships, profiles, data, privacy, security, interactions, communications, tenders, agreements, orders, requisitions, supplies, accounts, balances, inventories, reconciliations, service level agreements (SLAs), training, problems, cases, invoices, payments, revenues, disputes, collections, loyalty, performance, usage statistics, analytics and support of Business Partners as they supply, acquire, use, support, purchase, pay for and are supported for goods and services (products) that they provide and / or obtain from an enterprise.

Business Partner Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Party Account ABE Represents entities that are similar to those in the Customer ABE, such as PartyAccount and PartyAccountContact. This ABE was added to maintain backward compatibility and conformance of the Party ABE rather than include these entities within it.	FAB	1.6.16 Party Bill Payments & Receivables (new process in 19.0)	Party Strategy & Planning Party Offering Development & Retirement Party Support Party Order Handling Party Problem Handling Party Performance Management Party Revenue Management
Party Interaction ABE	FAB	1.6.9 - Party Interaction Management	Party Bill Inquiry Handling (new)

The Business Partner domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development, operational aspects and all types of contact with Business Partners (e.g., Suppliers, Partners, etc.) with which an enterprise collaborates in order to operate their business. Activities include management of Business Partner: strategies, capabilities, value propositions, relationships, profiles, data, privacy, security, interactions, communications, tenders, agreements, orders, requisitions, supplies, accounts, balances, inventories, reconciliations, service level agreements (SLAs), training, problems, cases, invoices, payments, revenues, disputes, collections, loyalty, performance, usage statistics, analytics and support of Business Partners as they supply, acquire, use, support, purchase, pay for and are supported for goods and services (products) that they provide and / or obtain from an enterprise.

Business Partner Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Represents communications with parties, and the translation of requests and inquiries into appropriate "events" such as the creation of an order, the creation of a bill inquiry, or the creation of a problem.			Party Problem Handling Party Order Handling Party Performance Management Party Bill Inquiry Handling Party Revenue Management
Party Order ABE Handles party orders and the various types thereof, such as regulated and non-regulated orders.	F	1.6.8 - Party Order Handling	Party Problem Handling Party Bill Inquiry Handling
Party Problem ABE Focuses on technical assistance and problem handling reported to and by other parties.	A	1.6.10 - Party Problem Handling	Party Order Handling Party Bill Inquiry Handling Party Interaction Management Party Relationship Development & Retirement
Party Product Specification & Offering ABE The Party Product Specification and Offering ABE represents the involvement parties playing roles have with ProductSpecifications, ProductOfferings, such as ordered from and billed by.	LM	1.6.4 - Party Offering Development & Retirement	Party Tender Management Party Agreement Management
Partner & Supplier ABEs Manages Partner roles and related information. Manages Supplier roles and related information.		To be further analyzed	
Party Bill ABE *To be completed*	B&RM	1.6.15 Party Bill/Invoice Management (new level 2 in 19.0)	
Party Bill Collection ABE The Party Bill Collection ABE handles credit violations, actions for overdue debts (Dunning), and all what is related to PartyPayment.	B&RM	1.6.16 Party Bill Payments & Receivable Management (new level 2 in 19.0)	
Applied Party Billing Rate ABE *To be completed*	B&RM	1.6.17 Party Charging (new level 2 in 19.0) 1.3.17 Pricing, Discounting, Adjustments & Rebates Application (new level 2 in 19.0)	
Party Revenue & Settlement ABE Party Revenue ABE is composed of revenue sharing and settlements.	B&RM	1.6.12 - Party Revenue Sharing and Settlement	Enterprise Risk Management Financial & Asset Management Party Agreement Management
Party SLA ABE	A	1.6.5 - Party Agreement Management	Resource Performance Management

The Business Partner domain represents roles, information and activities carried out by parties (e.g., individuals / organizations) playing roles that are involved in the strategic planning, definition, development, operational aspects and all types of contact with Business Partners (e.g., Suppliers, Partners, etc.) with which an enterprise collaborates in order to operate their business. Activities include management of Business Partner: strategies, capabilities, value propositions, relationships, profiles, data, privacy, security, interactions, communications, tenders, agreements, orders, requisitions, supplies, accounts, balances, inventories, reconciliations, service level agreements (SLAs), training, problems, cases, invoices, payments, revenues, disputes, collections, loyalty, performance, usage statistics, analytics and support of Business Partners as they supply, acquire, use, support, purchase, pay for and are supported for goods and services (products) that they provide and / or obtain from an enterprise.

Business Partner Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
A Service Level Agreement ABE with one or more other parties. See the Agreement ABE in the Common domain for additional details.			Service Quality Management Customer QoS/SLA Management Party Support
Party Statistic ABE Represents the analysis of party usage patterns, profitability statistics.	OR&S/FAB	1.6.6 - Party Support	Party Strategy & Planning Party Performance Management
Party Strategy & Plan ABE The strategies and the planning of the business relation with the other parties with input from other ABEs, such as MarketSales, Party Performance and Competitor Analysis.	SM	1.6.1 - Party Strategy & Planning	Party Offering Development & Retirement Party Tender Management

2.8 Enterprise Domain

The Enterprise domain represents roles, information and activities that are required to run and support a business. These concepts focus on both the setting and achieving of strategic corporate goals and objectives, as well as providing those support services that are required throughout an Enterprise. These concepts are sometimes considered to be the corporate functions and/or processes (e.g., Financial Management, Human Resources Management processes, etc.). Since Enterprise Management is aimed at general support within the Enterprise, they may interface as needed with almost every other process in the Enterprise, be they operational, strategy, infrastructure or product processes.

Enterprise Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
Enterprise Effectiveness ABE Represents all information used to evaluate the enterprise effectiveness, such as Business Objectives and Processes.	NA	1.7.3 - Enterprise Effectiveness Management	Party Performance Management Customer Interaction Management Customer Support
Enterprise Risk ABE Represents all items that relate to the risk of an enterprise. It also concerns security vulnerabilities and related events as well as information related to Revenue Assurance such as areas of revenues leakage risk and operational capability to resolve any detected degradations and violations.	NA	1.7.2 - Enterprise Risk Management	Party Relationship Development & Retirement Party Performance Management
Enterprise Roles ABE Enterprise Roles ABE contains all PartyRoles related to the Enterprise such as Employee, Employer, Regulator...		To be further analyzed	
Finance ABE The Finance ABE aims to describe all what is related to the Enterprise	NA	1.7.5 - Financial & Asset Management	

The Enterprise domain represents roles, information and activities that are required to run and support a business. These concepts focus on both the setting and achieving of strategic corporate goals and objectives, as well as providing those support services that are required throughout an Enterprise. These concepts are sometimes considered to be the corporate functions and/or processes (e.g., Financial Management, Human Resources Management processes, etc.). Since Enterprise Management is aimed at general support within the Enterprise, they may interface as needed with almost every other process in the Enterprise, be they operational, strategy, infrastructure or product processes.			
Enterprise Domain ABEs	eTOM Vertical	Primary Process	Secondary Process
finance such as financial accounts, general ledger...			
Workforce ABE Represents dispatched Field Force Management - human and other field resources with their roles, skills, calendars and other characteristics. Also, models work orders, catalog of work descriptions, various schedules, as well as reservation and assignment of a technician to a task.	OR&S	1.7.7 - Human Resources Management 1.5.5 - Workforce Management	Party Performance Management Enterprise Effectiveness Management

PART II – BUSINESS PROCESS FRAMEWORK

3 Introduction

The Business Process Framework is intended to deliver reusable process elements to enable the construction of best practice or implementation specific process flows to a wide variety of purposes.

3.1 What is the Business Process Framework?

The Business Process Framework is a reference framework or model for categorizing all the business activities that a service provider will use. It is NOT a service provider business model. In other words, it does not address the strategic issues or questions of who a service provider's target customers should be, what market segments the service provider should serve, what are a service provider's vision, mission, etc. A business process framework is one part of the strategic business model and plan for a service provider.

The Business Process Framework is better regarded as a framework, rather than a business process model, since its aim is to categorize the process elements and business activities so that these can then be combined in many ways, to implement end-to-end business processes (e.g., fulfillment, assurance, billing) which deliver value for the customer and the service provider. Key concepts that form the basis for the Business Process Framework are outlined in Annex A, Business Process Framework Concepts, and readers that are not familiar with the Business Process Framework may wish to gain an initial view of these concepts, to provide context before reading the main document.

Previous Business Process Framework (eTOM) Releases have established the Business Process Framework as TM Forum member-approved, with global agreement from the highest conceptual level downwards, and has gone on to take account of real-world experience in applying the Business Process Framework, and to incorporate new detail in process decompositions, flows and business-to-business interaction.

Beyond this, the Business Process Framework work has potential to develop further, in areas such as further lower-level process decompositions and flows, applications in specific areas of business, guidelines and assistance in using the Business Process Framework, cost and performance issues associated with the processes, etc. In addition, ongoing feedback from the industry, together with its linkage with the wider ODF program, can be used to guide future priorities for continuing work.

It should be noted that the development of a full process framework is a significant undertaking, and the work must be phased over time based on member process priorities and member resource availability. This effect is visible in Business Process Framework's history, from the early work on a business process map that carried through to the Business Process Framework itself, broadening along the way to a total enterprise framework and the current Release.

A great many service providers, as well as system integrators, ASPs (Application Service Providers) and other types of vendors, are working already with the Business Process Framework. They need an industry standard framework for procuring software and equipment, as well as to interface with other service providers in an increasingly complex network of business relationships.

Many service providers have contributed their own process models because they recognize the need to have a broader industry framework that doesn't just address operations or traditional business processes.

The Business Process Framework is also used as a consensus tool for discussion and agreement among service providers and network operators. This encouraged convergence and general support for a broad common base in this area, which has been built on and extended with the Business Process Framework, to enable:

Focused work to be carried out in TM Forum teams to define detailed business requirements, information agreements, business application contracts and shared data model specifications (exchanges between applications or systems) and to review these outputs for consistency

Relating business needs to available or required standards

A common process view for equipment suppliers, applications builders and integrators to build management systems by combining third party and in-house developments.

The anticipated result is that the products purchased by service providers and network operators for business and operational management of their networks, information technologies and services will integrate better into their environment, enabling the cost benefits of end-to-end automation.

Furthermore, a common industry view on processes and information facilitates operator-to-operator operator-to-customer and operator-to-supplier, partner process interconnection, which is essential for rapid service provisioning and problem handling in a competitive global environment. This process interconnection is the key to digital services supply chain management.

The Business Process Framework work also provides the definition of common terms concerning enterprise processes, sub-processes and the activities performed within each. Common terminology makes it easier for service providers.

Annex A, Terminology and Acronym Glossary, contains definitions of Business to negotiate with customers, third party suppliers, and other service providers.

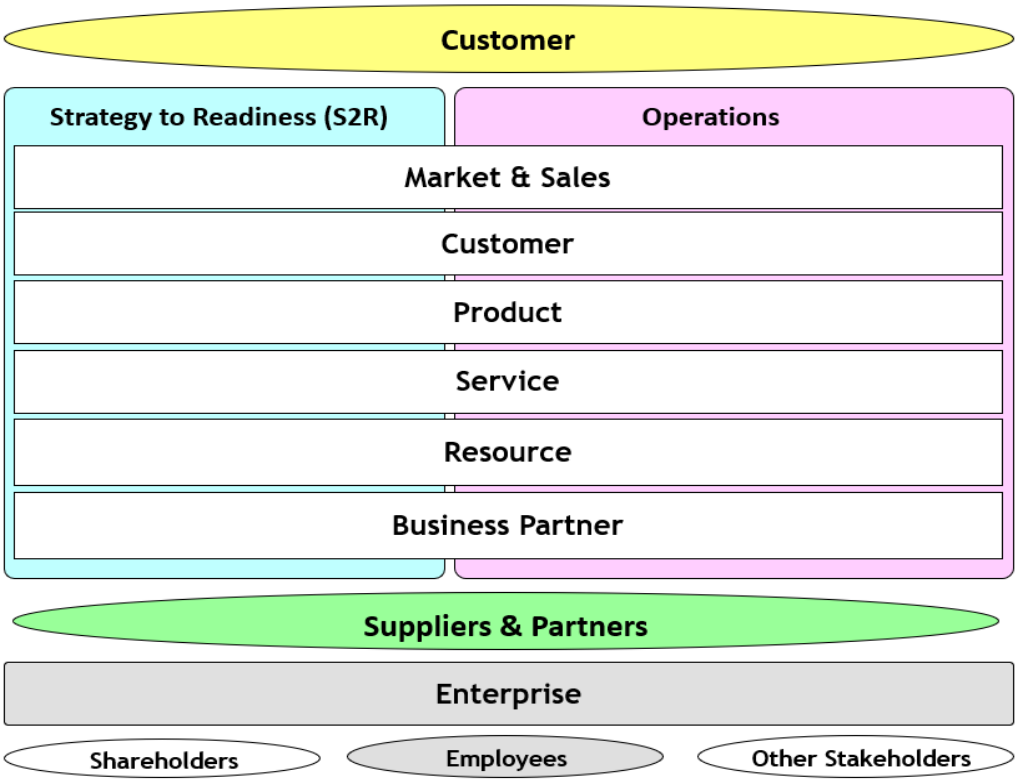

Figure 3-1 - Business Process Framework – Conceptual Model

Figure 3-1 displays the highest conceptual view of the Business Process Framework. This view provides an overall context that differentiates strategy, capability, and lifecycle processes from the operations processes in two large process areas, seen as the two major boxes in the upper part of the diagram.

It also differentiates the key management areas as horizontal layers or domains across these process areas. The third major process area, concerned with management of the enterprise itself, is shown as a separate domain in the lower part of the diagram. In addition, Figure 3-1 also shows the internal and external entities that interact with the enterprise (as ovals).

Figure 3-2 shows seven Context Verticals (in previous versions of the eTOM, these were referred to as “vertical process groupings”) that categorize the processes that are required to support customers and to manage the business. Amongst these Context Verticals, the focal point of the Business Process Framework is on the core customer operations processes of Fulfillment, Assurance and Billing (FAB). Operations Readiness & Support (OR&S) is differentiated from FAB as typically these processes apply to multiple instances of product, service, or resource at once. Outside of the Operations process area - in the Strategy to Readiness (S2R) process area - the Strategy Management context, as well as the Capability Delivery and Lifecycle Management context verticals, are differentiated. These are distinct because, unlike Operations, they do not directly support the customer, are intrinsically different from the Operations processes and work on different business time cycles.

The horizontal functional process groupings that depict domains distinguish functional operations processes and other types of business functional processes, e.g., Marketing versus Selling, Service Development versus Service Configuration, etc. Amongst processes defined in these Horizontal domains, those on the left (that cross the Strategy Management, Capability Delivery and Lifecycle Management verticals) enable, support and direct the work in the Operations process area. These processes form the apex of the process decomposition hierarchy we use to contain, find and define our processes.

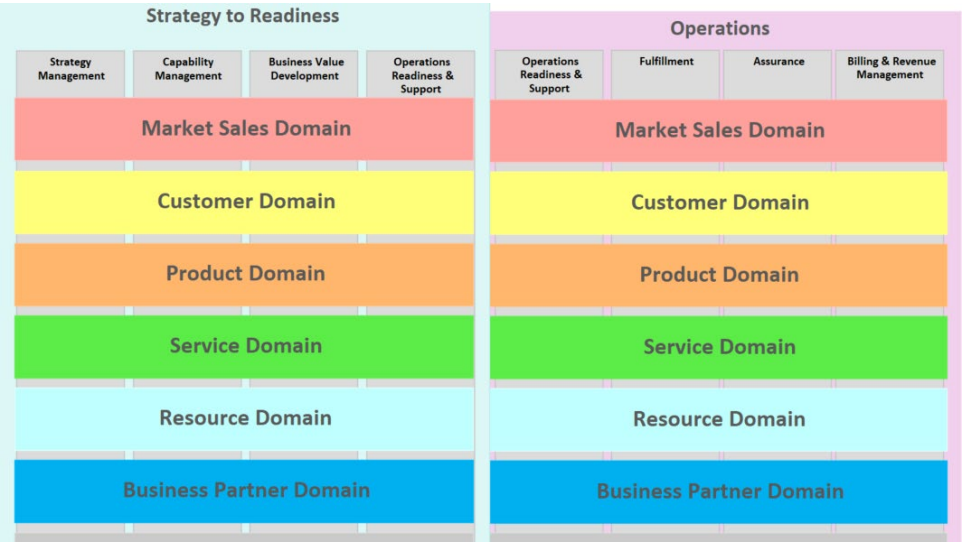

Figure 3-2 - Business Process Framework - Domains and Context Verticals

By reference to Figure 3-2, the Business Process Framework provides the following benefits:
It develops a scope addressing all enterprise processes.

It distinctly identifies marketing processes to reflect their heightened importance in the digital services world.

It distinctly identifies Enterprise Management processes, so that everyone in the enterprise is able to identify their critical processes, thereby enabling process framework acceptance across the enterprise.

It brings Fulfillment, Assurance and Billing (FAB) onto the high-level framework view to emphasize the customer priority processes as the focus of the enterprise.

It defines an Operations Readiness & Support vertical, which relates to all the operations functional process groupings. In integrating digital services and making customer self-management a reality, the enterprise has to understand the processes it needs to enable for direct and (more and more) online customer operations support and customer self-management.

It recognizes three process groupings or context verticals within the enterprise that are distinctly different from operations processes by identifying the Strategy to Readiness (S2R) processes category, i.e., Strategy Management, Capability Delivery and Lifecycle Management.

It recognizes the different cycle times of the strategy and lifecycle management processes and the need to separate these processes from the customer priority operations processes where automation is most critical. This is done by decoupling the Strategy Management and the other two verticals within S2R processes from the day-to-day, minute-to-minute cycle times of the customer operations processes.

It moves from the older customer care or service orientation to a customer centered management orientation that emphasizes customer self-management and control, improving customer experience and increasing the value customers contributes to the enterprise and the use of information to customize and personalize to the individual customer. It adds more elements to this customer operations functional process grouping to represent better the selling processes

It acknowledges the need to manage resources across technologies, (i.e., application, computing and network), by integrating the Network and Systems Management functional process into the Resource Domain. It also moves the management of IT into this functional process grouping as opposed to having a separate process grouping.

It recognizes that the enterprise interacts with external parties, and that the enterprise may need to interact with process flows defined by external parties, as in digital services interactions.

3.2 Purpose of the Business Process Framework

The purpose of the Business Process Framework is to provide a standard process structure, terminology, and classification scheme for business processes within a Service Provider type of enterprise. The intent is to offer a foundation in the form of an enterprise-wide discipline for the development of business processes that enable consistent and reusable end to end process flows to be created, which in turn enable key information about any process to be captured and made available. It provides the basis for determining how process ownership can be assigned and the visibility of processes across the wider organization.

3.3 Scope of the Business Process Framework

The scope of the Business Process Framework is to focus on the business processes of a Service Provider enterprise. While having undeniable Communications industry roots, the Framework, like its cousin, ITIL–which initially arose in Military Logistics–has transcended its origins and is now deployed to address architecture concerns in many Digital or more general Service Providers.

4 Business Process Framework Concepts

The main purpose of this Chapter is to introduce a formal description of the Business Process Framework (eTOM).

It should be noted that this framework was originally developed from the perspective of the single enterprise but recognized that internal processes extend across the enterprise boundary to allow for interactions with external parties (customers, suppliers/partners, and other parties).

In some cases, these external interactions can be defined and controlled by the enterprise, and the existing Business Process Framework has assumed that the currently identified process elements would form part of the end-end inter-enterprise or enterprise-to-customer process interaction in these cases.

Several industries have developed inter-enterprise business process frameworks which specify the structure and flow of process interactions between multiple enterprises. PaDIOM (Partner, Design, Integrate, Operate and Monetize) is the TM Forum Lifecycle method for linking business and technical collaboration activities to ensure reuse of concepts, specifications, and reusable service components across many partnerships. These mechanisms lead to agile, repeatable, reusable industrial scale B2B2X solutions. For more information on this topic, please refer to B2B2X on the TM Forum website.

The Business Process Framework considers the service provider's (sometimes termed Communications Service Provider, or CSP), enterprise, and positions this within its overall business context: i.e., the business interactions and relationships, which allow the CSP to carry on its business with other organizations.

This section introduces the Business Process Framework and explains its structure and the significance of each of the process areas within it. It also shows how the Business Process Framework structure is decomposed to lower-level process elements. This explanation is useful for those who decide where and how an enterprise will use the Business Process Framework, and those who may be modifying it for use in their enterprise.

To assist the reader in locating the process area concerned within the Business Process Framework, a graphical icon of the Business Process Framework structure, alongside the text, is provided to draw attention to the relevant framework area. This is highlighted in red to indicate the focus of the associated text or discussion.

4.1 Business Process Framework Conceptual View

The Conceptual Structure view provides an overall context that differentiates strategy and lifecycle processes from operations processes in two large process areas, seen as the two large boxes towards the top of the diagram, together with a third area beneath which is concerned with enterprise management. It also identifies the key functional process structures as horizontal domains across the two upper process areas.

4.2 Business Process Framework CxO Level View (Level 1)

Below the conceptual level, the Business Process Framework (eTOM) is decomposed into a set of domains that regroups process, which provide a first level of detail at which the entire enterprise can be viewed (see Figure 4-1). These process groupings or domains are considered from the perspective of the CEO, CIO, CTO, etc., in that the performance of these processes determines the success of the enterprise.

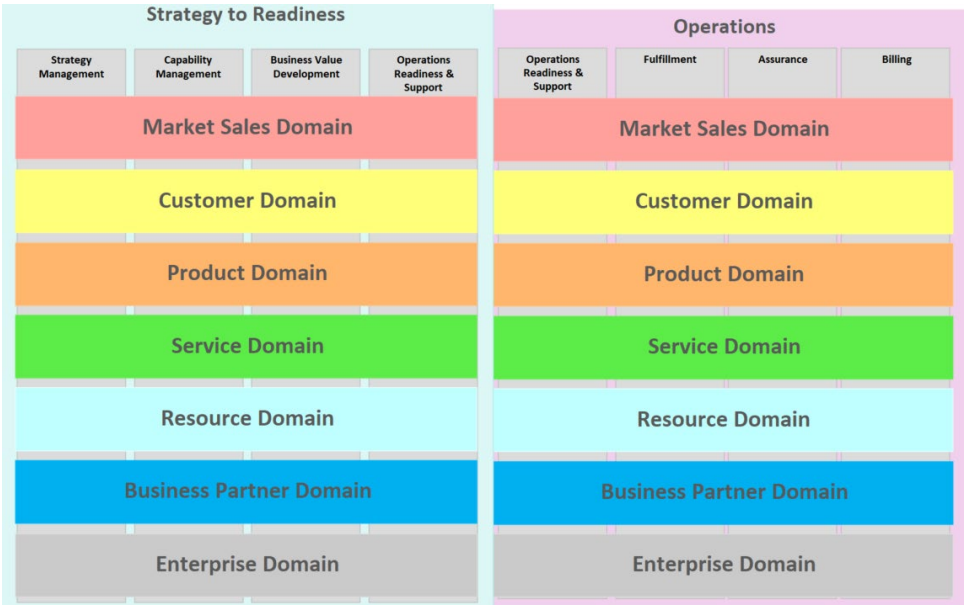

Figure 4-1 - Business Process Framework Domain View

The Business Process Framework is defined as generically as possible, so that it is independent of organization, technology and service. The eTOM is basically intuitive, business driven, and customer focused. To reflect the way businesses, look at their processes, the eTOM supports two different perspectives on the grouping of the detailed process elements as described in the following sections.

4.3 Domains (Horizontal)

Domains represent a view of functionally-related processes within the business, such as those involved in managing contact with the customer or in managing the supply chain. This structuring by domains is useful to those who are responsible for creating the capability that enables, supports or automates the processes. The horizontal functional process groupings can therefore often represent the CIO's view of the Business Process Framework. The IT teams will look at groups of IT functions which tend to be implemented together e.g., the front-of-house applications in the Customer domain process grouping, back-of-house applications in the Service domain which focus on managing information about the services that are packaged for sale to customers, or the network management applications in the Resource domain which focus on the technology which delivers the services. Typical organization workgroups also tend to align with domains as the required

knowledge and skills tend to be contained into these functional processes, e.g., the front-of-house workgroups in the Customer domain, back-of-house workgroups customers in the Service domain which focus on managing information about the services that are packaged for sale to customers, or the network management workgroups services in the Resource domain which focus on the technology which delivers the services.

4.4 Vertical Contexts

Vertical Contexts represent a view of related processes within the business, such as those involved in the overall billing flows to customers. This view is important to those people who are responsible for changing, operating, and managing the processes. These processes tend to span organization boundaries, and so the effectiveness of these processes is an area of concern to senior management and particularly the CEO. The vertical contexts can therefore often represent the CEO's view of the Business Process Framework. As such, CEOs are more interested in the outcomes of the process and how they effectively support customer needs in total - rather than worrying about the IT or the specific workgroups that need to work together to deliver the result. Particular end to end process flows have been found to transcend the boundaries of these vertical groupings, leading to a relaxation of what was previously intended by this structure to become a supplementary grouping to assist users with finding detail, rather than expecting a business significance to be depicted. However, these groupings are useful to picture the process frameworks and have a feel for where level 2 processes belong.

The Business Process Framework was developed to help build and implement the processes for a service provider. It has been developed as a structured catalogue or hierarchical taxonomy of process elements which can be viewed in more and more detail. Since in any taxonomy each element must be unique, it was decided from the start that the primary top-level hierarchy of process elements would be the functional (horizontal) processes. The context verticals are arranged as an overlay on the horizontal providing a matrix view of the process framework.

When viewed in terms of the Cross-Functional process groupings, the Business Process Framework follows a strict hierarchy where every element is only associated with or parented to a single element at the next higher hierarchical level. In a taxonomy, any element must be unique, i.e., it must be listed only once. Figure 6-1 shows the horizontal functional process groupings into which the Business Process Framework is decomposed.

Additionally, the Business Process Framework is intended to help service providers manage their business process flows. With this in mind, the Business Process Framework shows how process elements have a strong association with one (or several) context verticals (e.g., Fulfillment, Assurance, Billing & Revenue Management, Lifecycle Management etc., which are introduced later in this Chapter). These process groupings are essentially overlays onto the hierarchical top-level horizontal groupings, because in a hierarchical taxonomy an element cannot be associated with or parented to more than one element at the next higher level. Note that the Business Process Framework decomposition hierarchy operates exclusively through the Horizontal domain described above, and that these context verticals, therefore do not form part of the actual decomposition hierarchy. The context verticals should thus be viewed as ancillary views or arrangements of process elements, provided for information and navigation only, as "overlays" on the actual process hierarchy.

The overlay of the horizontal domains and the context verticals forms the inherent matrix structure of the Business Process Framework. This matrix structure is the core of one of the innovations and

fundamental benefits of the Business Process Framework. It offers for the first time a standard language and structure for the process elements that can be understood and used by both the people specifying and operating the end-to-end business, and those people who are responsible for creating the capability that enables the processes (whether automated by IT or implemented manually by workgroups).

The integration of all these processes provides the enterprise-level process framework for the service provider. As process decomposition proceeds, each level is decomposed into a set of constituent process elements at the level below.

Thus, the Enterprise conceptual view resolves into seven vertical process groupings, as well as twelve horizontal functional process groupings represented by six layers. These vertical and horizontal process groupings represent alternative views relevant to different concerns about the way that processes should be associated. Note that we will see that these alternatives have been selected to yield a single, common view of the processes defined at the next level of decomposition, and hence do not represent a divergence in the modeling.

4.5 Operations Process Area

To be useful to a service provider, the Business Process Framework must help the service provider to develop and operate their business processes. This section shows how the matrix structure of the Business Process Framework offers for the first time a standard language and structure for the process elements that are understood and used by both the people specifying and operating the end-to-end business, and those people who are responsible for creating the capability that enables the processes (whether automated by IT or implemented manually by workgroups).

Figure 4-2 - Business Process Framework OPS Context Verticals

The Operations (OPS) Process Area contains the direct operations groupings of Fulfillment, Assurance & Billing (the FAB process groupings), together with the Operations Readiness & Support grouping (see Figure 4-2). The FAB Vertical groupings are sometimes referred to as Customer Operations processes.

4.5.1 Fulfillment

This vertical grouping is responsible for initiation, instantiation and fulfillment of requests.

Frameworks artifacts in this vertical grouping initiate sales and marketing actions and convert requests (customer or business) into orders, to be delivered using the value propositions of the enterprise's portfolio.

This includes the creation of instances of relevant artifacts in all domains necessary for the delivery of the value propositions.

4.5.2 Assurance

This vertical grouping is responsible for running operations along with monitoring, measuring, analyzing and correcting to ensure the best performance, including Quality of Service.

Frameworks artifacts in this vertical grouping perform continuous status and performance monitoring of ongoing operations. They collect performance data and analyze them to identify potential problems and apply preventive and corrective maintenance without impacting the customer.

The Assurance activities receive trouble reports and take necessary actions to ensure timely corrections.

The Assurance activities ensure that overall performance and quality meets service level agreements, metric goals (KPIs) as well as reporting.

4.5.3 Billing

This vertical grouping is responsible for translating business activities into revenue.

Framework artifacts in this vertical grouping perform collection of appropriate usage records to determine charging and production of timely and accurate bills and supports payment of services and operation-related cost accounting.

They provide pre-bill usage information and are processing customer payments and performing payment collections. Figure 4-2

4.5.4 Operations Readiness & Support

This vertical grouping is responsible for ensuring operational readiness and support to the Fulfillment, Assurance and Billing & Accounting areas.

Frameworks artifacts in this vertical grouping are responsible for ensuring operations readiness and support of the enterprise's operations.

Frameworks artifacts in this vertical grouping are not concerned with individual customers and services and more with ensuring that market, product and customer related operations run effectively.

4.6 Strategy to Readiness Process Area

The Strategy Management, Capability Delivery, and Lifecycle Management process groupings, are shown as three vertical process groupings (see Figure 4-3).

The Strategy Management process grouping provides the focus within the enterprise for generating specific business strategy and gaining buy-in within the business for this.

Lifecycle Management vertical drives and supports the provision of products to customers, while the Capability process grouping delivers new or enhanced infrastructure on which the products are based. Their focus is on meeting customer expectations whether as product offerings, the infrastructure that supports the operations functions and products, or the suppliers and partners involved in the enterprise's offering to customers.

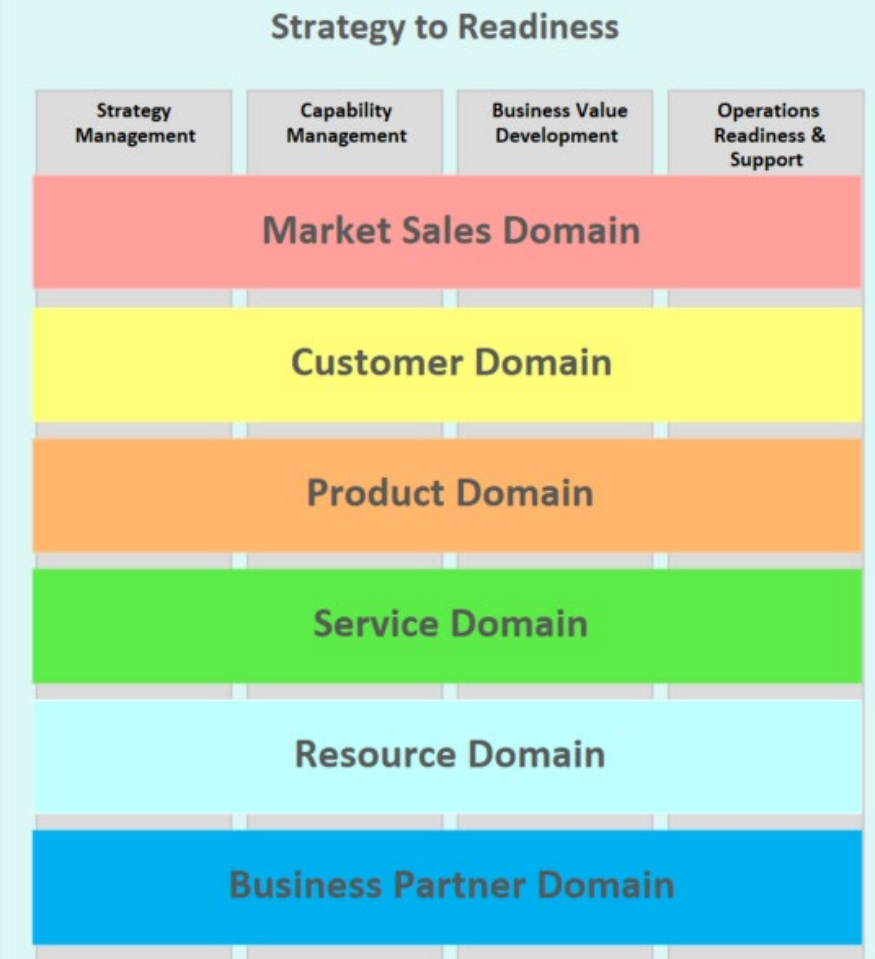

Figure 4-3 - Business Process Framework S2R Category Groupings

4.6.1 Strategy Management

The Strategy Management vertical focuses on generating and managing specific business strategies, gaining business buy-in and tracking the effectiveness of the strategies and adjusting as required.
The Strategy Management vertical is focused on the analysis and generation of strategies in support of the Capability Delivery and Lifecycle Management vertical and is also responsible for establishing business commitment within the enterprise to support these strategies. This embraces all levels of operations from market, customer and products, through the services and the resources on which these depend, to the involvement of business partners (e.g., suppliers, partners) and supporting enterprise services in meeting these needs.

4.6.2 Capability Management

The Capability Management vertical grouping focuses on the development and deployment of capabilities including all infrastructures for the delivery of products and services as well as support infrastructures and all business enablers.

Framework artifacts in this vertical grouping identify requirements, design and develop new or enhanced infrastructure and monitor the performance of the capabilities to adjust as required.

4.6.3 Business Value Development

The Business Value Development vertical grouping focuses on the definition, planning, design and implementation of value propositions and business promoting concepts/assets in the enterprise's business portfolio.

Frameworks artifacts in this vertical grouping create products, services, resources and business partner catalog information

Business Value Development also creates sales and marketing campaigns and material.

Business Value Development understand the market across all key functional areas, the business environment, customer requirements and competition's offerings in order to design and manage value propositions and business operations that succeed in their specific markets.

The Business Value Development process the operations feedback and adjusts as required for the lifecycle management.

4.7 Enterprise Domain

The Enterprise Domain includes those foundational supporting business processes that are required to run and support any large business. These generic processes focus on both the setting and achieving of strategic corporate goals and objectives, as well as providing those support services that are required throughout an Enterprise. These processes are sometimes considered to be the corporate functions and/or processes. e.g., Financial Management, Human Resources Management processes, etc. Since Enterprise Management processes are aimed at general support within the Enterprise, they may interface as needed with almost every other process in the Enterprise, be they operational, strategy, infrastructure, or product processes

This process area includes those processes that manage enterprise-wide activities and needs or have applications within the enterprise as a whole. They encompass all business management processes that:

are necessary to support the whole of the enterprise, including processes for financial management, legal management, regulatory management, process, cost and quality management, etc.

are responsible for setting corporate policies, strategies, and directions and for providing guidelines and targets for the whole of the business, including strategy development and planning, for areas such as Enterprise Architecture, that are integral to the direction and development of the business.

Occur throughout the enterprise, including processes for project management, performance assessments, cost assessments, etc.

Are commonly found across multiple industries and are managed in much the same way across most industries.

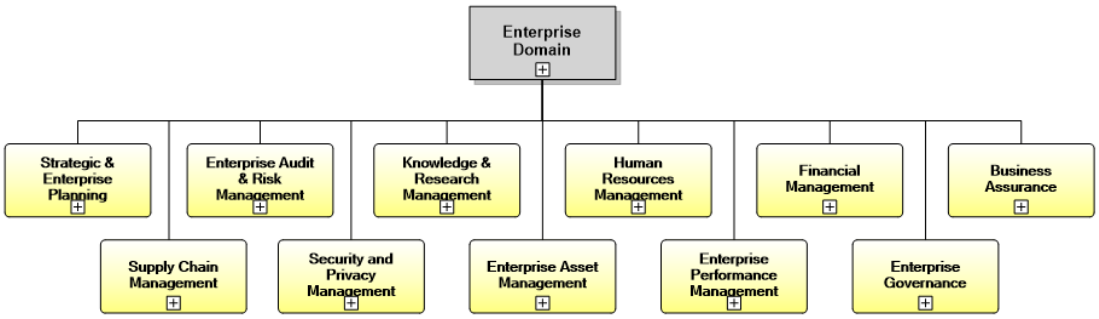

Figure 4-4 - Business Process Framework - Enterprise Domain

Many process groupings within the Enterprise domain (see Figure 4-4) will contain elements that relate to both policy setting and support of the enterprise. For example, Human Resources Management is concerned with both strategy and direction as well as supporting the management of Human Resources throughout the enterprise1.

These processes are sometimes collectively considered as the “corporate” functions and/or processes.

4.8 Business Process Framework Map

The diagram below presents a view of all domains of the Business Process Framework with their first level processes

[1] Note that functionality associated with a process grouping that is not required throughout the enterprise will not normally be located within the Enterprise domain (for example, Human Resource Management issues specific to Call Centers are likely to be associated with the processes in Operations directly involved in this area).

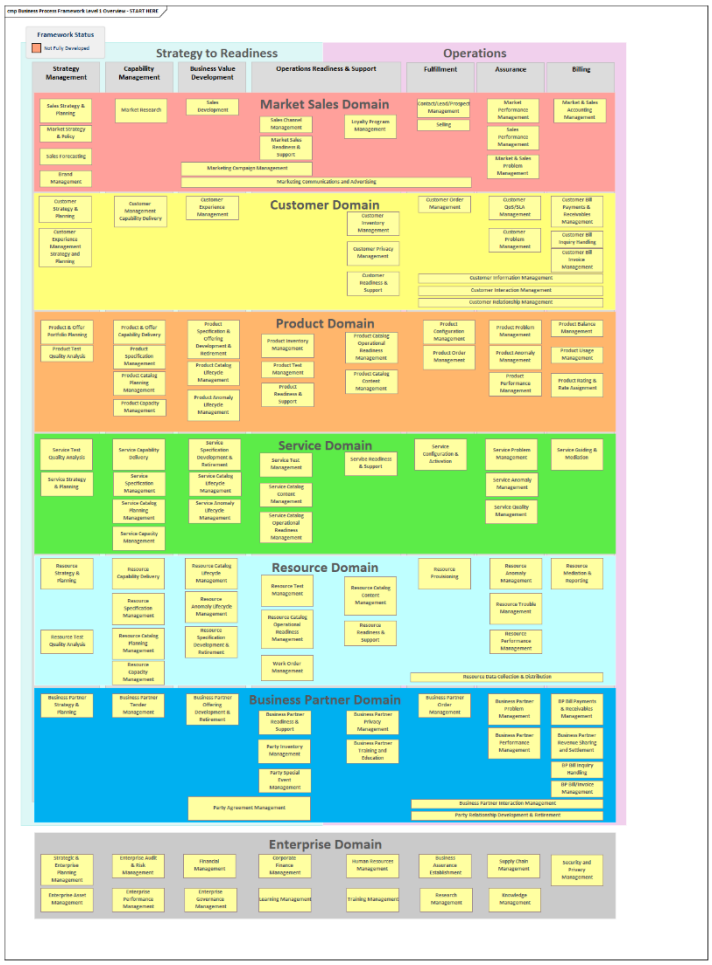

Figure 4-5 - Business Process Framework domains and process's view

4.9 External Interactions

The Business Process Framework recognizes that any single organization interacts with external parties. The major parties recognized by the Business Process Framework are customers, suppliers and partners and other engaged parties such employees, shareholders, and other stakeholders.

External interactions from/to a service provider to other parties can be achieved by a variety of mechanisms including:

- Exchange of emails or faxes
- Call Centers
- Web Portals
- Business to Business (B2B) automated transactions
- Mobile Devices
- Other means….

In order to show how the Business Process Framework accommodates processes and transactions amongst a service provider and the external parties (that may be trading partners), it is useful to visualize the Business Process Framework against this external environment, and Figure 4-6 tries to illustrate this.

In Figure 4-6, the external environment is shown diagrammatically by:

Two horizontal “bars”, the first one positioned above S2R and the Operations process areas (the Sell Side), and the second one positioned under the S2R and the Operations process areas (the Buy Side). These represent the two aspects of trading interactions in the external environment.

One vertical bar, representing the external environment and all the external parties with links to the two horizontal bars which represent the majority of the interactions that occur.

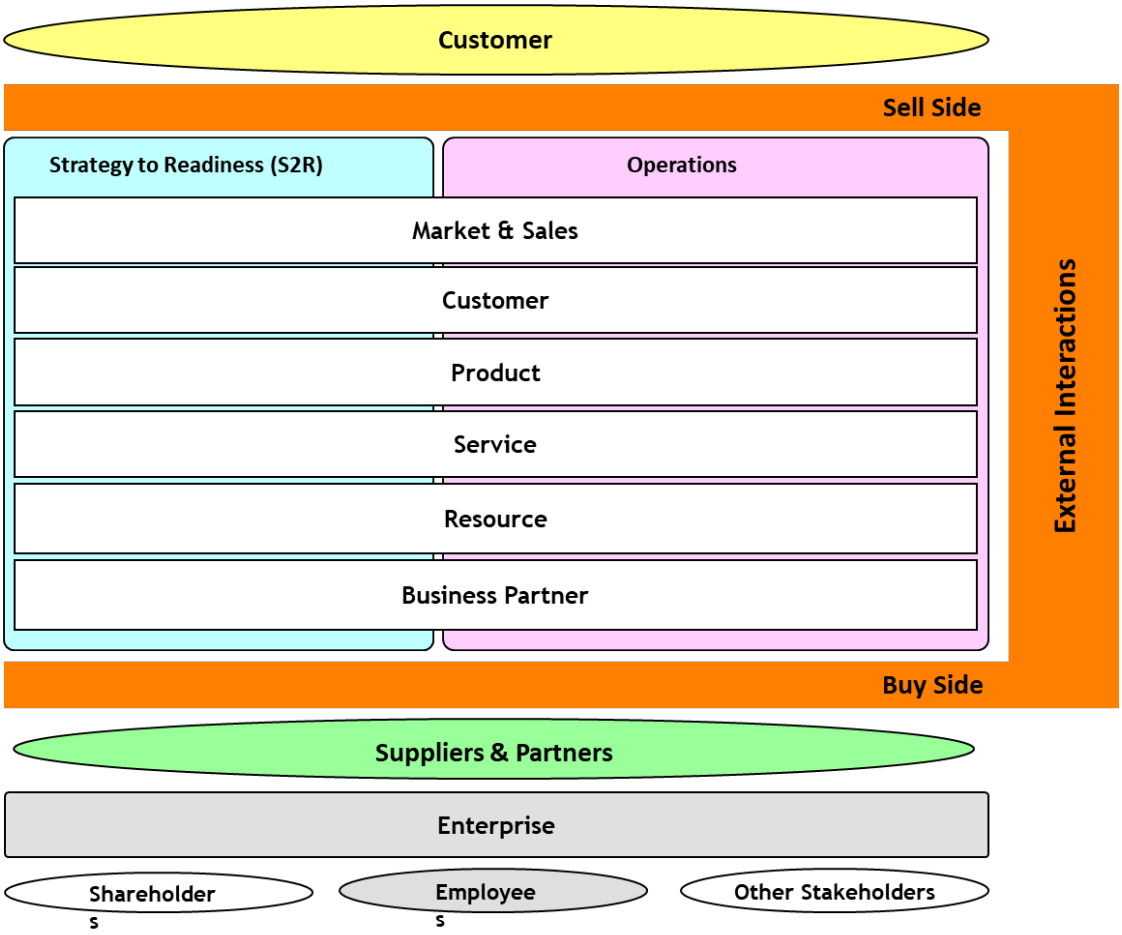

Figure 4-6 - Business Process Framework and the external environment

When the interaction with the external environment is by way of B2B trading processes, the nature and approach of these external interactions is often defined by organizations which are separate to the single enterprise. The process interactions must then be based on the concept of shared public processes, which synchronize the internal processes amongst trading partners. These shared processes have a defined “buy” and a “sell” side, which interact in a trade between a service provider and its Suppliers/Partners. Complex interactions of this kind can then be considered to consist of an appropriate set of “buy” and “sell” interactions/transactions.

B2B process interactions, and potentially other electronic interactions with customers or suppliers/partners, have specific externally specified interaction requirements. This requires that the Business Process Framework recognizes that a degree of mediation may be required as part of the process flow between the single enterprise and external parties.

When the Enterprise is trading externally, involving the use of Application-to- Application integration based on public processes, these are modeled by the added “bars”. They represent the agreed industry processes to support trading with customers and partners. Some of these trading relationships with partners may involve third parties such as marketplaces, agents, trust providers, etc., which also form part of this external environment.

Further details of the process components that support this form of external interaction is provided in GB921B and GB921C.

4.10 Process Flow Modeling Approach

A basic process flow modeling methodology has been used to show how the Business Process Framework process elements should be used to design process flows consistent with the Business Process Framework. The methodology is available in an outline form at this time and will be updated based on what proves to work well for the activity. This outline business process modeling methodology is documented separately in GB921F. There are other documents that are part of the GB921 series (Business Process Framework) which focus on various aspects regarding process flows; these are: GB921E - End-to-End Business Flows; GB921J - Joining the Business Process Framework through to Process Flows; GB921K - Construction Guidelines.

A top-down approach was adopted in the framework development phase. This enabled the definition of the Business Process Framework at the Enterprise level in a series of Level 1 process groupings. As described in the process methodology, the Business Process Framework uses hierarchical decomposition to structure the business processes.

Through hierarchical decomposition, complex entities can be structured and understood by means of the formalization of their components. Hierarchical decomposition enables detail to be defined in a structured way. Hierarchical decomposition also allows the framework to be adopted at varying levels and/or for different processes.

For the Business Process Framework, each process element has a detailed description that can include (as appropriate) the process purpose, its basic inputs and outputs, its interfaces, high level information requirements and business rules.

The Business Process Framework process flow modeling depicts process flows in a swim lane approach that drives end-to-end process and process flow-through between the customer and the supporting services, resources and business partners.

Based on the above-described process modeling approach, the Business Process Framework process work starts at Level 0, the enterprise level, and shows the component Level 1 processes (see Figure 4-1). Each Level 1 process is then decomposed into its Level 2 component processes, etc.

Some examples of business process flows are presented in: GB921F and GB921E (E2E process flows).

4.11 Summary of Key Concepts

The Business Process Framework is an enterprise process framework for service providers. The processes of the enterprise fall into eight major categories (domains) with fifteen enterprise level process groupings (or categories i.e., seven vertical process groupings + eight horizontal domains) in all.

The main strengths of the Business Process Framework are that it:

Provides an enterprise-wide total business process framework for the service provider

addresses not only operations and maintenance aspects, but covers all significant enterprise process areas

Supports e-business, introducing concepts such as Retention and Loyalty, a new Business Relationship Context Model, Party Interaction Management, etc.

Decouples lifecycle management, including development processes, from operations and day-to-day processes.

Can represent both the Framework (static) and be used for the process flow (dynamic) view, including high level information requirements and business rules for strong linkage to automation solutions.

Provides a process Framework reflecting the most current thinking in designing and documenting processes.

Provides a sound reference process framework for the ICT industry in the digital services era.

The Business Process Framework (eTOM) already has this standing, not only because it builds on and enhances previous business process analysis and modeling and analysis, but because its continuing development has extensive service provider involvement, including adoption by many service providers, vendors, integrators and process tool developers.

4.12 Process Flow Concepts

The Business Process Framework includes a considerable amount of process flow modeling to support and apply the process decompositions. This modeling will continue to be developed for the process areas of the Business Process Framework which have a high priority for member organizations. Process flow modeling, definition of high-level information requirements and business rules are essential elements in linking to systems analysis and design for development and delivery of automation solutions. The process decomposition and flow modeling are also critical linkages to the ODF systems initiatives.

This chapter addresses process flow concepts in relation to the Business Process Framework. It first gives some general information on how the process flow work is done using the Business Process Framework and then looks at the Operations processes separately from the Strategy, Infrastructure and Product processes.

4.12.1 Business Process Framework Process Flows

Process flow modeling using the Business Process Framework follows the hierarchical process decomposition and description of each process element in the hierarchies. There are two types of process flow in the Business Process Framework. First, there are the process flows for an individual process that has been decomposed to a level where it is convenient for a process 'thread' to be developed, e.g., Credit Authorization. In this context, thread is used to encompass the local process flow concerning the individual process concerned. The second type of process flow has a larger scope and is more of a picture that connects the most important elements of several process threads to provide an 'end-to-end' process flow, e.g., service request. This type of process flow typically represents an area of business solution and will begin to be added to the Business Process Framework in subsequent releases.

Whether a process thread or a process flow, each process involved is initiated by an event(s), e.g., a customer inquiry, and ends with a result(s), e.g., credit approved. The sequence of process steps to achieve the required overall result(s) is shown, with an association made to the high-level information involved as inputs or outputs. In early input/output diagrams, each high-level process showed its high-level input and output, but the inputs and outputs were not defined and were not tied to a specific process activity. This deficiency is addressed in process flow modeling with the Business Process Framework, which will provide this information as more and more process flow modeling is completed.

Current process modeling methodologies use a swim lane approach to process flow diagramming, and so does the Business Process Framework. For the most part, the swim lanes are the functional layers of the Business Process Framework, e.g., Product, Customer, Service, Resource, Business Partner domains within the Operations area. Swim lanes are the horizontal layers into which the process elements and their flows are mapped. The top swim lane represents the customer. Using a swim lane approach to process flow modeling enables better:

Process flow design, e.g., from customer request to correctly provided service

Process flow through design, e.g., from customer to resource element

Customer contact and interface process design, due to better visibility of the interfaces with the customer and the gaps between them

Value adds process element focus on process design

Visibility of too many hand-offs, too much specialization, etc.

Figure 4-7 - FAB End-To-End

4.13 Forward Compatibility

The Process Framework is always a work in progress. Industry changes and shifts in the scope and behavior of Service Providers and other companies that apply the Framework mean that it must continue to evolve.

Nevertheless, great emphasis is placed on maintaining stability in the structure and content of the Framework. With such a volatile market and business environment, some change is inevitable, but this is only done – particularly at the higher levels of the Framework with a careful balance on the value of change vs. the impact on users.

An examination of the history of updates shows that continuity and stability have been achieved over a long period of releases.

PART III – INFORMATION FRAMEWORK

5 Introduction

5.1 What is the TM Forum Information Framework?

The Information Framework addresses the Digital Service Provider's need for shared information/data definitions and models. The definitions focus on business entity definitions and associated attribute definitions. A business entity is a thing of interest to the business, while its attributes are facts that further describe the entity. Together the definitions provide a business-oriented perspective of the information and data. When combined with business-oriented UML class models, the definitions provide the business view of the information and data.

5.2 Purpose of the Information Framework

For many years the Business Process Framework (formerly known as the eTOM), and its predecessor the Telecom Operations Map (TOM), have provided a business process reference framework and common business process vocabulary. This framework and vocabulary have provided the communications and information industry enterprises an effective way to organize their business processes and communicate with each other.

The Information Framework (aka. SID) business view model can be viewed as a companion model to the Business Process Framework, in that it provides an information/data reference model and a common information/data vocabulary from a business entity perspective. The business view model uses the concepts of domains and aggregate business entities (or sub-domains) to categorize business entities, to reduce duplication and overlap. Based on data affinity concepts, the categorization scheme is necessarily layered, with each layer identifying in more detail the "things" associated with the immediate parent layer. This partitioning of the Information Framework business view model also allows distributed work teams to build out the model definitions while minimizing the flow-on impacts across the model.

Teamed with the Business Process Framework, the Information Framework provides enterprises with not only a process view of their business but also an entity view. That is to say, the Information Framework provides the definition of the 'things' that are to be affected by the business processes defined in the Business Process Framework. The Information Framework and Business Process Framework in combination offer a way to explain 'how' things are intended to fit together to meet a given business need. It should be noted that while both the Business Process Framework and the Information Framework business view model are layered, there is not necessarily a one-one relationship between the layers in each model, i.e., Business Process Framework Level 3 process elements do not only have relationships assigned to Information Framework Level 3 ABEs.

5.3 Scope of the Information Framework

The content in the Information Framework is organized using the Information Framework Model; the Information Framework was developed by the application of data affinity concepts to an enterprise's processes and data to derive a non-redundant view of the enterprise's, shared information and data. The result of this analysis is a layered framework, which partitions the shared information and data.

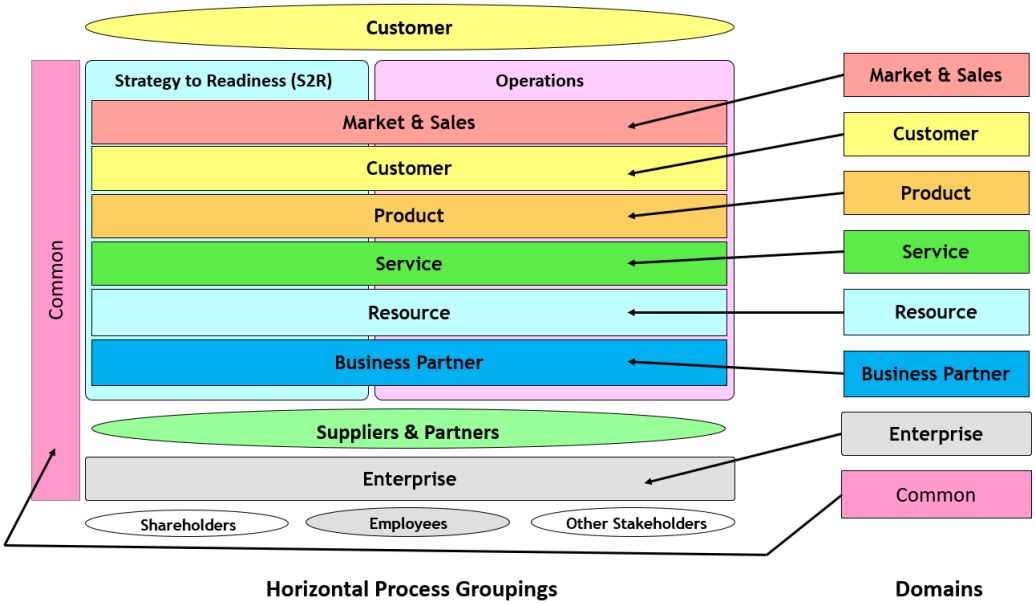

Figure 5-1 – Information Framework Domains & Business Process Framework Process Linkages

At the top layer, a set of domains is identified which are broadly aligned with the Business Process Framework business process framework as shown in Figure 5-1. Within each domain there is a high degree of cohesion between the identified business entities, and loose coupling between different domains. This enables segmentation of the total business problem and allows resources to be focused on a particular domain of interest. It is envisioned that the use of the resultant business entity definitions within each domain, when used in conjunction with the Business Process Framework, will provide a business view of the shared information and data.

Within each domain, further partitioning of the information is achieved through the identification of Aggregate Business Entities (ABE's). Figure 5-2 shows the currently identified Level 1 ABE's. As the Information Framework business view is further expanded and defined, further partitioning of the ABE's occurs as more explicit business entities are identified.

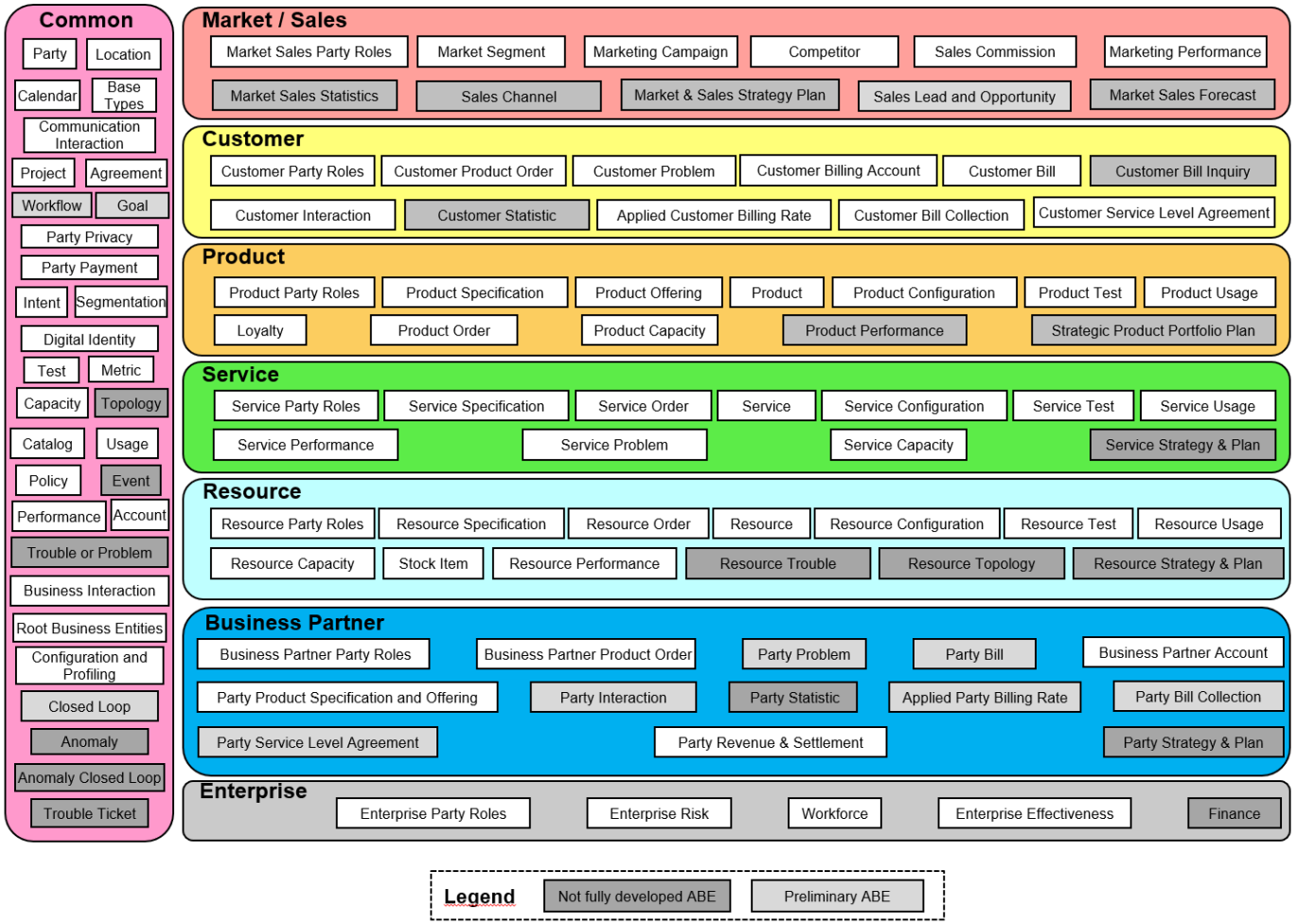

Figure 5-2 – Information Framework Domains & Level1 ABEs

The business entities along with the attributes and relationships that characterize the entities provide a view of the model that is easily understood from a business perspective. The business entities, attributes, and relationships are presented progressively developed using textual descriptions in each Information Framework addendum and in a consolidated Rational Rose UML-based model. The UML model provides an architecturally oriented business view of business entities, their attributes, and relationships to other business entities.

With release 19.5 the addenda are now automatically generated from the UML model, so the model and the addenda document are always consistent. Each domain is documented in one addendum document, so for detailed information for an ABE, please refer to the respective domain addendum.

Domains and business entities contained in the Information Framework will expand as the Information Framework project progresses. Within each domain, TM Forum project needs were used to help scope the business entities defined and modeled in this document. The other domains and further definition of the five included domains will be presented in subsequent versions of this document or in other Information Framework documents.

The sources for the Information Framework include a variety of industry models, as well as models contributed by TM Forum member organizations. Where time permitted the contents of the Information Framework was mapped to the source models. Complete synthesis of the content of all models to find a common term for a concept was not possible. A best attempt was made to list cross-references to source models and synonyms for terms as part of the definition of the Information Framework business entities.

6 The Information Framework Concepts

6.1 Domain

A Domain is a collection of Aggregate Business Entities associated with a specific management area. Domains that make up the Information Framework are consistent with Business Process Framework level 0 concepts.

Domains are derived from an analysis of Process and Information Frameworks and have the following properties:

- Contain Business Entities that encapsulate both operations and corporate/enterprise information
- Are relatively stable collections of corporate/enterprise data and associated operations (in comparison with processes)
- Provide for robustness of corporate/enterprise data formats
- Provide clear responsibility and ownership.

6.2 Aggregate Business Entity

An Aggregate Business Entity (ABE) is a well-defined set of information and operations that characterize a highly cohesive, loosely coupled set of business entities.

6.3 Business Entity

A Business Entity represents something of interest to the business that may be tangible things (such as a Customer), active things (such as a Customer Order), or conceptual things (such as a Customer Account). Business entities are characterized by attributes and participate in relationships with other business entities. Business entity instances typically move through a well-defined life cycle.

6.4 Attribute

An attribute is a fact that describes a business entity.

6.5 Relationship

A relationship is an association of business interest between two business entities, or between a business entity and itself.

7 The Information Framework Snapshot

7.1 Introduction

This chapter describes the Information structure and content that is used to organize the Information Framework model. The Information Framework provides an organizing structure in which the Information Framework business entities reside.

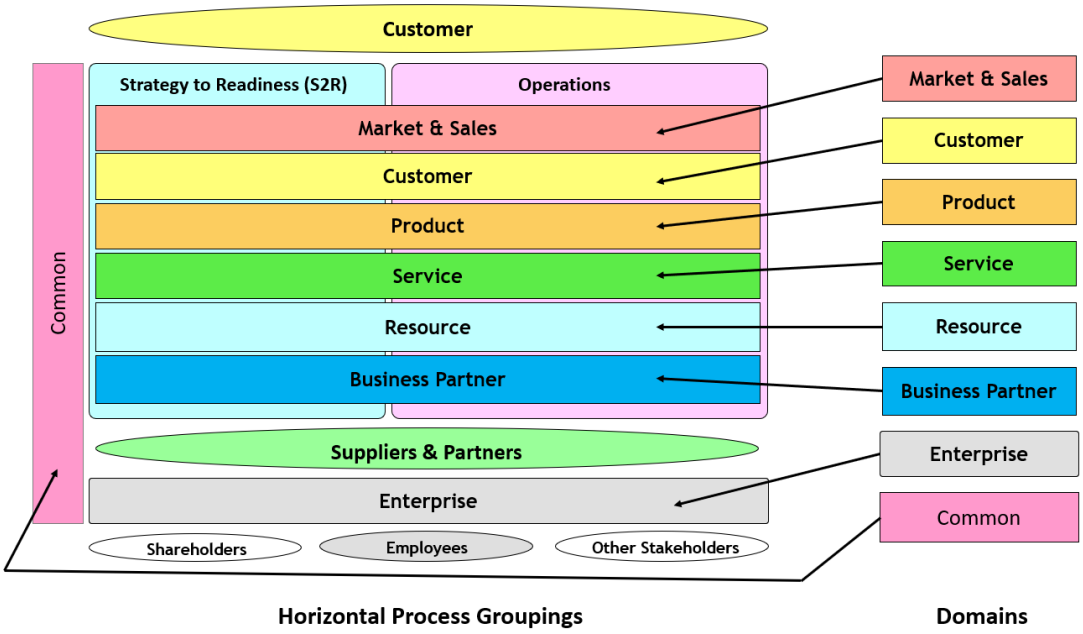

Figure 7-1- Business Process Framework/Information Framework Concepts/Domains

Figure 7-1 shows how the domains contained within the Information Framework align with Business Process Framework level one domains/concepts. Whether taking a process or information perspective, it is important to be viewing the same set of concepts. The alignment is also a necessary enabler when mapping Business Process Framework processes to Information Framework business entities.

The framework depicts the domains and Level 1 aggregate business entities (ABE) contained within each domain. An ABE marked as preliminary indicates that the ABE has not been fully developed, can be used if desired, but may change once its development is complete.

7.2 Information Framework – Level 1 ABEs

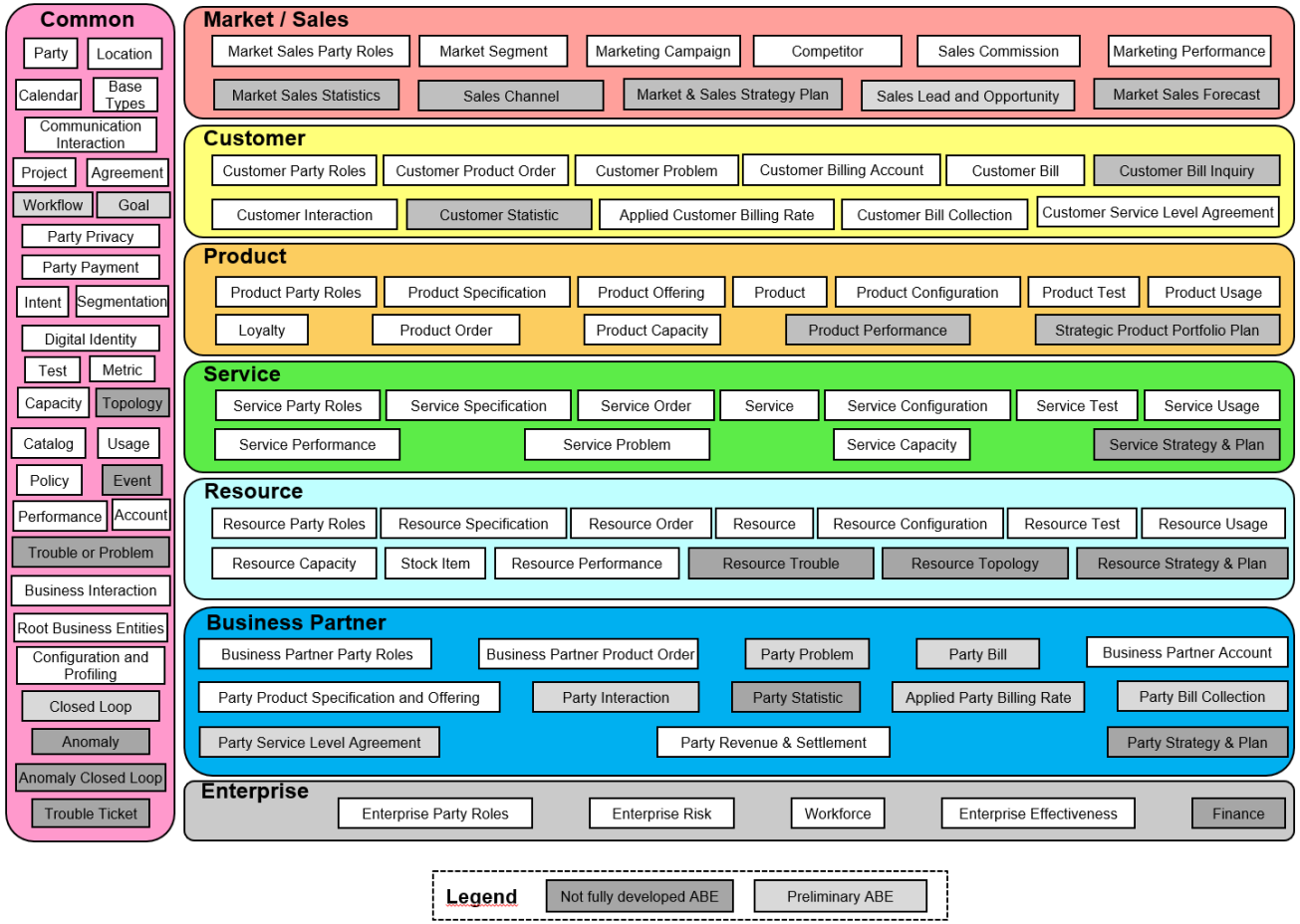

Figure 7-2 – Information Framework Level 1 ABEs

As the development of the Information Framework has progresed, subsequent levels of ABEs have been identified. As an example, Figure 7-3 below shows Level 2 ABEs identified within the Party ABE.

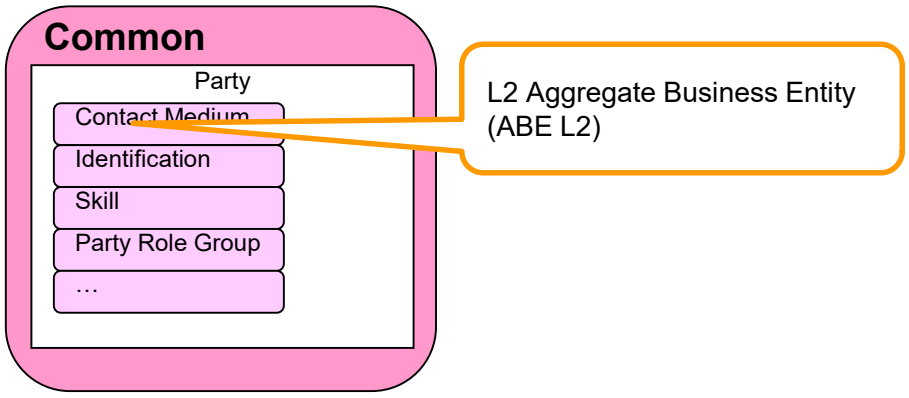

Figure 7-3 – Party Level 2 ABEs

The number of levels into which a Level 1 ABE decomposes is dependent on its complexity. Some Level 1 ABEs may decompose to two or more lower levels.

7.3 ABE Categorization

The ABE content and structure within each domain should be somewhat consistent. To ensure this, each ABE is aligned with a categorization pattern as described below. The pattern can also be used to confirm the completeness of each domain's ABE.

ABE categories include:

- Strategy and Plan
- Entity
- Entity Specification – A description of a ManagedEntity that might allow it to be built.
- Interaction – A communication with a ManagedEntity. This is a type of BusinessInteraction.
- Configuration – The internal structure of a ManagedEntity.
- Performance – The measure of ManagedEntity quality.
- Test – A means of interrogating a ManagedEntity in order to understand its state(s).
- Trouble – A problem associated with a ManagedEntity. Alarms, Outages and Faults are examples
- Price – The cost of a ManagedEntity.
- Usage – A period of time during which a ManagedEntity is in use.

Note: ABEs in Market/Sales and Common Business Domains have not yet been categorized.

	ABE Category									
	Strategy and Plan	***Entity***	***Entity Specification***	***Interaction***	***Configuration***	***Performance***	***Test***	***Trouble***	***Financial***	***Usage***
Customer		Customer	Customer SLA	Customer Interaction, Customer Bill Inquiry	Customer Order	Customer Statistic,		Customer Problem	Customer Bill Collection, Applied Customer Billing Rate	Customer Bill
Product	Strategic Product Portfolio Plan	Product	Product Specification		Product Offering	Product Performance			Product Price (Product Offering L2)	Product Usage Statistic
Service	Service Strategy and Plan	Service	Service Specification		Service Configuration	Service Performance	Service Test	Service Problem		Service Usage
Resource	Resource Strategy and Plan	Resource	Resource Specification		Resource Configuration, Resource Topology	Resource Performance	Resource Test	Resource Trouble		Resource Usage
Business Partner	Party Strategy	Party, Party Privacy	Party Product Specification and Offering	Party Interaction, Party Bill Inquiry, Agreement, Party Service Level Agreement	Party Order	Party Statistic		Party Problem	Party Revenue	

Figure 7-4 – Information Framework Common Categories

Notes: 1. The absence of an ABE in a particular category means either that the domain does not exactly fit the pattern or that an ABE has not yet been identified for the category.

PART IV – FUNCTIONAL FRAMEWORK

8 Introduction

8.1 What is the TM Forum Functional Framework?

At its core, the Functional Framework is a Function map supporting the business processes and producing / consuming Information from Information Framework of Service Provider type of enterprise.

It includes descriptions and hierarchal groupings that are structured based on the Horizontal Domains of Core Frameworks. The TM Forum Functional Framework is another plane in the Service Provider's ecosystem Functional Architecture.
It is a functional orientated framework of reference. It describes the Service Provider automated functions. It provides a common reference map and language to navigate the Functional Architecture. Where the Business Process Framework (a.k.a. eTOM) provides a frame of reference for processes and the Frameworx - Information Framework (a.k.a. SID) provides a frame of reference for information language, the Frameworx – Functional Framework provides a frame of reference for telecom automated functionalities.
The Functional Framework provides the bridge between Business Process Framework and Information Framework:

- Each Function from the Functional Framework supports one or many processes from Business Process Framework and each process might be supported by many Functions sequenced by the process.
- Each Function might produce one or many ABEs / BEs from Information Framework and each ABEs / BEs is produced by a unique Function.

8.2 Context and analysis approach of the Functional Framework

The starting point of Functions List comes from GB929 Application Framework that includes Functions. From now on, the list of Functions in GB929 is no more linked to the list of Functions from GB1033 Functional Framework.
The objectives of having an independent Functional Framework are:

- Having no more dependence from Applications completely replaced by ODA Functional Architecture
- Removing redundances between all functions
- Identifying missing Functions

The Functional Framework applies rules applicable for all Frameworx such as rules for Horizontal and Vertical Domains localization.

In TAM legacy Framework

- There are 987 Functions in the TAM Framework
- Functions are classified in Vertical / Horizontal Domains according to the Application they are related to

- Amongst 44 cross Vertical / Horizontal Domains, 18 cross Vertical / Horizontal Domains have no Function
- Some Functions are very similar as they have been identified by several Applications

Approach for the first step:

- Check each Function classification to identify the more appropriate cross Vertical / Horizontal Domain
- Identify in each cross Vertical / Horizontal Domain a grouping of Functions, named Sub-Domain Functions, at two levels to simplify search of Functions.
- Identify duplicate Functions

At the end it will help ODA to identify Functions implemented by a Component and mapping between Functions / Business processes and SID ABEs.

8.3 Scope of the Functional Framework

The following Figure below shows how the domains contained within the Functional Framework align with Core Frameworx level one **Horizontal Domains**. Whether taking a process, information or function perspective, it is important to be viewing the same set of domains. The alignment is also a necessary enabler when mapping Business Process Framework processes and Information Framework to Functional Framework.

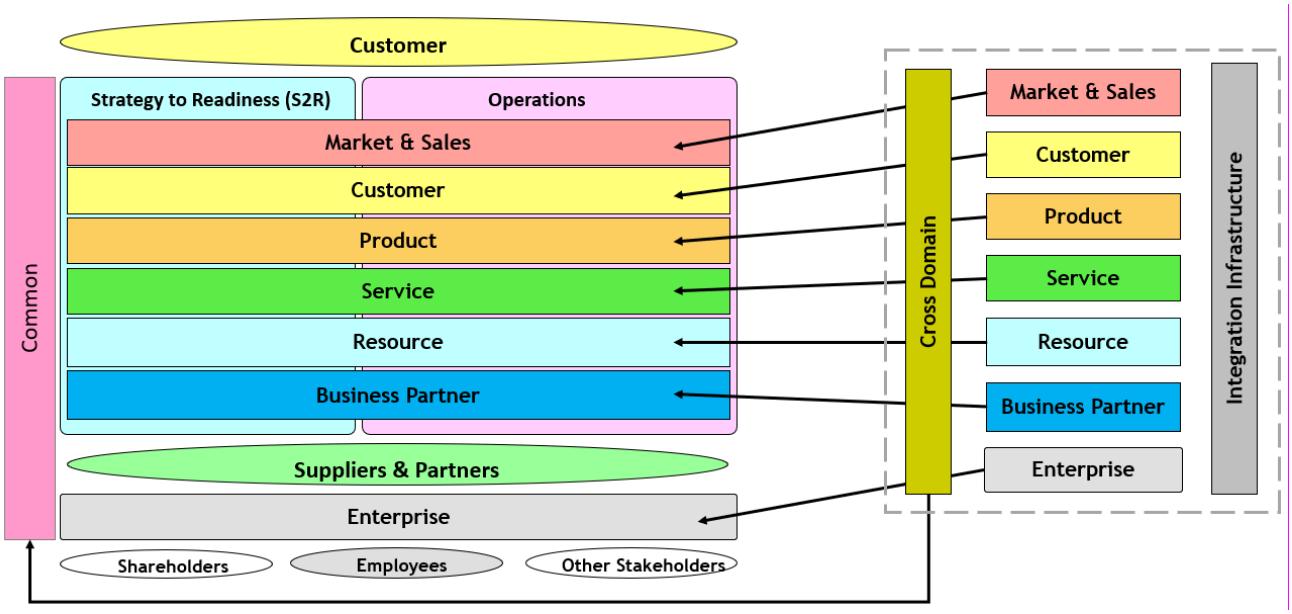

Figure 8-1 –Frameworx Horizontal Domains /Functional Framework Concepts/Domains

- *Common Domain is named Cross Domain in Functional Framework to highlight this Domain concerns needs that might be in any Horizontal Domain. It still needs to be validated*
- *Integration Infrastructure Domain comes originally from TAM and needs to be further analysed.*

The following figure shows how the core frameworks vertical contexts are exactly the same as the one used by the Functional Framework.

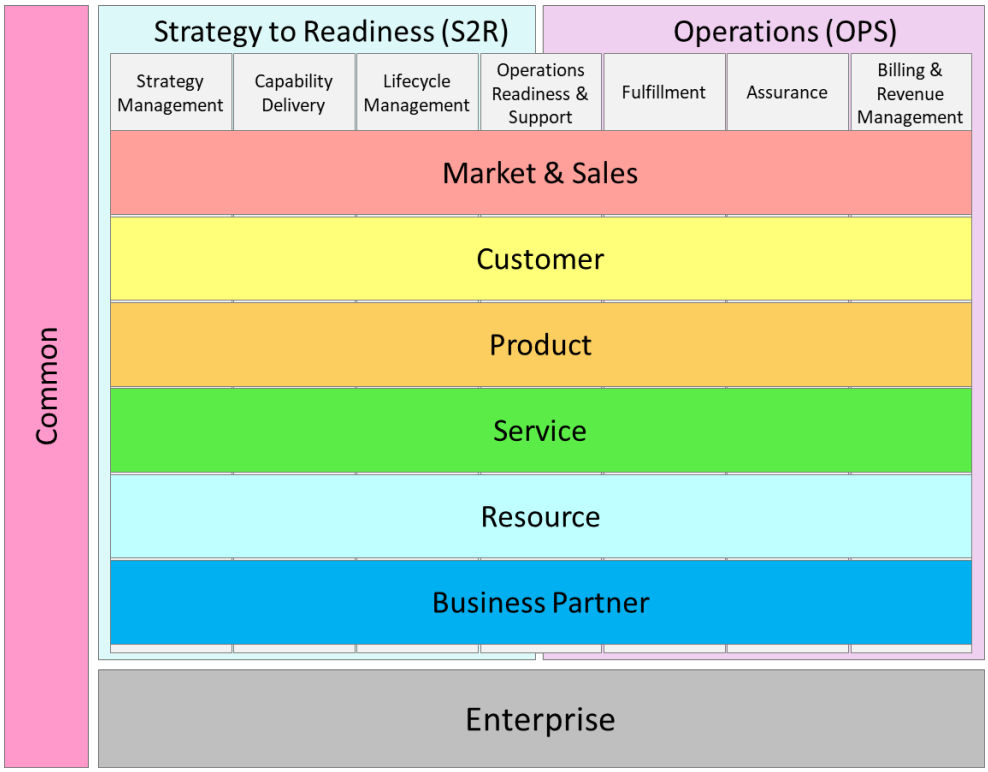

Figure 8-2 Core Frameworks Vertical Contexts

9 The Functional Framework Concepts

9.1 Domain

A Domain is a collection of Sub-Domain Functions Level 1 associated with a specific management area. Domains that make up the Functional Framework are consistent with Business Process Framework domains.

9.2 Sub-Domain Functions Level 1 and 2

It corresponds to a functional grouping of functions (i.e., set of Functions) in the same Horizontal Domain and one or many Vertical Contexts. The grouping is done at two levels: Sub-Domain Functions Level 1 and Level 2. This grouping doesn't change at all the meaning of each Function, it only helps Functional Framework's users to find more easily each Function.

The grouping is done according to main ABEs or BEs from Information Framework (a.k.a. SID) produced by the Functions and the vertical in which it is produced.

9.3 Functions

The function is the basic building block of a component and is fundamentally characterized by the information it handles (e.g., creating a customer) and functionality it realizes (e.g., Offer and Product Configuration, Customer Order Validation). A Function is implementation agnostic.

If a Function is exposed externally, it is accessed through one or more APIs (Application Programming Interfaces).

A Function may access (consume and / or produce) Information Framework (SID) Business Entities.

A Function produces a result. The intention is that a Function is defined at a level of granularity that when invoked, the outcome of the Function will be accepted by its caller as a complete result.

10The Functional Framework Snapshot

The Following Figure shows Sub-Domains Functions Level 1 according to their localization in Horizontal and Vertical Domains.

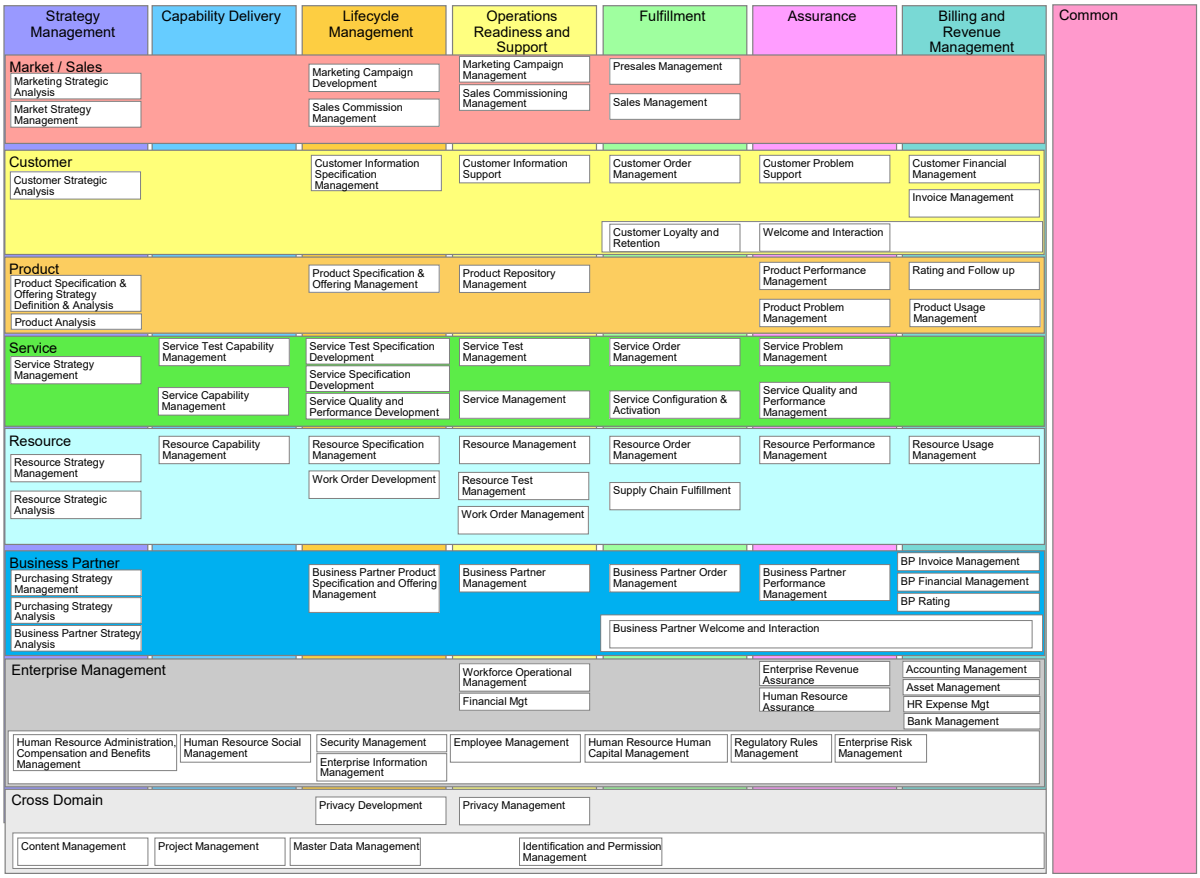

Figure 10-1 – Functional Framework

ANNEX A – APPLICATION FRAMEWORK

11 Introduction

11.1 What is the Application Framework?

The TM Forum Application Framework (a.k.a. TAM) is a functional orientated framework of reference. It describes the Service Provider ecosystem of OSS/BSS applications. The map comprises:

- **Logical Function Description** – Implementation-agnostic specification of functionalities in the CSP ecosystem.
- **Logical Functional Grouping** - Common-sense hierarchical grouping (or decomposition) of functionalities into applications.
- **Viewing Map** – The applications are aligned across horizontal layering of the Information Framework (a.k.a. SID) and vertical layering of the Business Process Framework (a.k.a. eTOM) so that the CSP universe is laid in a meaningful view that relates to the other frameworks.
-

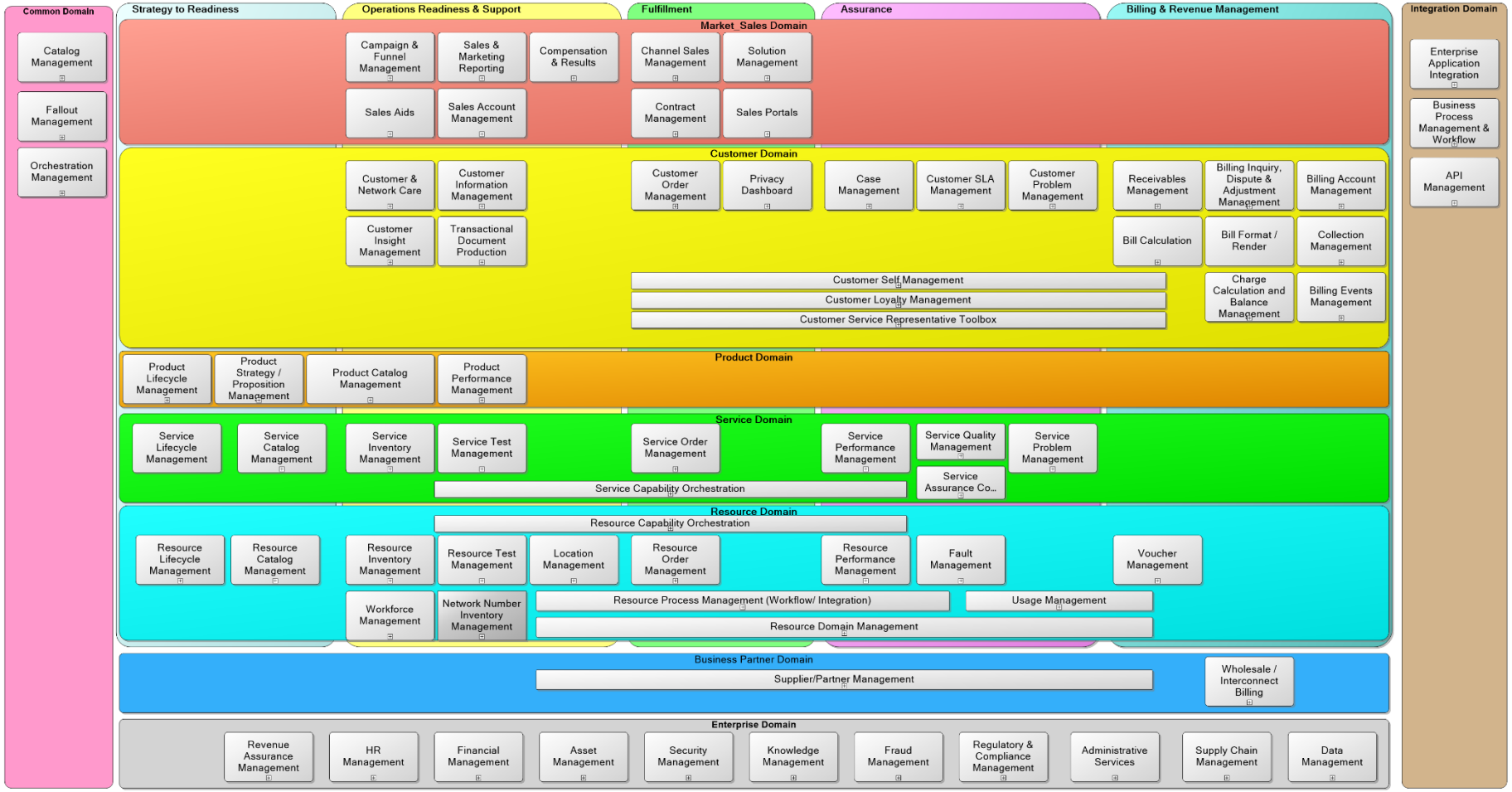

Figure 11-1- The Application Framework (TAM)

11.2 Purpose of the Application Framework

The TM Forum Application Framework is another plane in the Service Provider's ecosystem Enterprise Architecture. It provides a common reference map and language to navigate a complex systems landscape that is typically found in the CSP ecosystem. Where the Business Process Framework (a.k.a. eTOM) provides a frame of reference for *processes* and the Information Framework (a.k.a. SID) provides a frame of reference for *information language*, the Application Framework (a.k.a. TAM) provides a frame of reference for telecom *applications functionalities*.

The Application Framework provides the bridge between the Core Frameworks building blocks (Business Process Framework and Information Framework) and real, deployable, potentially procurable applications by grouping together functionalities required to support business processes in the Service Provider (SP) ecosystem.

No document like this can ever be 'right' in the sense that it represents a perfect systems infrastructure. What this document intends to give the industry is a common frame of reference that allows the various players who specify, procure, design and sell operation and business support systems to use common logical function reference architecture.

For detailed usage of the Application Frameworks please refer to document GB929U – "User Guidelines for the Application Framework".

11.3 Scope of the Application Framework

As the Business Process Framework (eTOM) addresses the business processes required to run a service provider business and the Information Framework depicts the business entities information units required for the business process, the Application Framework addresses the logical functions supporting the business processes. As such the scope of the Application Framework logical functions are focused on the management aspects of the business.

The Application Framework depicts the applications that are utilized at the enterprise. In concert with the Business Process Framework the mass of the text is focused on S2R and Operations aspects of a CSP. Since the primary benefit of the Application Framework pertains to computerized systems it is more developed in the Operations area. Additional coverage of the Enterprise domain is included albeit it is of less detail.

It would be noted that the Application Framework is not covering the logical functions that are required to deliver the customer service such as network elements (this would fall under other SDOs such as 3GPP) as the TM Forum ODF is focused on the management aspects.

Figure 10-2 below shows how the domains contained within the Application Framework align with Business Process Framework level one domains/concepts. Whether taking a process, information or application perspective, it is important to be viewing the same set of concepts. The alignment is also a necessary enabler when mapping Business Process Framework processes to Application Framework management areas.

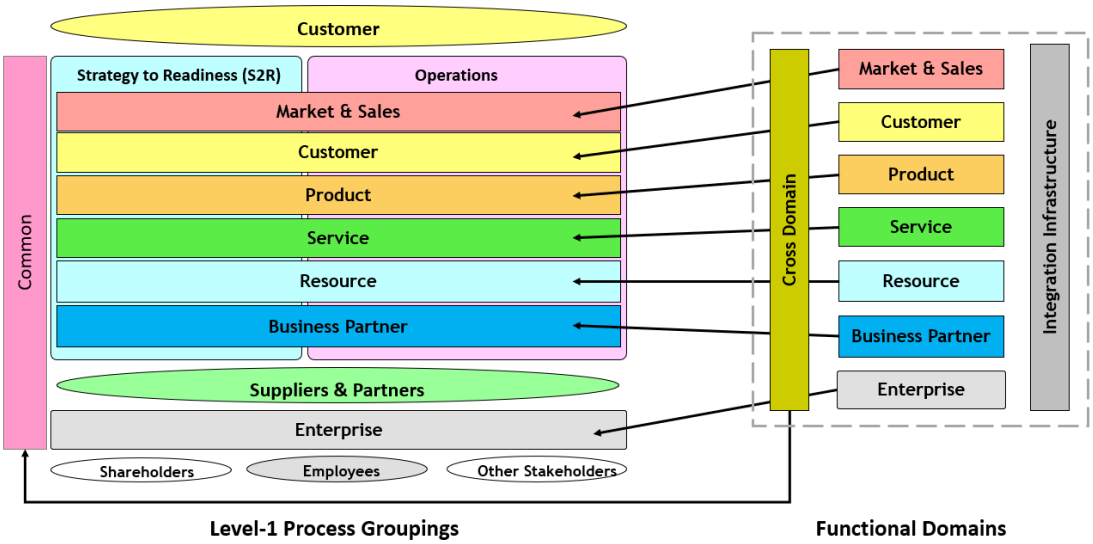

Figure 11-2- Business Process Framework/Application Framework Concepts/Domains

12. Application Framework Concepts

Where possible, Application Framework Concepts have been harmonized with several industry standards including:

- TOGAF 9.2
- ArchiMate 3.0.1
- ITIL v3

12.1 Application

12.1.1 Definition

An Application is an abstract, logical description of related application behavior that has a specific business purpose.

12.1.2 Characteristics

An Application may be decomposed into aggregations of other related Application(s) (i.e., sub-components).

An Application represents an encapsulation of application behavior aligned to implementation structure, which is modular and replaceable.

An Application contains one or more Application Functions. The Application's description in the Application Framework (TAM) contains descriptions of its Application Functions. In addition, the descriptions often frame the application in a process context and describe its business purpose.

An Application encapsulates its behavior and data, and its functionality is only accessible through a set of Application Interfaces.

12.1.3 Examples

Examples of Applications (from the Application Framework (TAM)):

Level 1 Decompositions:

- Customer Order Management
- Privacy Dashboard
- Bill Format / Render
- Usage Management

Level 2 Decompositions:

- Customer Order Orchestration
- Usage Event Processing
- Usage Event Error Management

12.2 Application Function

12.2.1 Definition

An Application Function describes the (software based) automated behavior that can be performed by an Application.

12.2.2 Characteristics

If an Application Function is exposed externally, it is accessed through one or more Application Interfaces.

An Application Function may access Information Framework (SID) Business Entities.

An Application Function produces a result. Ideally, a single type of result is produced. The intention is that an Application Function is defined at a level of granularity that when invoked, the outcome of the Application Function will be accepted by its caller as a complete result.

The granularity level allows only one Application Function for each described function. Reuse of functions in applications is done with references to the Application Function with a unique function identity.

The list of Application Functions at the lowest level of defined computerized functions is referred to as the (Application) Functional Model. The (Application) Functional Model is not intended to be a formal model, but rather to be the functional foundation for possible Applications, Application Models or Application Architectures.

12.2.3 Examples

Examples of Application Functions (from the Application Framework (TAM)):

- Customer Order Storage
- Privacy Consent Agreement
- Charge / Credit Calculation
- Balance Payment
- Voucher Distribution
- Usage Event Collection
- Single Sign-On Access Control

12.3 Application Interface

12.3.1 Definition

An Application Interface represents a point of access where Application Functions are made available to a user (human) or another Application (software).

12.3.2 Characteristics

An Application Interface specifies how the functionality of an Application can be accessed by other elements.

An Application Interface exposes Application Functions to the environment.

An Application Interface may be part of an Application.

12.3.3 Examples

Examples of Application Interfaces:

- Command-Line Interface (CLI)
- Application Programming Interface (API)
- Web Service (WS)

12.4 How Applications Are Identified

12.4.1 Application Definition Methods

12.4.1.1 Top-Down

The top-down approach begins with coarse grain functionality in mind and decomposing those into fine grain functions. It is followed by an affinity analysis that clusters functions. Analysis and refinement of the resulting clusters results in a set of well-defined logical applications.

12.4.1.2 Bottom-Up

The bottom-up approach examines existing systems and identifies the logical functional groupings they contain. These groupings are used to amalgamate and / or refine the logical groupings of application.

12.4.1.3 Combined Approach

In practice, both methods can be interleaved (e.g., a system architect with optimizing an existing system or start with an abstract target architecture, decomposing/grouping functionalities back and forth, aiming towards a refined cluster of well-defined functions).

12.4.2 Prime Identification Guidelines

Given that an application is a collection of functionalities, it makes sense to cluster functionalities based on a theme. The clustering themes of the Application Framework are similar to those customarily used in SOA. There are three basic themes:

- **Task-Centric:** a collection of functionalities that support a specific task; typically, a business process element in Business Process Framework. e.g., Fallout Management.

- **Entity-Centric:** a grouping based on a specific entity; typically, a business entity identified by Information Framework e.g., Service Order Management.
- **Utility-Centric:** when a functionality pattern is being recognized or a functionality is repeated across the application map a generalized / normalized application is being advised e.g., Transactional Document Production.

12.4.3 Practical Identification Guidelines

Practically, the Application Framework (TAM) represents an industry-agreed reference architecture that has been evolved following market and IT trends. The following principles shaped the development of the Application Framework (TAM):

12.4.3.1 Commercial Availability / Value

A basic measurement to identify an application can be the availability of similar products in the market. If there are available two or more products with similar functionality, it is probably an indication for a reasonable clustering of functionality thus justifying the existence of an application in the Application Framework (TAM). However, this cannot be a prerequisite in becoming an Application Framework (TAM) application since it would position the Application Framework (TAM) as a follower and not as a target reference framework. On the other hand, it is expected that COTS products will be available addressing this application. Hence, an application in the framework shall have a sellable added value in the Communication Service Providers market[2]. The Application Framework (TAM) should refrain from defining applications that have no commercial value associated with their productization.

12.4.3.2 IT Best Practices

IT Best Practices tend to drive architectures that affect application grouping. For example: A tiered architecture that separates back-end and front-end applications would be reflected in defining the functionality of an application.

12.4.3.3 Normalization / Reusability

Whenever the same functionality is being listed as part of two distinct applications, the functionality should be extracted from all occurrences into a self-contained application. The new application would expose a business service for this functionality. The original applications would consume this newly established service. The consuming applications would typically invoke this service for the purpose of providing its intended functionality. This practice is being suggested in order to streamline the Application Framework and minimize overlap. For example, a customer order is viewed in a number of places in the document. An order is being captured in the various Channel Sales as well as in the Customer Order Management Application.

12.4.3.4 Self-Containment

It is expected that an application will represent a coarse-grained functionality collection that should in most instances be able to run on its own. I.e., it will minimize the number of consumed business services that are required to fulfill the application functionality. Note that the reusability guidance (described above) necessitates by definition the use of external services. E.g., A Bill Calculation application will need to rely upon an external Tax Calculation application.

[2] It may have a value in the software components market, but this is out of the intention of the Application Framework (TAM).

12.5 How Applications Are Grouped

Once we have a set of fine-grain applications, those applications are grouped based on several criteria. This section describes the various grouping options which are used throughout the Application Framework (TAM) document. The various applications are grouped according to any of these methods.

12.5.1 Invocation Context

Applications with tight invocation relationships are likely to be grouped together in a higher-level application. For example: if each of applications A and B provides business services consumed by application C, it is an indication for grouping.

Another example is when shared functionality is consumed by a set of applications. For example, B0 is sharing the same functionality in B1 B2 etc. The Bx applications are subject to grouping into a single application group B As in the common applications of Channel sales Management such as create and promote leads, Sales quotation etc. This type of grouping would reduce the number of overall interactions between applications by creating a self-contained coarse-grained application. See Figure 11-1.

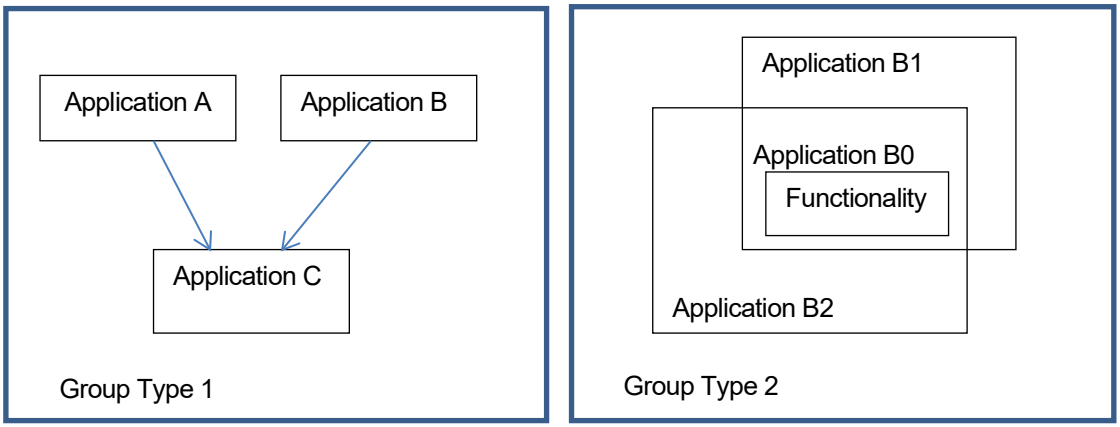

Figure 12-1 – Grouping of Applications

12.5.2 End User

The Application Framework (TAM) takes into consideration the end user of the application. The end user would typically wish to see sibling functionalities required for his/her day to day job to be adjacent. Thus, the end user using the destined product becomes an anchor for grouping the applications together.

12.5.3 Purpose

Another criterion to be used for grouping is commonality of objectives between applications. If several applications are used for sibling purpose, they are likely to be grouped together.

12.5.4 Acting on a Specific Information Framework (SID) Entity

Applications can be grouped via the data they are acting upon. As mentioned in the document, an application automates business processes by using Information Framework (SID) entities. In some cases, a group of functionalities will be related and clustered as an application based on the fact that they are strongly related to data from a specific entity within the Information framework (SID).

12.6 How Applications Are Mapped

One of the aspects provided by the Application Framework (TAM) is a viewing system. The application map approach was to reuse existing classification mechanisms from the existing frameworks (Business Process Framework (eTOM) & Information Framework (SID)) while extending those as necessary.

12.6.1 Embracing Process & Information Frameworks Views

The Application Framework (TAM) adopts the Business Process Framework (eTOM) vertical segments Strategy Management, Capability Delivery, Lifecycle Management (S2R), Operational Support and Readiness, Fulfillment, Assurance and Billing. It also adopts the Information Framework (SID) domain horizontals. The Common domain in Information Framework has been excluded from Application Framework view since it contains mostly general constructs that are used as basis for meaningful Business Entities.

The Application Framework structure maps each application in the S2R and Operations Business Process Framework (eTOM) domains to an intersection of both a horizontal and vertical classification from the Information Framework (SID) and Business Process Framework (eTOM) respectively3.

Some applications may span across several classification segments.

12.6.2 The Cross Domain and its Applications

Typically, an Application Framework (TAM) application is listed under the domain to which its functionality pertains. This taxonomy allows intra-domain (horizontal) application spanning (or grouping). However, there are some applications that span across multiple domains that need a vertical footprint.

The Cross-Domain Section lists applications that pertain to multiple Application Framework (TAM) domains. Cross-domain applications are typically created by identifying common functionality between applications across Application Framework (TAM) domains (usually under the same vertical). This analysis is useful in identifying the Utility-Centric business services as described in the Implementation Methodology of the TM Forum Frameworks (GB945M).

A common application can be further specialized in the particular domain for the purpose of adding unique domain functionality. E. g. Catalog Management is a cross domain application and in addition in the Product, Service and Resource domains a subject specific application is described. The Cross-Domain application concept resembles the concept of a base class and a derived class in object-oriented design. Thus, a set of specialized applications (in multiple domains) that are based on the same common application can be productized in various ways.

One option would be to have a unified product that encapsulates the inclusive functionality from the multiple pertaining domains. Another option would be to productize each domain functions in a separate product while encompassing the base functionality depicted in the common application. A third option would be to productize each functional grouping on its own and have the specialized application expose the common functionality by consuming the services exposed by the common application.

12.6.3 Application Integration Infrastructure

The application Integration Infrastructure is needed to complete the view of the CSPs environment, yet not reflected in other Frameworks.

[3] The Supplier / Partner domain (now renamed to Business Partner domain) shall be reworked to complete the mapping.

This class will include applications that are not geared towards business entities, so they will not be viewed in the Information Framework (SID)) nor in business processes, so they will not have a representation in Business Process Framework (eTOM).

Applications in this class will include middleware, communication application as well as business process management, workflow tools and Complex Event Processing.

Future uses of this section may expand into other aspects such as Computer Telephone Integration functionality, etc.

12.7 Naming Conventions

The Application Framework uses a standard structure to name of its applications. All applications at any levels use a noun phrase. e.g., Customer SLA Analysis, Discounts Calculation. The use of a gerund is also acceptable e.g., Customer SLA Reporting. Please note that an Application Function, which is a description of a capability required to perform a specific task, does not adhere to specific format as it embedded currently, but this may change as the concepts around managing Application Functions mature over the next few releases.

12.8 Forward Compatibility

As explained earlier about the Application Framework (TAM) formation, it is subject to the evolution of IT best practices. While the importance of organized evolution is closely considered, no forward compatibly restriction can be endorsed, and future version of the document may detail applications that will not be compliable with the current version.

12.9 Guidelines for Function Decomposition

- In the Application Framework similar application functions may be defined in different domains or applications; such definitions can be distinguished by means of enriched descriptions or reduced to a common definition for all domains.
- Splitting application functions that are too high level
- Improving names and descriptions
- Application functions shall be self-contained, connected to applications only by reference like domain, parent, or origin.
- There shall be no hierarchical connections between application functions.

ANNEX B – CORE FRAMEWORK COMPONENT STATUS DEFINITION

As core Frameworks Components evolve, they go through the following evolutionary stages or statuses:

- Released
- Preliminary
- Draft
- Not Fully Developed

12.10 Released

A core Frameworks Component with a Released Status is:

Complete, i.e., no additions required

Team (maturity level 3) and Forum approved (level 4)

A core Frameworks Component with a Released Status is included as the basis for TM Forum ODF Conformance Certification.

12.11 Preliminary

Preliminary is typical work that is delivered over a series of iterations.

A core Frameworks Component with a Preliminary Status is:

Incomplete, i.e., a deeper study is in-progress to complete the content of the item and it is usable as it is. Some modifications might be done.

ODF Team (maturity level 3) and Forum approved (level 4)

Note that even if a Preliminary component is approved by the ODF Team and the Forum, it won't be included in TM Forum Conformance Certification as it has to be completed.

12.12 Draft

A Core Frameworks Component with a Draft Status is:

Incomplete, i.e., a deeper study is in-progress to complete the content of the item and present it to approval

Not yet ODF Team and Forum approved (maturity level 1 or 2)

Note: A Draft work can't remove or move any existing item and all new items have to be gathered in a new area with a Draft maturity level

12.13 Not Fully Developed

A core Frameworks Component with a not fully developed status is

Empty or almost empty, i.e., no work has started to specify it, but it has been identified as required

In case of almost empty the ODF Team has to review the item and decide if it has to be removed.

12.14 How to specify the Status?

12.14.1 In the Business Process Framework (eTOM)

The items concerned by the Status are:

Domain: applies to everything inside the domain

Process: applies to lower level processes of the specific process

In the Business Process Framework model, the Status is specified as follows:

Released: nothing specific

Preliminary: with a “preliminary” notation on the domain or process

Draft: with a “draft” notation on the domain or process

Not Fully Developed: with a “not fully developed” notation on the domain or process (a field will be added to the model to hold the notation)

In the Business Process Framework Guidebooks, the Status is specified as follows:

Released: nothing specific

Preliminary: with a “preliminary” notation on the domain or process

Draft: Not published

Not Fully Developed: with a “not fully developed”

In the Business Process Framework Map:

Released: black font in a white rectangle

Preliminary: black font in a medium-grey rectangle

Draft: not presented

Not Fully Developed: black font in a dark-grey rectangle

12.14.2 In the Information Framework (SID)

The items concerned by the Status are:

Domain: applies to everything inside the Domain

ABE: applies to everything inside the ABE

BE: applies to all attributes that describe the BE

In the model, the Status is specified as the following:

Released: nothing specific

Preliminary: with a “preliminary” stereotype on the package and entities

Draft: with a “draft” stereotype on the package and entities

Not Fully Developed: with a “not fully developed” stereotype on the package and with at least a description

All the generated models (browse model, HTML, XSD…) contain only the items with a maturity level Released, Preliminary and Not Fully developed

The RSA model contains all items of all Status

In Guidebooks:

Released: nothing specific

Preliminary: with “preliminary” included in the title or section

Draft: does not appear in the guidebook

Not Fully Developed: Only appears in the Concepts and Principles document and are marked as “not fully developed”

In the Information Framework Map:

Released: black font in a white rectangle

Preliminary: black font in a medium-grey rectangle

Draft: not presented

Not Fully Developed: black font in a dark-grey rectangle

12.14.3 In the Functional Framework (FF)

The items concerned by the Status are:

Domain: applies to everything inside the Domain

Sub-Domain Functions: applies to all sub-Domain Functions level functions

In the Functional Framework, in the model the status is specified as the following:

Released: nothing specific

Preliminary: with a “preliminary” notation on the domain or Sub-Domain or function

Draft: with a “draft” notation on the domain or Sub-Domain or function

Not Fully Developed: with a “not fully developed” notation on the domain or Sub-Domain or Function (a field will be added to the model to hold the notation)

In the Functional Framework, in the Guidebooks, the Status is specified as the following:

Released: nothing specific

Preliminary: with a “preliminary” notation on the domain, Sub-Domain, or function

Draft: does not appear in the guidebook

Not Fully developed: with a “not fully developed” in the domain or Sub-Domain or function.

ANNEX C – DEFINITIONS & ACRONYMS

12.15 Definitions and Acronyms

Definitions and acronyms are provided here for common terms concerning Business processes and the activities occurring within them. Common terminology makes it easier for service providers to communicate with their customers, suppliers and partners.

For the Business Process Framework documentation to be understood and used effectively, it is essential that the wording listed here be interpreted using the meanings provided, rather than common usage or specific usage.

12.16 Definitions

12.16.1 ArchiMate®

ArchiMate is an open and independent technical standard from The Open Group that defines an enterprise architecture modeling language to support the description, analysis and visualization of architecture within and across business domains in an unambiguous way.

12.16.2 Complementary Provider

The Complementary Provider provides additional products and services to extend the attractiveness of an enterprise's products and services and scope of its value network. Frequently, these products and services are co-branded.

12.16.3 Core Process

A core process is a collection of processes or tasks. A core process manages the lifecycle of one or more key business entities, such as an offering to the market and its specification, or definition. A core process may decompose into one or more core processes, or into one or more tasks, or into either or both. Thus, the Business Process Framework (eTOM) contains many multi-level core processes.

12.16.4 Customer

The Customer buys products and services from the enterprise or receives free offers or services. A customer may be a person or a business.

12.16.5 Customer Operations Process

A Customer Operations Process is an end-end process that focuses totally on directly supporting customer needs, i.e., Fulfillment, Assurance or Billing. It may be initiated by the customer or be initiated by the service provider.

12.16.6 Digital Services

Digital services include the Internet presence and buy and sell transactions over digital media of e-commerce. It also includes the integration of front- and back-office processes and applications to provide support and bill for the product or service. For the Business Process Framework, it is even more expansive. Digital services

are the integration of traditional business models and approaches with digital services opportunities.

12.16.7 Domain (or ODF Domain)

Historically the ODF has been built up upon a set of 'Foundational Key Concepts', also referred to as domains; they are foundational because they provide the fundamental structure upon which all the ODF components (Business Process Framework, Information Framework and Application Framework) have been developed since their early versions.

A domain is a functional unit which represents a specific management area.

Business Process Framework Domain

In the Business process framework, it comprises a grouping of core processes pertinent to a management area e.g., Market/Sales, Product, Customer, Service, Resource, etc.

Domains are derived from an analysis of Process and have the following properties:

- Contain processes, that encapsulate both operations/behavior and corporate/enterprise information for the domain's business objectives
- Represents a distinguishable share of the enterprise's operating model
- Are closely related (very cohesive) collections of corporate/enterprise processes to fulfil the domain's role in the enterprise

Information Framework Domain

In the Information Framework, a Domain is a collection of Aggregate Business Entities associated with a specific management area. Domains that make up the Information Framework are consistent with Business Process Framework level 0 concepts.

Domains have the following properties:

- Contain Business Entities that encapsulate both operations and corporate/enterprise information
- Are relatively stable collections of corporate/enterprise data and associated operations
- Provide for robustness of corporate/enterprise data formats
- Provide clear responsibility and ownership.

Application Framework Domain

In the Application Framework, domains were originally derived from those in the Information Framework, however they have been adapted to suit the specific context of an application architecture landscape, therefore they are different in number (7 horizontals and 2 verticals) as compared to those in the Information Framework.

In the context of the Application Framework, a domain represents a collection of applications associated with a specific management area. Domains that make up the Application Framework are consistent with the key domains and areas in the Business Process Framework and Information Framework.

12.16.8 e-Commerce

e-commerce is Internet presence and business buying and selling transactions over digital media.

12.16.9 End-to-End Process Flow

End-to-end process flow includes all sub-processes and activities and the sequence required to accomplish the goals of the process. Note that the top-level views of the Business Process Framework do NOT show end-to-end process flow since there is no indication of sequence. The Business Process Framework shows process groupings (see definition below)

The customer process flows recognized in the Business Process Framework are generic sequences of activities that need to occur in the enterprise to achieve desired results. (i.e., they are not specific to an ICSP Business, Product, Channel or Technology).

The Business Process Framework does not direct or constrain the way end-to-end processes can be implemented, rather it only guides the definition of standardized process elements to be used within the enterprise. In this way, process elements can be assembled for a specific service provider's end-to-end process requirement. The Business Process Framework does not mandate a single way the process elements should be organized or sequenced to create end-to-end processes.

12.16.10 End User

The **End User** is the actual user of the Products or Services offered by the Enterprise. The end user consumes the product or service. See also Subscriber below.

12.16.11 Enterprise

Enterprise is used to refer to the overall business, corporation or firm, which is using the Business Process Framework for modeling its business processes. The enterprise is responsible for delivering products and services to the customer. It is assumed that the enterprise is a "Digital i.e., Information or Communications Service Provider" (see ICSP explanation below).

12.16.12 Enterprise Management Domain

This Domain involves the knowledge of Enterprise-level actions and needs and encompasses all Business Management functionalities necessary to support the operational processes, which are critical to run a business in the competitive market. These are sometimes thought of as corporate processes and support. Some functions such as for Enterprise Risk Management (e.g., security and fraud management) have to be more tailored to Information and Communications Service Providers, but most (e.g., Financial Management, Public Relations) are not significantly different for the ICSP industry.

12.16.13 Flow-through

Flow-through is automation across an interface or set of interfaces within an end-to-end process flow.

12.16.14 Hierarchical Process Decomposition

Hierarchical Process Decomposition is the systematic approach to modeling processes above the level suitable to process flow. The Hierarchical Process Decomposition approach allows processes to be developed more modularly. See Levels below.

12.16.15 Information and Communications Service Provider (ICSP)

A service provider enterprise that sells information and/or communications services to other parties.

12.16.16 Intermediary

Within the Value Fabric, the Intermediary performs a function on behalf of the enterprise that is a part of the Enterprise's operational requirements. Intermediaries provide products and services that the enterprise either cannot provide itself or chooses not to due to cost and quality considerations. There are typically three categories of intermediaries: sales, fulfillment, and information and communication.

This term may be superseded by a more generic term related to party.

12.16.17 ITIL

ITIL (formerly an acronym for Information Technology Infrastructure Library) is a set of detailed practices for IT service management (ITSM) that focuses on aligning IT services with the needs of business.

12.16.18 Levels

The best to way to structure a large amount of content and detail, while still allowing the higher-level views to present a summary view, is to structure the information in multiple Levels, where each Level is decomposed into greater detail at the next lower Level. This is Hierarchical Decomposition.

By having the Business Process Framework structured into multiple Levels it enables users of the framework to align their enterprise framework or their process implementations with the Business Process Framework at different levels e.g., Align at Level 1 and 2 or align at Level 1, 2 and 3.

To summarize how levels are used in the Business Process Framework.

1. **Level 0** The whole Enterprise view (The entire Business Process Framework) as seen with its Process Areas and Domains altogether
2. **Level 1** Domains (horizontal) represent a Level 1 view along with the seven Vertical Process Groupings.
3. **Level 2** All the Process Elements (aka Core Processes, e.g., Order Handling) which populate horizonal domains across the eTOM are Level 2.
4. **Level 3** Process Elements which decompose from Level 2 core processes are Level-3; these can be Core Processes themselves or L3 Tasks.
5. **Level 4** Process Elements which decompose from level-3 process elements are level-4; these can also be Core Processes themselves, or Tasks.
6. **Level 5** Process Elements which decompose from level-4 process elements are Level 5; these could also be Core Processes (exceptions) or Tasks.

7. **Level 6** Process elements are rarely decomposed into level 6 elements, but a few examples of these exist in the Framework.
8. **Level 7** Process elements are rarely decomposed into level 7 elements, but a few examples of these may exist in the Framework.

12.16.19 Offer

An offer is an aggregation or bundling of Products or Services for sale to a Customer.

12.16.20 Outsourcing

Outsourcing is when an enterprise contracts out one or more of its internal processes and/or functions out to an outside company. Outsourcing moves enterprise resources to an outside enterprise and keeps a retained capability to manage the relationship with the outsourced processes.

12.16.21 Out-tasking

Out-tasking is when an enterprise contracts with an outside enterprise to provide a process, function or capability without transfer of resource. The enterprise begins using the other enterprise's capabilities directly and electronically.

12.16.22 Partner

A Partner has a stronger profit and risk-sharing component in their Business Agreement with the Enterprise, than a Supplier would have. A Partner generally is more visible to the Enterprise's customer than a Supplier would be. A partner might be part of an alliance, a joint service offering, etc.

12.16.23 Party

Party is used to mean a person, a business, technology, etc. with which a process interacts. The Customer is the most important Party. The Enterprise Management processes interact with Government, Regulators, Competitors, Media, Shareholders, the Public, Unions and Lobby groups. The Supplier and Partner Management Processes interact with Dealers, Retailers, Partners, Brokers, Third-Party Providers, Complementary Provider, Financial Provider, Service Suppliers, and Material Suppliers.

An even more generic form, entity is sometimes used instead of Party. Current business models require a greater interdependency between parties to deliver digital services in particular, and this additional complexity may impact future issues of this Framework.

12.16.24 Process (or Business Process)

A set of structured activities or tasks with logical behaviors that produce a specific outcome, service or product.

12.16.25 Process Area

The highest level of an abstract categorization of processes in the eTOM. Historically there were three Process Areas in the eTOM: 1) S2R (Strategy to Readiness), 2) Operations, 3) Enterprise Management. However, since version 15.0 of eTOM, the third Process Area (Enterprise Management) was transformed into a Domain, since then, there are only two Process Areas in eTOM, these are 1) S2R and 2) Operations.

12.16.26 Process Element

Process Elements can also be considered as the building blocks or components, which are used to 'assemble' end-to-end business processes. Therefore, a process element is the highest level of the constructs within the Business Process Framework, which can be used directly by the enterprise. Process elements first become visible when either a functional process grouping, or a process grouping is decomposed into the second level, e.g., Order Handling,

Process elements are modular for potential reuse and independent update and/or replacement.

12.16.27 Process Flow

A *PROCESS FLOW* describes a systematic, sequenced set of functional activities that deliver a specified result. In other words, a *PROCESS FLOW* is a sequence of related activities or tasks required to deliver results or outputs.

12.16.28 Process Grouping

The top-level view of the Business Process Framework shows process groupings. At this level of the process framework, flow is not appropriate. However, these groupings represent processes that have end-to-end results that are key measures for the enterprise.

Also termed as vertical process grouping(s).

12.16.29 Product

Product is what an entity (supplier) offers or provides to another entity (customer). Product may include service, processed material, software or hardware or any combination thereof. A product may be tangible (e.g., goods) or intangible (e.g., concepts) or a combination thereof. However, a product ALWAYS includes a service component.

12.16.30 Resource

Resources represent physical and non-physical components used to construct Services. They are drawn from the Application, Computing and Network domains, and include, for example, Network Elements, software, IT systems, and technology components. Resources may be virtualized, as well as abstract.

12.16.31 Service

Services are developed by a service provider for sale within Products. The same service may be included in multiple products, packaged differently, with different pricing, etc.

12.16.32 Service Provider (SP)

A provider or otherwise augmenter of value in a value fabric. The distinction between service provider types based on technology is fading as Service providers increasingly compete with service providers with a wildly different technology deployed. An example of this is Digital content provider Netflix transforming the Video store industry.

12.16.33 Step (or Process Step)

A step represents the lowest granularity of activities which taken together make up a lowest level task. A step is usually performed by a single functional entity (user, application or technology component). Alternatively, a step can be defined as a conceptual set of behaviors bound by the scope of a process that, each time it is executed, leads to a single change of inputs (form or state) into a single specified output. Each step is a unit of work normally performed within the constraints of a set of rules by one or more actors in a role, which are engaged in changing the state of one or more resources or enterprise objects to create a single desired output.

12.16.34 Subscriber

The Subscriber is responsible for concluding contracts for the services subscribed to and for paying for these services.

12.16.35 Supplier

Suppliers interact with the Enterprise in providing goods and services, which are assembled by the Enterprise in order to deliver its products and services to the Customer.

12.16.36 Supply Chain

'Supply Chain' refers to entities and processes (including those external to the Enterprise) that are used to supply goods and services needed to deliver products and services to customers.

12.16.37 Swim Lane

A way of depicting process flow in two dimensions by showing sequence horizontally and different actors or process types vertically. Using swim lanes to depict process flow allows for better process design in better end-to-end flow, better flow-through and better visibility of customer interactions in the process.

12.16.38 Task (or Process Task)

A task is a process element that results from the decomposition of either a core process or another higher granularity task. A task typically manages a single stage in the lifecycle of a key business entity, e.g., an offering. The naming guideline for tasks is to begin with an active verb followed at some point by the name of the key business entity. Note that each word in the name of a process typically begins with a capital letter. Most tasks decompose into one more level of tasks. This next level of tasks often represents the steps taken to complete the task. tasks appear at any level from Level-3 decomposition (below core processes) and beyond. Level 4 tasks and beyond can either be used to create process flows or decompose further.

12.16.39 The Open Group Architecture Framework (TOGAF®)

The Open Group Architecture Framework (TOGAF) is a framework for enterprise architecture that provides an approach for designing, planning, implementing, and governing an enterprise information technology architecture. TOGAF is a high-level approach to design. It is typically modeled at four levels: Business, Application, Data, and Technology. It relies heavily on modularization, standardization, and already existing, proven technologies and products.

12.16.40 Third Party Service Provider

The **Third-Party Service Provider** provides services to the enterprise for integration or bundling as an offer from the enterprise to the Customer. Third party service providers are part of an enterprise's seamless offer. In contrast, a complementary service provider is visible in the offer to the enterprise's customer, including having customer interaction.

12.16.41 TMN (Telecommunications Management Network)

The Telecommunications Management Network (TMN) Model was developed to support the management requirements of PTOs (Public Telecommunication Operators) to plan, provision, install, maintain, operate and administer telecommunication networks and services. As the communications industry has evolved, use of TMN also evolved and it has influenced the way to think logically about how the business of a service provider is managed. The TMN layered model comprises horizontal business, service, and network management layers over network hardware and software resources, and vertical overlapping layers of Fault, Configuration, Accounting, Performance and Security (FCAPS) management functional areas. The latter should not be considered as strictly divided "silos" of management functions, but inter-related areas of functionality needed to manage networks and services. Indeed, ITU-T Recommendations M.3200 and M.3400 define a matrix of management services and management function sets (groups of management functions), which in turn are used to define more detailed Recommendations on specific management functions.

This influence is diminishing as the industry moves to compete in more spheres, particularly the digital services arena.

12.16.42 Total Enterprise Process View

The Total Enterprise Process View Includes all business processes within the Enterprise. In the Business Process Framework, the Total Enterprise Process View has traditionally been referred to as Level 0, since it includes all Level 1 process groupings or domains.

12.16.43 Unified Modeling Language (UML®)

The Unified Modeling Language (UML®) is a general-purpose, developmental, modeling language in the field of software engineering that is intended to provide a standard way to visualize the design of a system. UML is maintained by the Object Management Group.

12.16.44 User

See End User above.

12.16.45 Value Fabric

The enterprise as a participant in a value fabric is a key concept of e-business. The value fabric is the collaboration of the enterprise, its suppliers, complementary providers and intermediaries with the customer to deliver value to the customer and provide benefit to all the players in the value fabric. Digital services success and, therefore part of the definition of a value fabric, is that the value fabric works almost as a virtually integrated enterprise to serve the customer.

12.16.46 Vendor

Synonymous with Supplier above.

12.17 Acronyms

ABE	Aggregate Business Entity
B2B	Business to Business
B2B2X	Business to Business to Any Party
BE	Business Entity
BM&A	Brand Management, Market Research & Advertising
BPSS	Business Process Specification Schema
BSS	Business Support System
COTS	Commercial Off-the-shelf
CRM	Customer Relationship Management
CSP	Communications Service Provider
DRS&F	Disaster Recovery, Security and Fraud Management
E2E	End-to-end
ebXML	Electronic Business Extensible Markup Language
EDI	Electronic Data Interchange
EM	Enterprise Management
EQPIA	Enterprise Quality Management, Process & IT Planning & Architecture
eTOM	enhanced Telecom Operations Map (now Business Process Framework)
F&AM	Financial & Asset Management
FAB	Fulfillment, Assurance and Billing
FCAPS	Fault, Configuration, Accounting, Performance and Security
HTML	Hyper Text Markup Language
ICT	Information and Communications Technology
ILM	Capability Delivery
IP	Internet Protocol
ISP	Internet Service Provider
IT	Information Technology
ITIL	Information Technology Infrastructure Library
JSON	JavaScript Object Notation
KPI	Key Performance Indicator
KQI	Key Quality Indicator
NGOSS	New Generation Operations Systems and Software
NMF	Network Management Forum (predecessor of TM Forum)
OAGIS	Open Applications Group Integration Specification

OASIS	Organization for the Advancement of Structured Information Standards
OPS	Operations
OR&S	Operations Readiness & Support
OSS	Operations Support System
PaDIOM	Partner, Design, Integrate, Operate and Monetize
PIP	Partner Interface Process
LM	Lifecycle Management
QoS	Quality of Service
R&DTA	Resource & Development, Technology Acquisition
RFP	Request for Proposal
RNIF	RosettaNet Implementation Framework
RSA	IBM's Rational Software Architect
S&EP	Strategic & Enterprise Planning
S&ER	Stakeholder & External Relations
S/P	Supplier/Partner (superseded by Business Partner)
SC	Strategy Management
SDO	Standards Development Organization
SID	Shared Information & Data Model
S2R	Strategy, Infrastructure and Product
SLA	Service Level Agreement
SOA	Service Oriented Architecture
SP	Service Provider (see also ICSP)
TAM	Telecom Application Map (now Application Framework)
TM Forum	TM Forum (Transformation and Monetization Forum) (see also TMF)
TMF	TM Forum (Transformation and Monetization Forum) (see also TM Forum)
TMN	Telecommunications Management Network
TOGAF	The Open Group Architecture Framework
TOM	Telecom Operations Map
UML	Unified Modeling Language
UN/CEFACT	United Nations Center for Trade Facilitation and Electronic Business
VC-MC	Value Chain Market Center
W3C	World Wide Web Consortium
XML	Extensible Markup Language
XSD	XML Schema Definition

13. Administrative Appendix

13.1 About this document

This is a TM Forum Guidebook. The guidebook format is used when:

The document lays out a 'core' part of TM Forum's approach to automating business processes. Such guidebooks would include the Telecom Operations Map and the Technology Integration Map, but not the detailed specifications that are developed in support of the approach.

Information about TM Forum policy, goals or programs is provided, such as the Strategic Plan or Operating Plan.

Information about the marketplace is provided, as in the report on the size of the OSS market.

13.2 Document History

13.2.1 Version History

Version Number	Date Modified	Modified by:	Description of changes
15.5.0	Nov 2015	Frameworx Team (Editor: Alfred J. Anaya)	Initial issue Ongoing merging of Frameworx Concepts & Principles documents from eTOM, SID and TAM
15.5.1	Nov 2015	Alicja Kawecki	Updated cover, minor formatting/cosmetic fixes prior to publishing
15.5.2	Apr 2016	Alfred Anaya	Updated corrected eTOM L2 view with missing processes in the resource domain. Updated slightly the Acronyms section.
16.0 (DRAFT)	Apr 2016	Alfred Anaya	Inserted SID/eTOM mapping section and updated fields and related information accordingly
16.0.1	8 Jun 2016	Alicja Kawecki	Updated cover, header; minor cosmetic edits prior to publication for Fx16
16.5.0	Nov 2016	Avi Talmor	Updated for Rel 16.5
16.5.1	23 Nov 2016	Alicja Kawecki	Minor cosmetic edits prior to publication for Fx16.5
17.5.0	Nov 2017	Avi Talmor	Errata and spelling fixes
17.5.1	09 Jan 2018	Adrienne Walcott	Formatting/style edits prior to publishing
18.0.0	June 2018	Andrew Greff	Updated / added definitions:

Version Number	Date Modified	Modified by:	Description of changes
			• Application • Application Function • Application Interface Removed definition: • Business Service (as per Frameworx workgroup decision) Added Annex A Definitions / Acronyms / Definitions: • ArchiMate • TOGAF • UML Formatting: • Defined repeating headers on all tables Updated diagrams: • 6-5 eTOM • 10-1 TAM Updated Section 11: • Merged 11.11 Definitions and 11.12 Application Functions in the Application Framework into Application Function
18.0.1	June 2018	Alfred Anaya-Dubernard	Updated the following • Vertical Process Groupings • Process Areas and Enterprise Management • Common Processes & Patterns • References to Supplier/Partner Domain • Process Descriptions • Process Flow Diagrams (legacy) • Formatting to A4 size
18.0.2	06-Jul-2018	Adrienne Walcott	Formatting/style edits prior to R18 publishing
18.0.1	24-Sep-2018	Adrienne Walcott	Updated to reflect TM Forum Approved Status
18.5.0	03-Dec-2018	Cécile Ludwichowski	Update SID map and SID / eTOM mapping
18.5.1	05-Mar-2019	Adrienne Walcott	Updated to reflect TM Forum Approved Status
19.0.0	18-Jun-2019	Cécile Ludwichowski	Update Domains name / descriptions and SID/eTOM mapping
19.5.0	02-Dec-2019	Dirk Rejahl	Updated description of addendum structure. Team Approved
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21.0.0	28-May-2021	Avi Talmor	Updated top level diagram

Version Number	Date Modified	Modified by:	Description of changes
21.0.1	12-Jul-2021	Avi Talmor	Updated to reflect comments received during publishing review cycle
21.0.1	26-Jul-2021	Adrienne Walcott	Updated to reflect TM Forum Approved Status
21.5.0	26-Nov-2021	Avi Talmor Kevin Scaggs	Updated eTOM high level diagram, SID high level diagram, removed Frameworx references, and completed minor eTOM section updates.
22.0	02-Jun-2022	Avi Talmor Cecile Ludwichowski A Anaya-Dubernard Adrienne Walcott Kevin Scaggs	Updated all content and structure to align with changes needed to align with ODA, including Functional Framework chapter and deprecate Frameworx, as well as Application Framework.
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13.2.2 Release History

Release Status	Date Modified	Modified by:	Description of changes
15.5.0	Nov 2015	Frameworx Team (Editor: Alfred Anaya-Dubernard)	Initial release of document Ongoing merging of Frameworx Concepts & Principles documents from eTOM, SID and TAM
16.0.0	Apr 2016	Frameworx Team (Editor: Alfred Anaya-Dubernard)	Inserted SID/eTOM mapping section and updated fields and related information accordingly
16.5.0	Nov 2016	Avi Talmor	Updated for Rel 16.5
17.5.0	Nov 2017	Avi Talmor	Errata and spelling fixes
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19.5	02-Dec-2019	Dirk Rejahl	Updated description of addendum structure

Release Status	Date Modified	Modified by:	Description of changes
21.0	8 Jun 2021	Avi Talmor	Updated top level diagram
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21.5	26-Nov-2021	Avi Talmor A. Anaya-Dubernard Kevin Scaggs	Updated eTOM high level diagram, SID high level diagram, removed Frameworx references, and completed minor eTOM section updates.
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22.0	02-Jun-2022	Avi Talmor Cecile Ludwichowski A Anaya-Dubernard Adrienne Walcott Kevin Scaggs	Updated all content and structure to align with changes needed to align with ODA, including Functional Framework chapter and deprecate Frameworx, as well as Application Framework
22.5	09-Dec-2022	Avi Talmor Kevin Scaggs	Updates to eTOM, Functional Framework, and SID high level diagrams

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