

Frameworkx Governance Platform Exemplar

*Application Note showing how Frameworkx may be
partitioned and governed in SP transformations*

GB945-GP

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Executive Summary

Overview

This document uses a concept called Governance Platforms, or Platform for short, which has its roots in studies by the MIT Sloan Institute on techniques for aligning IT and business goals, and improving IT agility, that was introduced in GB945-M Framework Implementation Methodology.

Traditionally IT development has been project based and often constrained to specific lines of business resulting in complex fragmented architectures. Whilst Service Oriented Architecture offers the promise of lean and agile IT systems that efficiently support the business, the transformation journey from current practice to Service Oriented Enterprise is a complex endeavor.

Platforms and Governance

A Platform is a black box into which you put all your systems, process and people who perform a specific business function. For example Customer Management could be such a platform. The Platform allows all the complexity of Customer Management to be hidden from the rest of the business by simply defining a set of services that it supports e.g. CreateCustomerProblemRecord. These services, called Business Services in Framework, define the business functions performed by the Platform, the supported service level agreements, and also organizational policy constraints.

This seemingly simple concept has two management governance implications:

- The first is that the management focal point becomes the touch points, or Business Services, between Platforms.
- The second is that as a Platform is a self-contained entity, it can be placed anywhere in the service value chain.

Platforms, as a concept, can be used by SP's to rationalize and transform both their IT Systems, Applications and Organization to common business objectives using, for example, TOGAF® [TOGAF] best practice principles.

GB945-M defines a platform as:

A platform is a grouping of services, people and roles. The key thing about a platform is that **it is a “real” implementable thing. It has managerial significance.** Its definition reflects the focus of an enterprise and its top-level approach to delivering service within the constraints imposed by a specific business model. A platform is a device to manage the complexity of an organization's processes and IT infrastructure.

The current platform examples in GB945-M are not directly linked, or integrated with Framework.

Results

This application note elaborates the concept of Platforms introduced in Framework Solution Methodology GB945-M. It provides:



- A review of available high level examples presented by various TM Forum Members.
- Guidelines for Platforms derived from member examples.
- A complete non-normative exemplar integrated and linked with Framework.
- A baseline for adoption.
- An example to show how a proprietary Platform model can be linked to Framework and the Application Framework Functions in particular.

The linkage to Framework has been achieved through the use of the models held in TM Forum Framework Repository Model which provides a coverage sanity check of how the Platform concept can be used in a practical EA tooling environment.

Next steps

This version is intended as a snapshot to develop the understanding of the relationship between Platforms and Framework and to provide an exemplar Platform proposal to stimulate comment. Indeed other worked examples from members based on practical experiences would be valuable as no example of the use of the Platform Concept is intrinsically better than another.

This proposal needs update as mapping work in the Application Framework team evolves, and also against the material in GB945-M and Business Services [GB942MAP], with the objective of reusing what can be readily accommodated, and updating that which cannot. It should be regarded as living document updated periodically at major Framework releases.

The proposed metamodel relationships for the Platform Concept will need to be reviewed in succeeding Framework releases as the overall Framework metamodel itself evolves.

1 Introduction

Ed Note: This document uses the abbreviated term 'Platform' as shorthand for the full title 'Framework Governance Platform Exemplar'. Where we are describing the concept of Platforms the Term 'Platform Concept' is used.

As part of the Strategic Plan for FY 11-12 a requirement was identified to extend the work introduced on Platforms in GB945M 'TM Forum Solution Frameworks: Implementation Methodology' [GB945-M] and establish the linkage to the Application Framework aka TAM.

This Application Note is the first step to addressing that requirement and is a snapshot of the progress on evolving both the Platform Concept and its relationships with Component Frameworks; and set of exemplar platforms to illustrate the Platform concept and its relationship with Framework as a practical example.

1.1 Overview

Platform Concept

The concept of Platform is derived from work in MIT Sloan Institute [MIT Sloan] as part of a management science approach to:

- Align IT and business objectives,
- Move to reuse of applications,
- Improve the agility with which IT solutions can be constructed and evolved.

Platforms, as a concept, can be used by service providers (SP's) to rationalize and transform both their IT system applications, and organization to common business objectives using, for example Framework and TOGAF® [TOGAF] best practice principles. The term governance was selected to indicate that the Platform boundaries are used by service providers to manage the development of the individual Platforms and to set internal business goals and objectives including benchmarking metrics.

GB945-M defines a Platform as:

A Platform is a grouping of services, people and roles. The key thing about a Platform is that it is a "real" implementable thing. It has managerial significance. Its definition reflects the focus of an enterprise and its top-level approach to delivering service within the constraints imposed by a specific business model. A Platform is a device to manage the complexity of an organization's processes and IT infrastructure.

GB945 (Sec 4.2 pg 28) states:

There is no 'standard' platform architecture. Each enterprise will have its own platform architecture based on the business model under which it operates.

So whilst the Platform Concept and relationships to Component Frameworks elements can be standardized (metamodel), instances of platforms cannot as these



are specific collections or aggregations of standard Framework components. This becomes clear from a number of SP member published examples in Section 2.

The use of platforms leads to two key management Implications:

- The management focal point becomes the touch points, or Business Services, between Platforms. This not only reduces the total number of business services required, it also allows those services to be rapidly strung together to create new end to end business processes in support of changing business needs.
- Since a Platform is a self-contained entity it can be placed anywhere in the service value chain. Thus one may decide to outsource or insource specific platforms as required to support changing business goals.

GB945-M does have some examples of Platforms. However that document does not explicitly link those example platforms to Component Frameworks, but to example Service Sets which are currently undefined in Framework.

Based on a proposal for the metamodel describing the relationship between Platform Concept and Component Frameworks¹ this application note provides a worked example of Platforms that does show how that exemplar is related to Component Framework held in the TM Forum Framework Repository, and to Forum Business Services. An additional mapping to Business Metrics is provisionally added and will be revised upon finalizing the Framework metamodel.

Note this exemplar is not better than other proposals such as those in Section 2 from individual service providers. It simply is a worked example explicitly related to Component Framework, and documented.

Enterprise Architecture Governance

The importance of governance in adopting Framework was clearly illustrated in the presentations forming part of a webinar that was held 31st January 2012 on 'Enterprise Architecture Transformation' and Framework aimed at Tier 2/3 service providers.

For those wish to hear the webinar the replay can be heard by registering at:

<https://www1.gotomeeting.com/register/908226872>

Both in the invited SP speakers' presentations, and in the polls held within in this webinar, there was strong support (~80%) for Governance being an important issue for Enterprise Architecture (EA) transformation; and the largest voting group strongly supported the need for Platforms >35 %. Subsequently it was discovered however that Platform Concept is simply one important thing needed for SP governance of transformation.

How might the Exemplar Platform be used?

The key objective of this Exemplar Platform is to facilitate service provider adoption of Framework by providing a worked example of the Platform Concept introduced in GB 945M that is explicitly linked to Framework.

¹ A separate activity on Framework Metamodel is in progress and the Platform metamodel was contributed into the Framework Metamodel and it may be necessary to align with Metamodel decisions in a future Framework releases.



Whether the Exemplar Platform is used 'as is', or purely as a reference worked example, is entirely up to individual service providers. Further potential uses by service providers are described in Section 9.

1.2 Document Structure

This document describes how the Platform Concept can be used by service providers to drive transformation especially the governance, financial cost accounting, project management, and benchmarking aspects – as well as the more familiar technical aspects of IT SoA Integration, and Business Services.

1.2.1 Introduction

Executive Summary: Highlights the problem statement being addressed, summarizes the main points from the document, the main results, how the results might be used, the conclusions drawn, and the next steps.

Section 1 **Introduction:**

Describes the purpose of the document to define the concept of Platforms to support service provider transformation, and provide an exemplar that is explicitly linked to Component Frameworks.

Section 2 ***TM Forum Members published platform examples***

This section describes a series of contributions by TM Forum service providers to TM Forum events (Management World and Actions Week) on their high level platforms and the key characteristics of the concept. This gives some practical guidelines on the considerations for defining exemplar Platforms.

Section 3 ***Goals for Platform Concept***

This section describes the background and the key drivers for the Platform Concept in service providers transforming to Service Oriented Enterprise.

Section 4 ***Platform Concept***

This section provides a description of the Platform Concept and relationship to GB945-M, Component Frameworks including Application Framework, Benchmarking Metrics including financial metrics, and organizational governance. It also identifies some general requirements on any exemplar Platform model.

Section 5 ***Exemplar Platform***

This describes the rationale used in create the exemplar Platform; and provides a table of the exemplar Platforms and their core functionality. The full details of the exemplar Platforms are in Annex A.

Section 6 ***Overview of Exemplar Platforms responsibilities***

This section provides an assessment of the relationship between the exemplar Platform and key responsibilities in the eTOM Process verticals and Business Entities in the SID.

Section 7 ***Integrating Exemplar Platform with Component Framework***



The Platform examples described in GB945-M are mapped to the same viewing map vertical and horizontal structures as the exemplar to validate whether the approach is reasonable. It also captures mapping to eTOM and SID to check that the exemplar is reasonably complete.

Section 8 *Capturing exemplar in the Framework Repository*

Describes the assumed metamodel for the Platform Concept and shows how this is used in the Framework Repository Model. It also provides a snapshot mapping between the exemplar Platforms and the Application Framework Application Functions L2.

Section 9 *How Platforms can be used by service providers*

This sets out the set of possible ways in which providers might use the Platform Concept and the exemplar Platform proposal in their own transformation program to facilitate Framework adoption.

Section 10 *Summary*

This summarizes the main results and sets out the next steps.

Section 11 *Annex A: Exemplar Platform detailed descriptions*

Provides a detailed description of the exemplar Platforms covering core responsibilities, functions, organizational scope, metrics and exposed business services.

1.2.2 Issues and Appendices

Appendix A *Terminology, Acronyms and Abbreviations*

Appendix B *References*

Administrative Appendix provides document revision history, acknowledgements for work completed and information about the TM Forum.

2 TM Forum Members' published platform examples

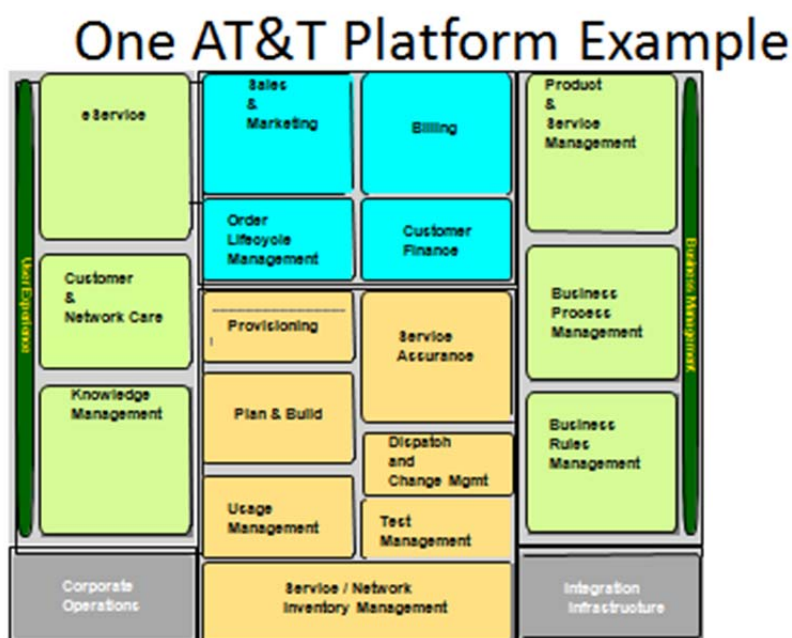
The concept of Governance Platforms may seem unfamiliar but there are published examples of how TM Forum Member companies have used the equivalent ideas to drive their transformation programs. In all cases these examples provide an insight to how each service provider is organizing, or governing, its transformation of systems, people, processes, business goals, metrics and policies.

Caveat 1 Note these examples are based on published information and may not reflect the current view of these members.

Caveat 2 Whilst this information was taken from individual members' presentations of their high level BBS/OSS architecture to the TM Forum, the conclusions derived by comparing them are a result of team efforts, and may not represent the individual views of the members mentioned in this section.

ATT

At the Application Framework meeting at TAW Paris 2011 ATT have presented a Platform model that they have used which is shown below in a simplified form [ATT SoA]:



Presented TAW Paris 2011

Figure 2-1- ATT Example 'Platform' structure

A few observations:

- The choice of Groups reflects the way ATT chooses to organize and manage its transformation.

- Internally ATT do maintain mapping between these Groupings and TM Forum Framework artifacts including the TAM.
- It was reported that when major improvements are required for business purposes these mapping to Framework are used as part of the planning and Identification of possible solution candidates.
- The Grouping are biased more towards the IT Systems scope but is not directly structured in the same way as the Application Framework.

BT

BT published at Dallas 2006 a Matrix Architecture which has governance Matrix Platforms as shown below [BT SoA]:

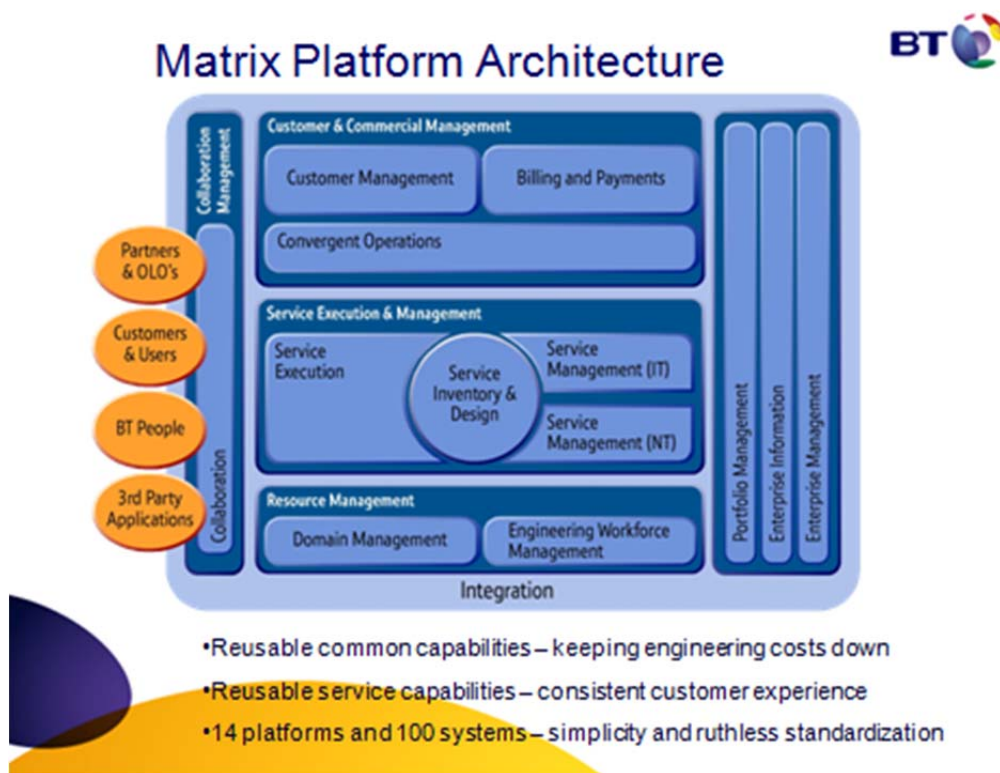


Figure 2-2 BT Example 'Platform' structure

A few observations from the presentation:

- The platforms shown in this slide have specific business goals of rationalization and improved consistent customer service. These goals are broken down and applied as objectives to individual Platforms in the form of metrics.
- BT stated that their Platforms define a Business Capability model (aka Business Functions) with each Platform exposing re-useable business services based on Systems and Organizational resources.

DT

DT presented their transformation architecture at TAW Paris 2011 which is shown below [DT transformation]:

NGSSM Functional Architecture (Operations).

The level 1 NGSSM Functional Architecture organizes the main Architecture Building Blocks (ABBs) close to TMF Framework.

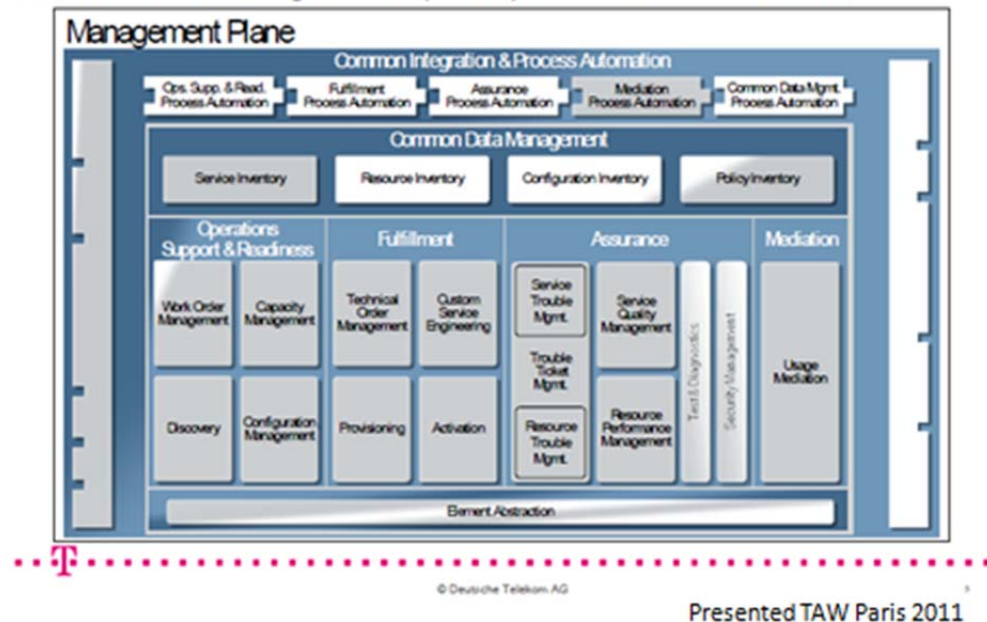


Figure 2-3 DT Example 'Platform' structure

A few observations

- The approach is driven by the need to rationalize systems, and improve end to process supporting Customers.
- The specific structure is inspired by the structures proposed in the Business Process Framework and the Application Framework.

NBN Co MW Asia 2011

NBN Co's OSS/BSS Platforms-based Approach

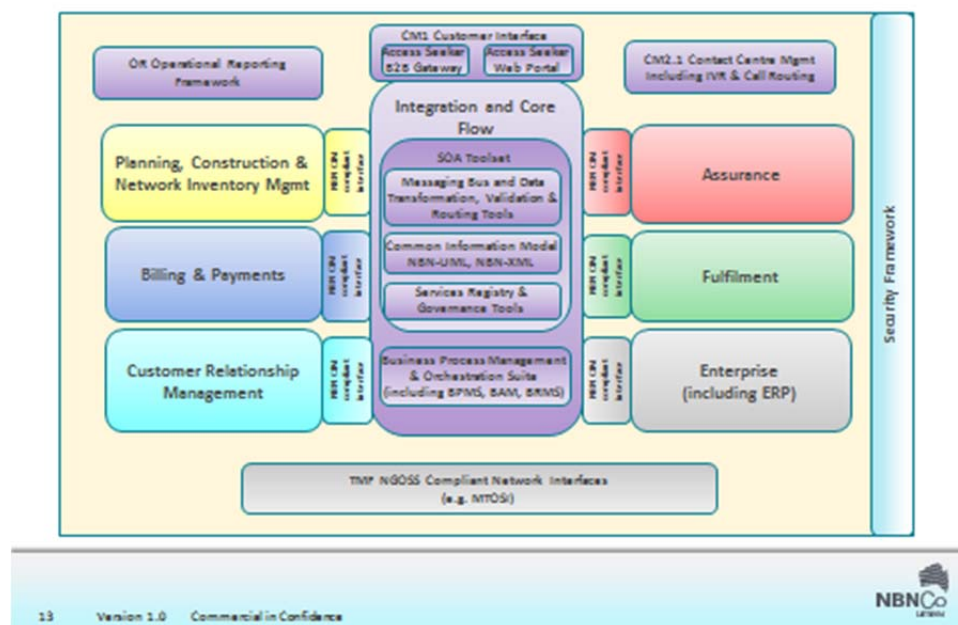


Figure 2-4 NBN Example 'Platform' structure

These slides were presented at MW Asia 2011. "Assurance and Fulfillment for the Australian NBN - How Framework is helping" [NBNC]. A few observations:

- The NBN Co approach is a green field approach based on use of Framework and COTS products.
- The chosen platforms address the need for e2e process efficiency.
- The Platforms define business services for use between Platforms that are under the design control or governance of NBN Co rather than the COTS suppliers. The Platforms can each be developed with different systems integrators whilst leaving the overall design under the control of NBN Co.
- The realizations of each platform can be evolved somewhat independently, and under NBN Co design control.

Conclusions

These examples illustrate that there is not one single platform structure that is being adopted by Major Tier 1 operators. However all of them have an approach of dividing the transformation into a series of domains/platforms which are managed both technically and operationally as part of the transformation to meet business goals and objectives. The platform boundaries are also governance boundaries for the development projects and the boundaries where integration interfaces – Business Services- will be defined by the service provider.

Examination of these and other service provider solutions - not included here - shows that there is also a need to evolve platforms as the business goals and objectives of



the service provider change. For example some patterns can be seen from looking at several service provider transformation proposals:

- Established Service Providers entering new areas are driven by time to market objectives, and tend to build vertical platform solutions for specific new product to avoid dependency on legacy systems.
- Established Service Providers facing slowing growth or increasing competition tend to focus on Customer Experience and efficiency goals which leads to horizontal platform solutions to reduce legacy systems redundancy, and which expose Business Services that support efficient e2e customer facing processes.

3 Goals and Objectives for Platforms Concept

As a part of TM Forum technical and conference activities several service providers have presented their plans for transforming their BSS OSS and network management [BT SoA], [DT Transformation], [FT Transformation], [ATT SoA], [NBNC Co].

There are several striking common drivers for these proposals, described below, and it could be reasonably concluded that Platforms created by SPs should address these goals, as should the exemplar Platform developed in this Application Note.

3.1 SP Transformation

Changes to BSS/OSS are being driven by mostly strategic transformation objectives rather than purely incremental technical changes to IT Systems.

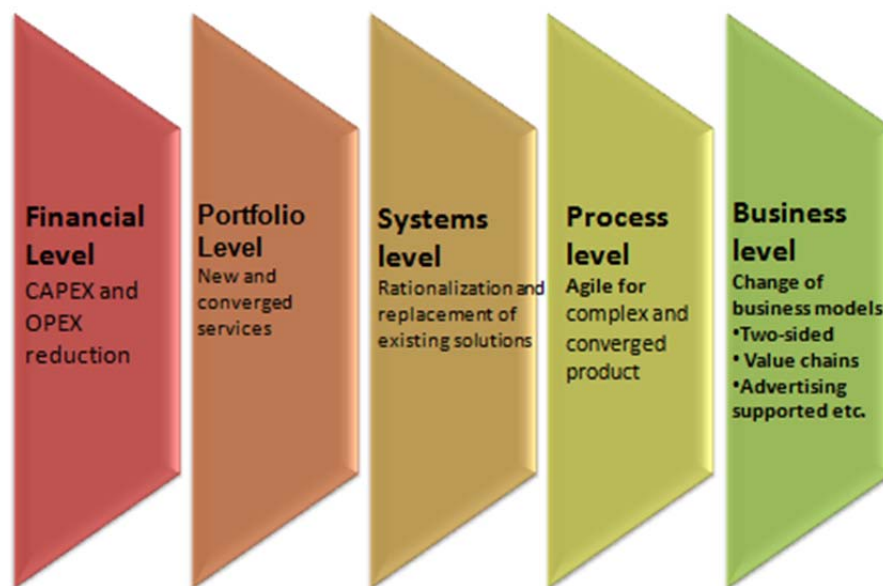


Figure 5 Typical Service Provide transformation goals

The typical goals for transformation are:

- Financial: CAPEX and OPEX reduction for supporting current services.
- Portfolio: Rationalization of service portfolio and replacement of existing solutions for current services. Especially where current solutions are silo solutions for each service type.
- Systems: Creating BSS/OSS suitable for:

- New and converged digital services that can be evolved in an agile and cost effective manner,
- Managing converged networks: especially the move to common IP networking infrastructure, broadband fixed and mobile access, and IMS and SDP solutions.
- Process: Organization and operational processes for complex and converged products and services.
- Supporting mass customized products.
- Business Evolution: Support for new business models amongst traditional and new wave partners.

The important thing is that these transformations address organizational, finance and investment, operational and IT technical issues concurrently. And the achievement of specific business metrics for transformation will condition where and when to invest.

In principle each form of transformation may favor one Platform model over another.

3.2 Enterprise Architecture

Many service providers are looking to on how to apply Enterprise Architecture best practice – for example TOGAF® 9 – to their transformation programs. What they are seeking are:

- the benefits of the structured approach to managing change,
- architecture views of artifacts,
- requirements and change management best practice,

that ensure that technical operational and business objectives are met concurrently.

What they are seeking from the TM Forum is guidance on how to apply best practice from TOGAF 9, ITIL™ and CMMI™ etc. to their transformations, especially when they plan to adopt Framework as the core of their enterprise architecture.

The key matter is that the Framework needs to show how to organize and manage Framework solutions for enterprise architecture which involves: requirements management, and governance – especially over technical and financial decisions.

3.3 Alignment of Business and IT goals

Critical to service providers is the need to have more effective investment in IT that closely matches the evolving business operational needs. This is moving towards:

- The increased use of agile and scrum methods characterized by: interactive development of requirements, supported by prototypes, with concurrent end user involvement.
- Shorter development projects.
- Strong management of requirements from both technical and financial investment viewpoints.



All of this is about organization of projects, and people actions to ensure IT goals remain aligned with business financial and operation goals, and activities.

4 Platform Concept

The definition of Platforms from GB945-M is:

A Platform is a grouping of services, people and roles. The key thing about a platform is that **it is a “real” implementable thing. It has managerial significance.** Its definition reflects the focus of an enterprise and its top-level approach to delivering service within the constraints imposed by a specific business model. A Platform is a device to manage the complexity of an organization’s processes and IT infrastructure.

The phrase ‘management significance’ can be interpreted as management boundaries, where the governance of those boundaries is set by a service provider using technical, financial, and operational criteria.

In GB945-M the following were observed:

- Enterprise Architecture needs to be based on Governance Platforms (aka ‘Domains’ in general IT usage);
- Platforms reflect:
 - IT boundaries: for example specific grouping of vendor application functionality may influence the feasible Platform boundaries e.g. SAP;
 - Business operational and role boundaries: for example organizational separation of planning and design from operations. or separation of customer service from back office network functions;
- Platforms are coarser grained than TAM Application Functions.

GB945 presents a Methodology for implementing the TM Forum Framework and is intended for anyone who is planning to or applying the TM Forum Solutions Framework in the enterprise. The TM Forum Framework Implementation Methodology can be viewed as a guide in progressively moving towards service-orientation architecture based enterprise over a series of evolutionary stages.

Stage 4, derived from the MIT Sloan studies, is focused on reuse and IT agility. The fourth stage [GB945-M] uses the Integration Framework.

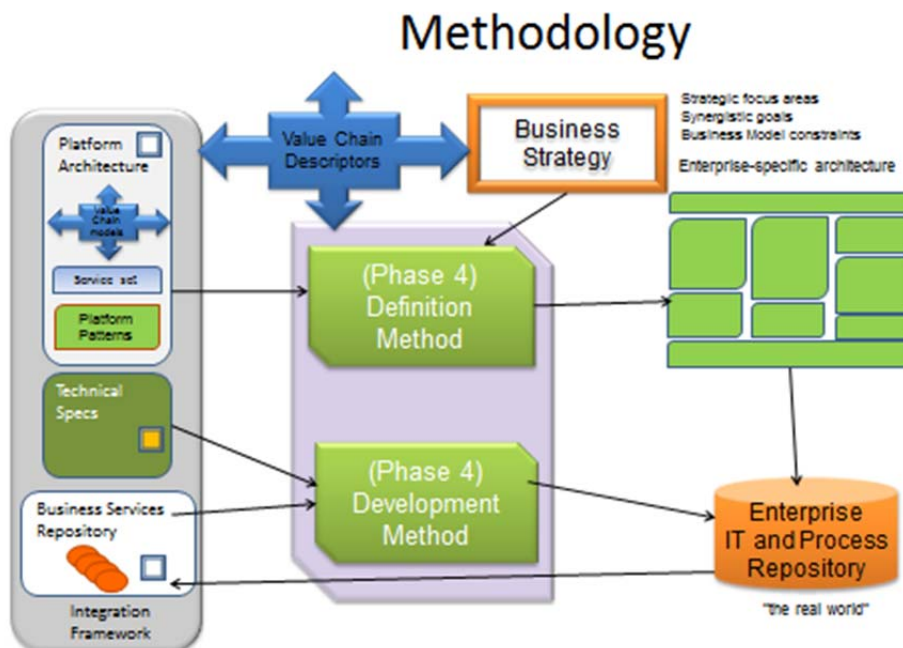


Figure 4-1 and the text below from GB945-M contain a summary of how this fourth Stage works to create agile solutions based on reuse.

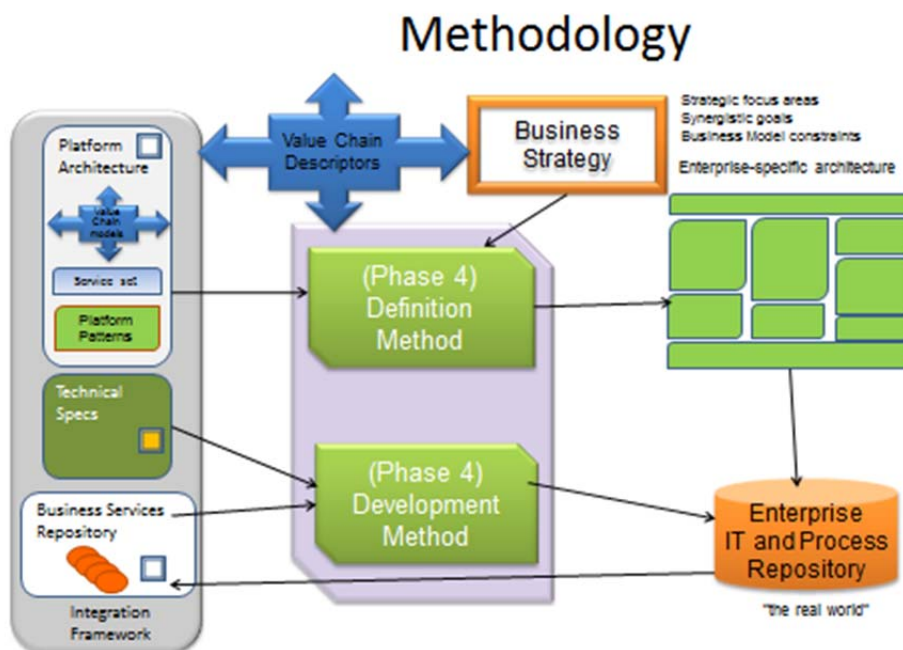


Figure 4-1 – Stage 4 of the Frameworkx Methodology

The methodology in Stage 4 is comprised of two steps:

- First Step –
- Definition and Development. This step uses sets of composite and entity-centric business services shown in the repository on left hand side of the figure to identify the relevant services to the enterprise. Then strategic focus areas and synergistic goals for the enterprise are identified (Business Strategy – top Right hand side).
- Value chain models in the platform pattern templates shown in the left hand side of the figure are used to describe the value chains in which the enterprise participates. It can be modified based on the enterprise actual value chain descriptors. This will give critical groupings of business services and identify platform boundaries shown on the right hand side of the figure. This step needs to identify topological constraints on the organization, such as regulatory decisions to de-construct an organization into lines of business. The next step groups the business services into Platforms using focal points, goals, and constraints from the Business Strategy (shown at the top of the figure) along with platform patterns shown on the left hand side of the figure.
- Lastly, describe the key scenarios in the value chains as orchestrations of the reusable business services.
- The second step in Phase 4 Development Method is used to express solution designs in terms of reusable business services which make up the enterprise's platform architecture using existing SoA services from the repository and technical specifications shown on the left hand side of the figure. There may be a requirement to develop new business services or enhance existing ones using the Technical Specifications. Ideally new and enhanced business services specifications and possibly the reference implementation(s) should be contributed back to the TM Forum for team review and for others to use.

In summary GB945-M describes the methodology by which service providers can:

- Move from ad hoc bespoke IT systems development, to re-useable Platforms creating a Service Oriented Enterprise (SOE);
- That can operate within value chains of providers.

The construction of values chains as illustrated below is an increasingly common way in which new services are delivered and used for outsourcing internal business functions to other organizations and is already the way many new services are delivered by both traditional and new wave operators.

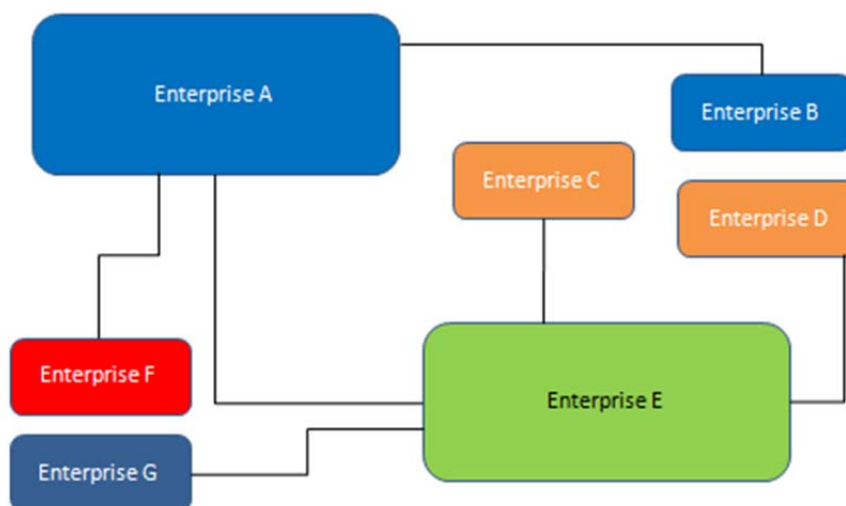


Figure 4-2 – Distributed Value Chain

The adoption of SOE using Platforms facilitates the construction of these value chains to deliver end to end services or to support outsourcing. GB945 shows how SOE platforms exposing Business Service at the boundaries of the enterprise can realize agile value chains and outsourcing.

4.1 Why Platforms are different to AF

Application Framework (AF)

Application Framework is a logical function map supporting the business processes in a Communications Service Provider enterprise. It contains verbal descriptions and hierarchal grouping that are structured based on the Information Frameworks domains and the Business Frameworks vertical grouping. The framework strives to outline the relationship between the processes of the Business Framework, information objects of the Information Framework and Application Framework listed functionalities.

from latest version of [GB929] for Framework 12.

Alternate text:

The Application Framework provides a common reference map and language to navigate a complex systems landscape that is typically found in fixed, mobile and cable operators. Whereas the Business Process Framework® provides a frame of reference for telecom processes and the Information Framework provides a frame of reference for standardized information language, the Application Framework provides a frame of reference for telecom applications.



TM Forum Application Framework (TAM) is a key element of TM Forum [Framework](#). Understanding how your business processes are implemented in your software architecture is paramount to success.

This Framework provides a model for grouping processes and their associated information into recognizable applications. It provides a common language and identification system between buyer and supplier for all application areas.

From <http://www.tmforum.org/ApplicationFramework/2322/home.html>

The Applications Framework captures the system functionality that may be provided as part of a typical commercial product. What influences the Application Framework boundaries are the functionality of current or planned products from vendors.

Platforms

Platform boundaries are decided by service providers and Application Framework boundaries are established by primarily vendor decisions on product functionality.

Clearly Platforms have a relationship to Application Frameworks Application Functions but they are more coarse grained and have a n:m relationship.

Platforms maintain relationships to more than solely systems functionality and boundaries. For example:

- Operationally Platforms maintain relationships to organization, roles, processes and business governance e.g. RACI style relationships.
- Financially Platforms can be used to:
 - relate to functionality identified by industry analysts such as Gartner, Forester, etc. used in procurement qualification,
 - relate to benchmarking and performance metrics,
 - evaluate cost of ownership, and Return on Investment,
- Technically Platforms business functionality is exposed by business service and therefore these business services are the priority for the service providers defining their Platforms. This is likely to be a subset of the business services identified for support of Application Framework applications and functionality.

4.2 Why an exemplar Platform?

Given the boundaries and granularity of platforms are set by service providers it is clear that standardizing Platforms is not purely a technical matter as it has organization impacts.

This application note provides exemplar Platforms to illustrate the Platform Concept and to stimulate additional Platform propositions which could be then used as the basis for solidifying future Platform exemplar proposals.

It is possible after a few iteration cycles, that a consensus for one or more industry preferred Platform exemplars may emerge suited to specific types of business situations and goals.

4.3 Exemplar Platform Guidelines

In formulating the requirements for an Exemplar platform a study was conducted of published examples from major Communication Service Providers/ Multi-Service Operators (MSO). Some general patterns and guidelines were identified.

In support of service providers:

GUIDE 1 Platforms shall support the governance boundaries needed for

- IT systems,
- organization, roles,
- investment and cost assessment including relationship to Business Benchmarking metrics,
- business policies,
- major e2e process stages e.g. Lead to Cash,
- Exposed business services/capabilities including those exposed to other organizations.

GUIDE 2 Platform boundaries need to group business functions or capabilities that make sense to 'C' level managers/ senior manager in the context of strategic transformations. 'It has managerial significance'.

GUIDE 3 Platforms shall be sufficiently detailed that high level strategic processes can be express in terms of concrete business requirements, that might appear on a Business Dashboard e.g. benchmarking metrics covering SLAs, costs, performance, resourcing, score cards, etc.

GUIDE 4 Platforms shall also support the granularity needed for Data Warehousing, Knowledge Management/ data analytics.

GUIDE 5 Platforms shall be coarser grained than Application Framework (TAM). This is simply because TAM is too detailed to manage SP transformation from a governance viewpoint and is not intended to support SP governance.

In relating Platform to current TM Forum Framework artefacts the following requirements were identified:

GUIDE 6 Mapping of Platforms to Framework shall be supported. The most important mapping is to the Application Framework Functions TAM because this allows for mapping to the Business Process Framework, Information Framework, and the Business Services and interfaces defined by the Integration Framework.

GUIDE 7 Mapping Platforms to the TAM may be null since given the maturity of the TAM it possible that Applications and Application Functions have yet to be defined to support some Platform needs.

GUIDE 8 Platforms may offer services to external organizations in a value chain.

Positioning:

GUIDE 9 Naming conventions for Platforms should be readily understood by:

- operational people,
- and those familiar with Framework.



GUIDE 10 Number of Platforms should be between 6-20 in number (organization transformation cannot be managed if the number of entities is too large or to small).

GUIDE 11 Exemplar Platform proposals should be based on SP Members' feedback.

5 Exemplar Platforms

To facilitate presentation of the exemplar at a business level we have a 'viewing map' comprising a simplified set of horizontal and vertical structures similar to those used in the eTOM. These illustrative 'viewing map' verticals and horizontals have deliberately been chosen to be different from those in the Business Process and Information Framework for the following reasons:

- For transformation planning most 'C' levels need a more aggregated business view than is provided by the level of detail in the normative verticals and horizontals within the Business Process and Information Frameworks.
- The worked example shows how any visual structuring of platforms can be mapped formally through the Application Framework to the normative Framework verticals and horizontals.
- Visually it is easier to follow a discussion from a business perspective with a visual pattern rather than just an arbitrary set of unstructured platforms.
- In this exemplar we wished to check that we cover the full scope of the Business Process Framework and Information Framework.

It is not necessary to use vertical and horizontals in developing and mapping Platform to Framework, as they only have visual significance, and no formal semantic content.

Exemplar Platform Structure

In this exemplar Platforms are visually organized across the 'viewing map' horizontals and verticals shown below:

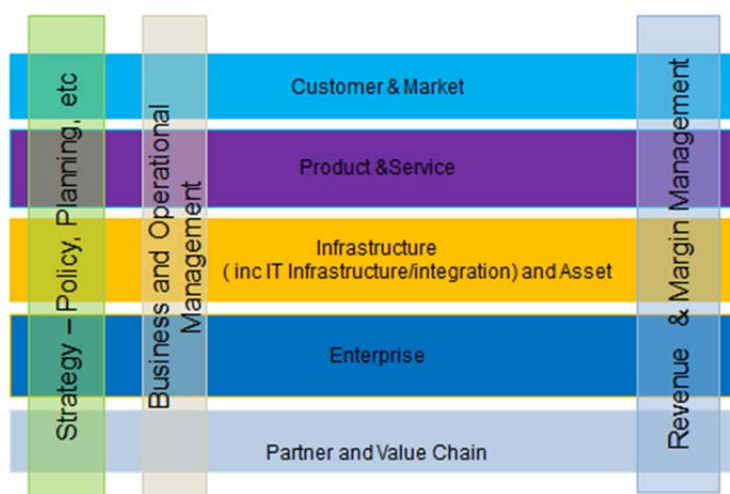


Figure 5-1 Governance Platform illustrative Horizontals and Verticals

The 'verticals' are similar to the eTOM Strategy Infrastructure and Planning and Operations process groups. However we have broken out the Billing vertical in to a 'Revenue and Margin Management' vertical since from a transformation perspective

these are important to transformation, and 'C' level managers who are very focused on revenue and margin related effects.

The 'horizontals' are grouped in a similar way to eTOM but we have explicitly modeled Products with Service so that the horizontals reflect the communities of concern to transformation managers:

- Customer & Markets Community: focus on the customer needs, drivers, how they are changing and above all customer experience for all sectors and segments i.e. 'Who' we sell to. And 'how' we view them as markets.
- Product and Services Community: Focus on 'what' we sell and 'how' they are constructed as re-useable service capabilities.
- Infrastructure Community: Focus on the assets tangible and intangible that are used to deliver the organizations capabilities. 'what' we have, or own, to deliver products to our customers.
- Enterprise: Covers aspects related to people, business policy, security, legal regulatory and financial: 'what' we have to do as an enterprise.
- Partner and Value Chain community: 'who' we work with, 'how' we work with them and 'what' they supply to us.

Exemplar Platforms

Based on the viewing map organizing principles above the following exemplar Platforms are proposed:

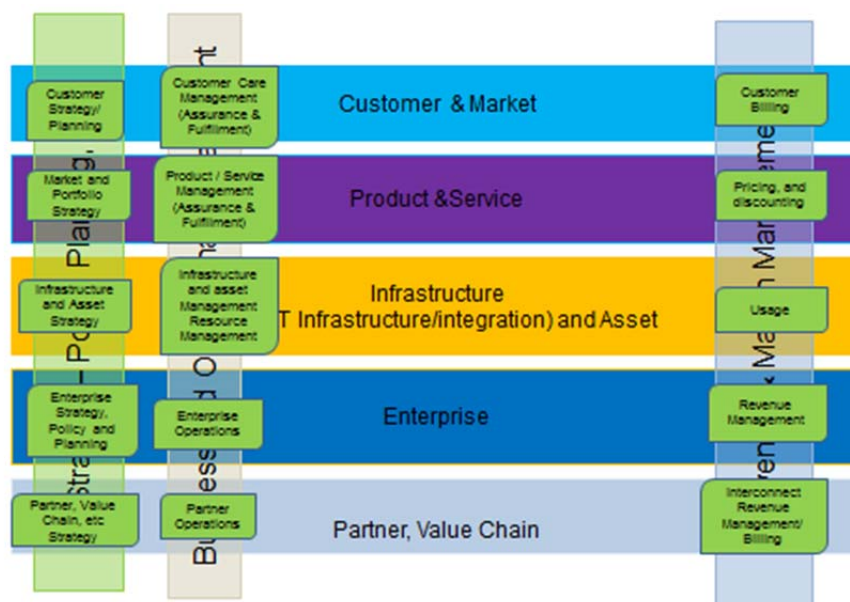


Figure 5-2 Exemplar Platform Proposal

In this simplified example we have a Platform at each intersection. As will be seen later there are some examples of SP Platforms which cover multiple intersections so this is not a rigorous hard and fast principle - simply one adopted in creating the current exemplar. There may be a case for simplifying this exemplar by consolidating some Platforms to cross several intersections. For example the Platforms covering

Partner Value chain horizontals might be consolidated into a single 'Partnering/Collaboration Platform' as below; as well a 'Customer Billing and Pricing' into 'Unified/ Converged Billing Platform'.

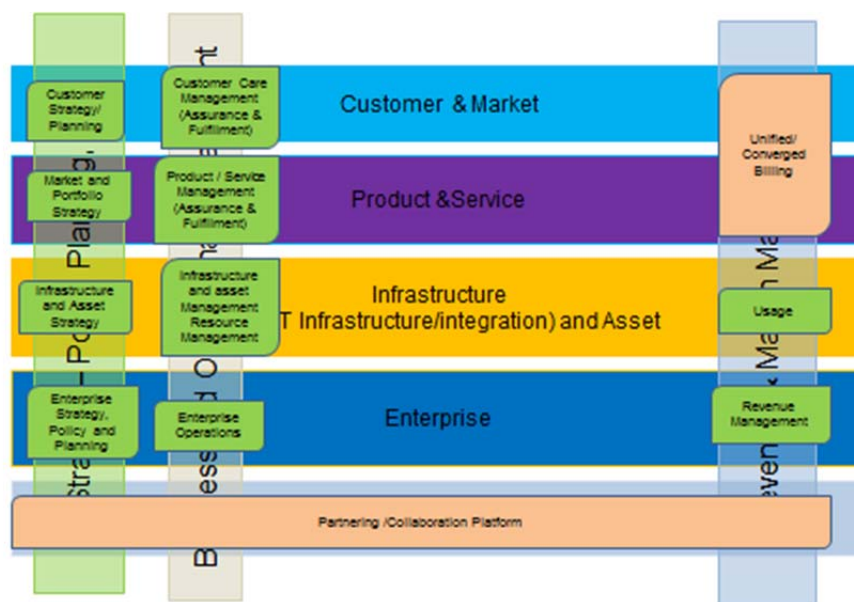


Figure 5-3 Exemplar Platform Proposal alternate

This demonstrates that the choice of Platforms by service providers is based on their own business goals and objectives as described earlier.

5.1 Exemplar Platforms

The following table provides an overview of the responsibilities of each of the exemplar Platforms, and Section 11 Annex A provides detailed description of:

- Core responsibilities,
- Functions,
- Organization,
- Metric,
- Business Services,

that are needed to support each platform.

Platform Group	Exemplar Platform	Core Responsibility
Customer /market Exemplar Platforms	Customer Strategy/Planning	To manage the strategy to address existing customer sectors & segments (markets) in a better way, and to address new customer segments/markets implied by new portfolio Products and Enterprise strategy.

	Customer Care Management (Assurance & Fulfilment)	<p>To manage day to day operational Customer care activities for sales, sales support order management and resolution of service problems and incidents.</p> <p>This is a front office business capability that provides single point of contact for supporting the customer and may require fronting of Customer Billing care.</p> <p>Such platform may be segmented according to product and or market segment but segmentation reduces flexibility and may impede a 360 degree view of the customer.</p>
	Customer Billing	Manage all aspects of customer bills for the full lifecycle of creation validation, dispatch, queries and collections.
Product and Service Exemplar Platforms	Market and Portfolio Strategy	To manage strategic portfolio of product and service offered by the enterprise throughout the full lifecycle of products and services with a focus on creating and retiring products: and services (assumed to be re-useable product features/capabilities including OSS).
	Product / Service Management (Assurance & Fulfilment)	To manage the day to day operational delivery of Product and Services; so as to meet the needs of Customers at the required quality level. This is the back office function behind the customers facing Customer Care Platform.
	Pricing and discounting	To establish and set pricing rules rates for Products and Services with the objective of maximize both revenue and margin. This is where the corporate rules on profit and margin are enforced and re-useable service costs related to acceptable product prices.
Infrastructure Exemplar Platforms	Infrastructure and Asset Strategy	To manage the strategy for investment in assets of all kinds: Networks, Computing platform and applications including OSS, workforce skills, and techniques for integrating those assets to support the customer, product and service needs of the enterprise. This is typically the source of transformation initiatives.
	Infrastructure and asset Management Resource	To manage the day to day operational delivery of infrastructure; so as to meet the needs of Product and Services management at the required quality level. This is a back office function behind the Product and Services management Platform. For regulated infrastructure this platform may be subject to regulatory separation policy prioritization policy and rules about pricing /costing.
	Usage	To take raw measurements of usage information capacity, computing, storage, etc., and create a record for use by the Product and Service Pricing

		and Discounting platform and customer billing.
Enterprise Exemplar Platforms	Enterprise Strategy, Policy and Planning	To manage the establishment of strategy, policy, and plans for the evolution of the Enterprise.
	Enterprise Operations	To manage enterprise wide functions.
	Revenue Management	To manage the revenue and cost of the organization and to provide a focal point for carrying out Revenue Assurance, and Fraud detection.
Partner Exemplar Platforms	Partner, Value Chain, etc. Strategy	To manage the policy and rules for identifying and establish partnering agreements with other Enterprises covering procurement and values chains.
	Partner/Operations	To manage day to day operational Interconnect services including on ramping individual partners, testing value chain operations and supporting order management resolution of service problems and incidents, and capacity and SLA planning.
	Interconnect Revenue Management/(Settlement & Billing	To manage interconnection and value chain settlement and billing processes for interconnection.

Figure 5-4 Exemplar Platform Core Responsibilities

The more detailed descriptions in Annex A cover exemplar Platforms definitions for:

- Platform Names and descriptions,
- Key responsibilities and Functions,
- Relationships with Business Services, Benchmarking Metrics.

The relationships to Application Framework Functions are covered in Section 7.4.

6 Exemplar Platform Viewing Map Cross Checks

The creation of this Platform exemplar included an assessment of the key areas of responsibilities that needed to be covered, and what types of business assets needed to be managed.

This was used as an informal completeness check on the scope of the exemplar Platforms with respect to Business Process and Information Frameworks even though the formal mapping is through the Application Framework².

Completeness Check Business Process Framework (aka eTOM)

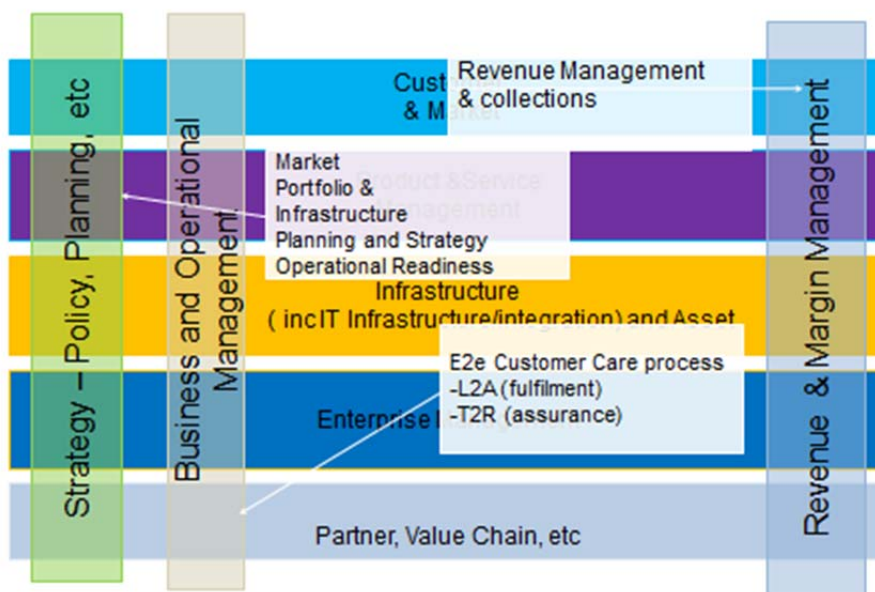


Figure 6-1 Exemplar Platform key Functional Responsibilities

In creating the Exemplar Platform model it was clear that the viewing map verticals need to capture the key enterprise responsibilities for:

- Strategy
- Operations e.g. Lead 2 Activation, Trouble “ Resolve
- And Financial management especially Revenue and Margin

Figure 6-1 shows how the viewing map verticals cover the normative Business Process Framework verticals.

Completeness Check Information Framework (aka SID)

² The Application Framework is currently less mature and has a narrower scope than the Business Process and Information Frameworks which means these cross checks are useful. As the Application Framework extends its scope there will be less need to carry out these informal checks.

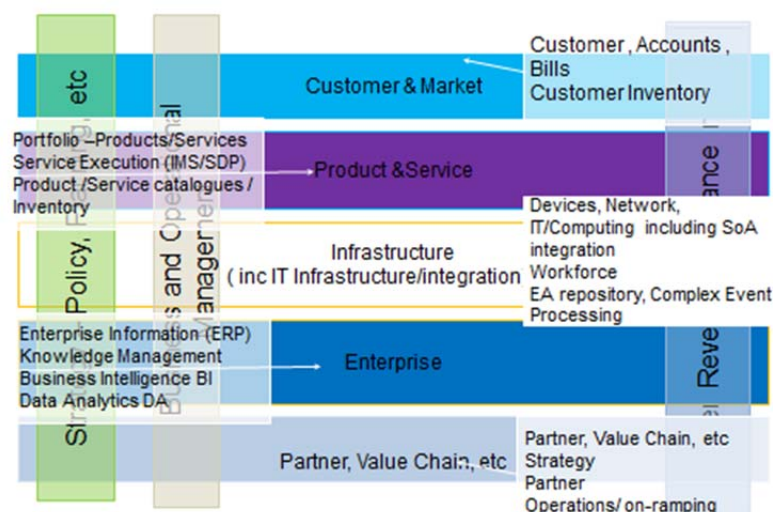


Figure 6-2 Exemplar Platform Key Business Entities

Figure 6-2 shows the how the viewing map horizontal cover key Business Entities.

In reviewing the key business entities (aka business objects) managed by platforms, it was clear that the horizontal layers of the Business Process Framework and Information framework would be helpful. However in selecting the exemplar view map horizontals it was noted that these are candidate Governance boundaries not information model boundaries. The main governance areas for the exemplar were seen to be:

- Customer and Market
- Product and Service
- Enterprise
- And Partners

There is a case for separating out Product and Service from an entity perspective. Two considerations militated against that approach in this example:

- From a governance viewpoint, it is common in service provider to have one organization that combines responsibility for both Products and Services.
- It potentially increases the number of Governance Platforms. However this might be nuanced if some Platforms covered one or more view map intersections³.

Other campers may decide to combine the service domain with the resource and infrastructure as one domain.

³ If Business process and Information Framework horizontal layers were made to be identical It would be easier to do these informal crosschecks

7 Integrating exemplar Platform with Component Frameworks (eTOM, SID, TAM)

In the development process for the exemplar Platform the relationship with other TM Forum material was examined to see whether the exemplar was in fact reasonable with respect to the other Frameworks and the previous work in GB945-M prior to creating the Framework Enterprise Repository model.

7.1 GB945-M Framework Implementation Methodology

GB945-M has within it an example platform model that is very loosely based on a BT model. It is used to show how business services can be discovered and combined into Platforms.

The example used in GB945-M was:

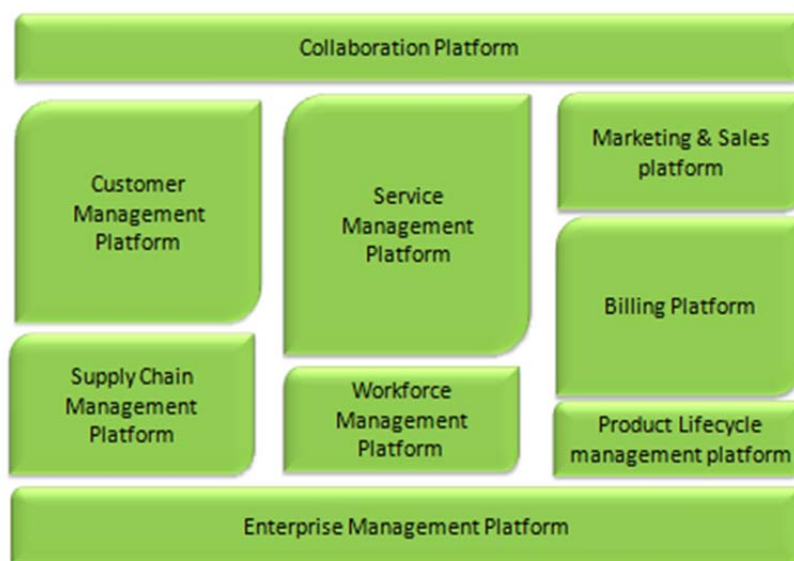


Figure 7-1 GB945-M Platform Example

By examination it was concluded that these GB945-M platforms would map as follows to the exemplar Platform viewing map as follows:

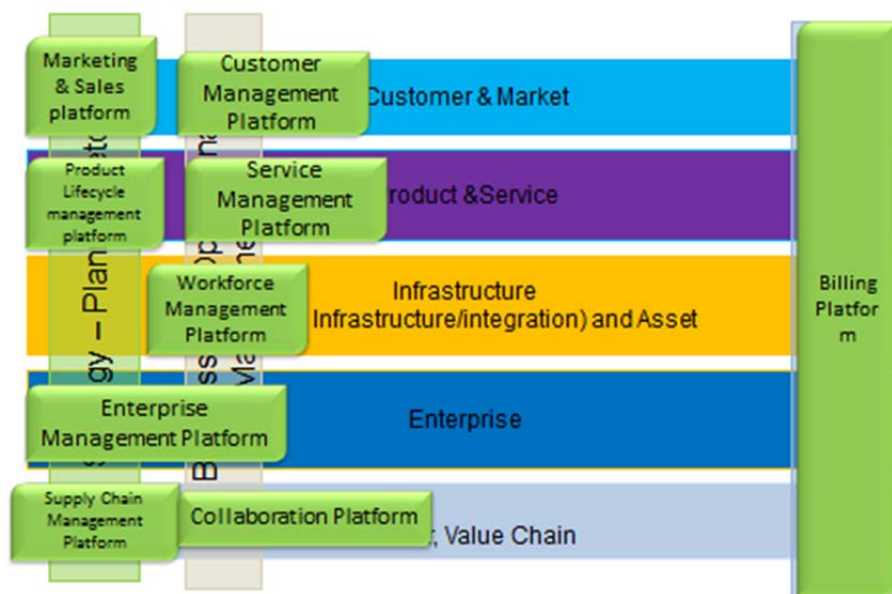


Figure 7-2 GB945-M Platform Example mapped to Exemplar Platforms Viewing Map

By examination one can see that the viewing map alignment is quite good. GB945-M has fewer platforms due to:

- Consolidation of all billing related activities into a single platform;
- Merging Enterprise strategy and operations into one platform;
- Omission of coverage for infrastructure strategy platform functions;
- Incomplete coverage of Infrastructure operations.

7.2 Mapping to Business Process Framework

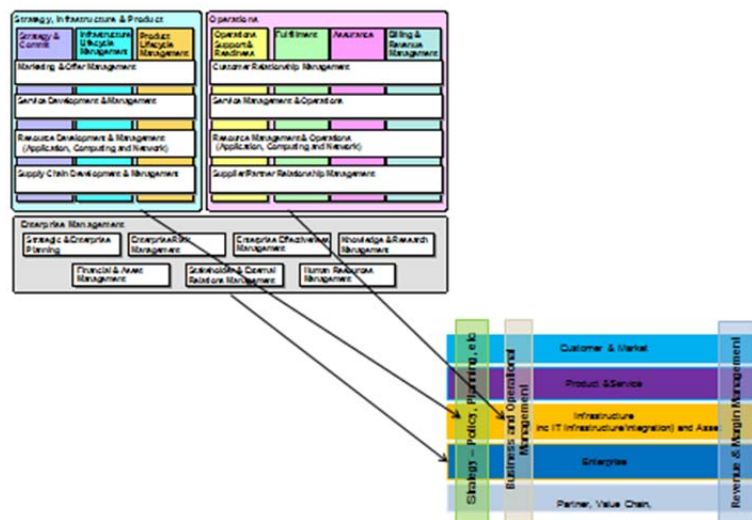


Figure 7-3 eTOM process areas mapped to exemplar viewing map

This figure shows how the eTOM⁴ Process groups have been mapped to the viewing map vertical and horizontal structures of the exemplar Platforms.

What can be noted is:

- eTOM Enterprise process area is covered wholly within the Platform Horizontal Enterprise boundary for governance purposes.
- The Platform Strategy, and Business and operational management vertical viewing map boundaries correspond to the coverage of the eTOM SIP and OPS process groups.
- Not shown for simplicity, but reasonable evident is that the eTOM process horizontals map quite cleanly to the Platform viewing map horizontals, and that the eTOM Billing and Revenue Management map to the Platform Revenue and margin management viewing map vertical.

Note this does not imply that we should make the structure of eTOM Process map exactly the same as the exemplar Platform map, as they serve different purposes- Platforms are about governance boundaries and eTOM is about process decomposition boundaries to support the creation of e2e business process flows. However mapping is recommended to ensure that desired coverage is achieved.

⁴ Term eTOM is used here as more compact than Business Process Framework

7.3 Mapping to Information Framework

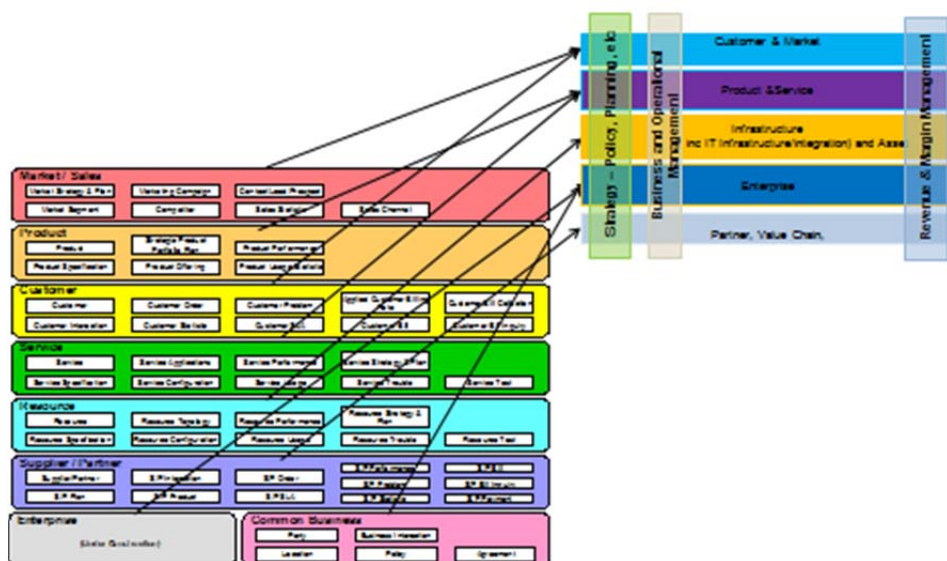


Figure 7-4 Information Framework Domains mapping to viewing map

This figure shows how the Information Framework (aka SID) Domain and Aggregate Business Entities (ABE) have been mapped to the viewing map vertical and horizontal structure of the exemplar Platforms.

What can be noted is:

- The Information Framework Product and Service Domain are consolidated in a single Platform viewing map Horizontal
- Enterprise and Common Business Entities are contained within the Enterprise viewing map boundary i.e. they are created and managed as an enterprise responsibility

Note this does not imply that we should make the structure of Information Framework exactly the same as the Exemplar Platform viewing map as they serve different purpose. Platforms are about governance boundaries, Information Framework is about information modeling: coherence, modularity and isolation boundaries. However mapping is recommended to ensure that desired coverage is achieved.

7.4 Mapping to Application Framework

These mappings are comprehensive captured in the mapping covered in the next section. And have been validated in the Framework Enterprise Repository.

8 Capturing exemplar in the Framework Repository Model

Exemplar Platforms are a group of relationships to Framework artifacts and organizational artifacts and it makes sense to capture those relationships in a model within a tool to validate the Platform Concept.

Currently the Framework Repository Model has captured the eTOM process hierarchy and flows, and separately the TAM i. There is also nascent work on capturing matrix tables for the mapping of relationships amongst eTOM and SID, TAM and eTOM and SID.

It makes sense to capture the relationship between the exemplar Platform and the Component Framework using the same approach of matrix mappings.

The key entities created in the Framework Repository to support Platforms are:

- An exemplar Platform viewing map which acts as the container for the horizontal and vertical structural elements of the exemplar Platform proposal.
- Each Platform has a hierarchical containment and aggregation structure for:
 - Applications (A grouping of TAM Application functionality),
 - Organizations,
 - Operational and Scorecard Management Metrics
 - Business Services (based ultimately on the agreements in the TIP Business Services team).

Note that even though Platforms are not standardized, the applications, business metrics and business services they aggregate, are standardized by Framework. The cooking analogy is that the recipe is not standardized but the ingredients are.

An illustration of this model for Customer Care Management is shown in the next section below.

All the proposed Platforms follow this example Platform model structural pattern shown below.

8.1 Common structure for Exemplar Platforms

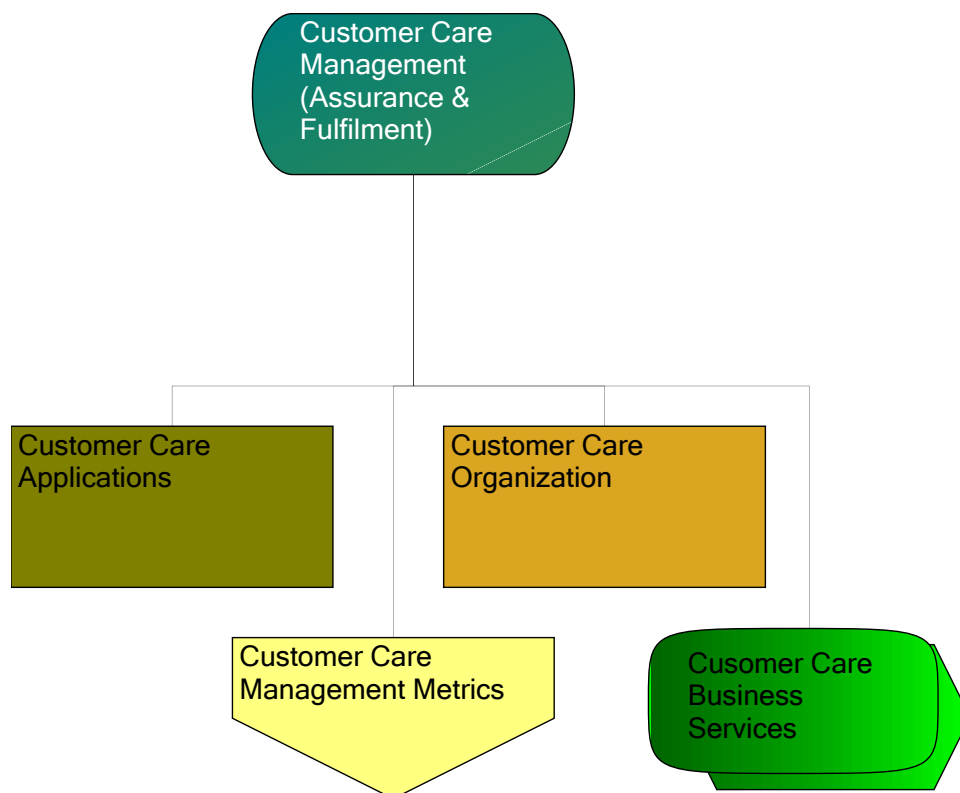


Figure 8-1 Platform aggregation pattern example

Each Platform hierarchical breakdown comprises four components in a pattern illustrated above. For this specific instance Customer Care Management:

- **Customer Care Applications** which holds the relationships between the scope of this Governance Platform and the scope/list of TAM Applications support it. This is achieved through matrix mapping tables to TAM and an extract is shown later in Section 7.4.
- **Customer Care Organization** which is place holder to contain the relationships between the scope of this Governance Platform and individual organizations' structure and assets: people, policy, business rules and processes (through swim-lanes that bind processes to department functions within the Governance platform). This is not addressed in the Exemplar as it is impossible to mandate an organizational structure for a specific member.
- **Customer Care Management Metrics** which holds the relationships between the scope of this Governance Platform and the scope/list of TM Forum Business benchmarking metrics and other industry mandated metrics such as regulatory metrics. This is achieved through matrix mapping tables to TM Forum Business Benchmarking Scaffold metrics.



- **Customer Care Business Services** which holds the relationships between the scope of the exposed business services from this Governance Platform and the scope/list of TM Forum Business Service defined by the Integration Program. This is achieved through matrix mapping tables to the candidate TM Forum Business Services.

8.2 Mapping between exemplar Platforms and Frameworks

The Framework Repository Model support associations or relationships between entities through Matrix tables which are quite similar to spreadsheets.

They have columns and rows and these can be any type of object within the model and may have filters attached so that subsets can be viewed.

Each Matrix table entry has properties and categories so that further filtering on relationships can be made.

One feature is that matrix table can be exported to excel spreadsheet, and it is possible to modify them and import them back into the model thus supporting round trip engineering.

The following tables are a sample snapshot of the mapping between the exemplar Governance Platforms and the Application Framework Functionality definitions (Note this is subject to change and the definitive version is in the Framework Repository as Model Matrix tables).

Because there are over 200 Application Framework Level 3's and we are mapping to 15 exemplar platforms the mapping table is rather large. For this Application Note the mapping table has been broken into four parts shown on the following pages.

A few things can be noted

- This mappings are based on version 4.5 of the Application Framework as that was the available version during the preparation of this note
- There are fewer platforms than level 2 Application Functions
- Some of the Application function have incomplete description and have been allocated on a best effort basis
- Some application functions cover multiple platforms suggesting that the analysis should be at a lower level say level 4 when they are available.

Platforms TAM App Function Level 3	Product/Service Management Applications	Pricing and Discounting Applications	Partner Operations Applications	Market and Portfolio Strategy Applications	Interconnect Revenue Management Billing Applications	Infrastructure and Asset Strategy Applications	Infrastructure and Asset Management Applications	Enterprise Strategy Policy and Planning Applications	Enterprise Operations Applications	Customer Billing Application	Customer Strategy Planning Applications	Customer Care Applications	Usage Applications	Partner, Value Chain etc Strategy Applications	Revenue Management Applications
Resource Order Publication	PSM-ROP														
Service Data Collection	PSM-SDC														
Interaction Management										CBA-IM		CC-IM			
Resource Change Management				MPS-RCM											
Customer Bill Charge Calculation										BA-CBCC					
Mass Market Sales Workflow Management	PSM-MMSW														
Financial Reporting													CC-FR		
Offer Management	PSM-OM														
Build Customer Insight										CSPA-BCI					
Service Order Validation	PSM-SOV														
Collection Policy Definition and Configuration															RMA-CPDC?
Analyze and Manage Customer Risk	PSM-AMCR														
Bill Inquiry										CBA-BI					
Service Availability	PSM-SA														
Service Activation Management	PSM-SAM														
Dispute Management					IRM-DM					CBA-DM					RMA-DM
Customer Order Establishment												CC-COE			
Customer Order Lifecycle Management												CC-COLM			
Adjustments										CBA-ADJ					
Mass Market Sales Reporting & Tracking												CC-MMSR			
Service Order Orchestration	PSM-SOO														
Customer Self Empowered Fulfillment												CC-CSEF			
Campaign Performance Tracking				MPSA-CPT											
Campaign Design				MPSA-CD											
Collection Policy Execution and Monitoring										CBA-CPFM					RMA-CPFM
Customer Self Empowered Assurance												CC-CSEA			
Customer Self Empowered Billing										CBA-CSEB					
A/R Management										BA-ARM					
Personalize Customer Profile												CC-PCP			
Sales Negotiation	PSM-SN														
Direct Sales Force												CC-DSF			
Compensation	PSM-C											CC-DSF			
Campaign Execution & Refinement												CC-CER			
Validate Customer Satisfaction												CC-VCS			
Customer Order Distribution												CC-COD			
Results Reporting	PSM-RR														
Dealers				PO-D								CC-C			
Virtual Network Operators												CC-VNO			
Funnel & Lead Management												CC-PLM			
Telesales												CC-T			
Transactional Document Formatter												CC-TDF			
Transactional Document Generator												CC-TDG			
Document Delivery												CC-DD			
Document Archiving												CC-DA			
Affiliates												CC-A			
Lead Generation												CC-LG			
Commitment Tracking															RM-CT
Service Order Publication	PSM-SOM														

Figure 8-2 Snapshot relationships: exemplar Platforms and Application Framework Functionality (Part 1)

Platforms TAM App Function Level 3	Product/Service Management Applications	Pricing and Discounting Applications	Partner Operations Applications	Market and Portfolio Strategy Applications	Interconnect Revenue Management Billing Applications	Infrastructure and Asset Strategy Applications	Infrastructure and Asset Management Applications	Enterprise Strategy Policy and Planning Applications	Enterprise Operations Applications	Customer Billing Application	Customer Strategy Planning Applications	Customer Care Applications	Usage Applications	Partner, Value Chain etc Strategy Applications	Revenue Management Applications
Customer/Prospect Data Acquisition												CC-CPDA			
Collection Settlement										CB-CS					
Service Design/Assign	PSM-SDA														
Resource Activation	PSM-RA														
Resource Fault & Performance Data Mediation							IAM-RFPM								
OSS Inventory/Data Synchronization Management							IAM-OISM								
Workforce Management (deleted)															
Resource Commissioning & Configuration Management							IAM-RCOM								
Implementation Planning							IAM-IP								
Tactical Planning							IAM-TP								
Capability Specification Management	PSM-CSM						IAM-CSM								
Planning Design Automation							IAM-PDA								
Spares & Warehouse Inventory Management							IAM-SWIM								
Resource Logistics							IAM-RL								
Resource Catalog Management							IAM-RCM								
Strategic Planning				MIS-SP				ESPP-SP		CSP-SP				PVCS-SP	
Resource Order Orchestration							IAM-ROM								
Resource Service Inventory Management							IAM-RSIM								
Resource Service Order Validation							IAM-RSOV								
Resource Design / Assign							IAM-RSOV								
Journalization									CB-J						
Customer Order Publication											CC-COP				
Billing Account Associations Management															RMA-BAAM
Billing Account Configuration Management										CB-BACM					
Discounts Calculation										CB-DC					
Tax Applying										CB-TA					
Manage Bill Cycle Run										CB-MBCR					
Resource Discovery							IAM-RD								
Corporate Sales Workflow Management	?														
Customer Order Orchestration											CC-COO				
Customer Order Tracking & Management											CC-COTM				
Retail Outlets											CC-RO				
Jeopardy Management							IAM-JM								
Customer Sales Portals											CC-CSP				
Solution Management	?														
Campaign Analytics				MPS-CA											
Quotation Engine (Deleted)															
Service Configuration Management	PSM-SCM														
CSR fulfillment												CC-CSF			
CSR assurance												CC-CSA			
CSR billing												CC-CSB			
Internal Sales Portals												CC-ISPI int)			
Contract Management	PSMA-CM														
Indirect Sales Portals												CC-ISP			
Verify Customer Relationship												CC-VCR			
Case Definition and Configuration									EO-CDC						
Case Workflow									EOACW						
Case Correlation & Analysis									EO-CDA						
Case Tracking & Management									EO-CTM						
Case Reporting									EA-CR						

Figure 8-3 Snapshot relationships: exemplar Platforms and Application Framework Functionality (Part 2)

[illegible]

Figure 8-4 Snapshot relationships: exemplar Platforms and Application Framework Functionality (Part 3)

Platforms	Product/Service Management Applications	Pricing and Discounting Applications	Partner Operations Applications	Market and Portfolio Strategy Applications	Interconnect Revenue Management Billing Applications	Infrastructure and Asset Strategy Applications	Infrastructure and Asset Management Applications	Enterprise Strategy Policy and Planning Applications	Enterprise Operations Applications	Customer Billing Application	Customer Strategy Planning Applications	Customer Care Applications	Usage Applications	Partner, Value Chain etc Strategy Applications	Revenue Management Applications
TAM App															
Function Level 3															
Anomaly Management							IAM-AM								
Lawful Interception							IAM-LI								
PKI and Digital Certificates							IAM-PKI								
Business Intelligence (BI)									EO-BI						
Content Management									EO-CM						
Resource Performance Monitoring	PSM-RPM						IAM-RPM								
Resource Performance Analysis							IAM-RPM								
Resource Performance Reporting							IAM-RPR								
Fault Surveillance							IAM-FS								
Fault Correlation & Root Cause Analysis							IAM-FCR								
Fault Correction & Restoration							IAM-FCR								
Fault Reporting & Analytics							IAM-FRA								
Service Problem Reception	PSM-SPR														
Service Problem Monitoring	PSM-SPM														
Service Problem Analysis	PSM-SPA														
Service Problem Correction & Resolution	PSM-SPCR														
Service Problem Tracking & Management	PSM-SPTM														
Service Problem Reporting	PSM-SPR														
Service Performance Monitoring	PSM-SPM														
Service Performance Analysis	PSM-SPA														
Service Performance Reporting	PSM-SPR														
Resource Test Strategy and Policy Management							IAM-RTSP								
Resource Test Lifecycle Management							IAM-RTLM								
Resource Test Command and Control							IAM-RTCC								
Resource Test Services							IAM-RTS								
Service Test Strategy and Policy Management	PSM-STSP														
Service Test Lifecycle Management	PSM-STLM														
Service Test Command and Control	PSM-STCC														
Service Test Services	PSM-STs														
Customer Problem Qualification & Reception												CC-CPQR			
Customer Problem Lifecycle Management												CC-CPLM			
Customer Problem Diagnostics												CC-CPD			
Customer Problem Resolution												CC-CPR			
Customer Problem Verification & Closure												CC-CPVC			
Customer Problem Reporting												CC-CPRp			
Regulatory Accounting									EO-RA						
Work Order Tracking & Management							IAM-WOTM								
Customer SLA Analysis												CC-CSLA			
Customer SLA Reporting												CC-CSLAR			
Service Quality Collection & Monitoring	PSM-SQCM														
Workforce Configuration and Setup						IAS-WCA									
Service Quality Analysis	PSM-SQA														
Charge Calculation										BA-CC					
Workforce Management Reporting							IAM-WMR								
Service Quality Reporting	PSM-SQRp														
Customer SLA Violation Management												CC-CSLAV			
Balance Management										BA-BM					
Customer SLA Issue Reception												CC-CSLAIR			
Work Order Analysis							IAM-WOA								
Work Order Assignment & Dispatch							IAM-WOAD								
Service Quality Model Establishment						IAS-SQME									
Customer SLA Collection	PSM-CSLAC	PO-CSLAC										CC-CSLAC			
Workforce Schedule Management							IAM-WSM								

Figure 8-5 Snapshot relationships: exemplar Platforms and Application Framework Functionality (Part 4)

9 How Platforms can be used by service providers

9.1 Framework Implementation Methodology GB945-M

Members wishing to use the Frameworks Implementation methodology [GB945-M] can use this exemplar Platform proposal as their Platform solution. The major advantages of this proposal are:

- It is more comprehensive than the published example in GB945 series.
- It is linked into the latest view of the component frameworks which are captured in the model.
- It saves time as compared to developing one's own equivalent.

9.2 Adapting the Exemplar

For those members that want to quickly adopt a solution this exemplar Platform provides a starting point or pattern for adopting Frameworkx. Because the exemplar Platforms are in the Framework Repository tool it is relatively straight forward to make adjustments and to customize the details to a local requirement – such as different grouping of platforms, additional platforms to support specific Service Providers business functions (e.g. cloud brokerage functions), additional benchmarking metrics, or different business services provided by preferred vendors solutions. It is also possible to hold the Platform exemplars as targets alongside the current 'As is' proprietary Platforms/ Business Functions and plan the adoption and migration to Frameworkx based solutions.

The benefits are that:

- The Exemplar will speed up members' enterprise transformation (adoption).
- It will lower the barriers to adopting Frameworkx.
- Simultaneously encourage contributions back form members of extension in a form that can be readily adopted into Frameworkx – since they will be machine readable and correctly structured thus creating value for other members.

9.3 Creating one's own

For those members having different views on Platforms this exemplar provides a worked example with an emphasis on the Enterprise Architecture and governance aspects of transformation rather than the SOA integration aspects.



This exemplar, especially the representation of it in a repository tool, is compelling proof point of how service providers can adopt, use and adapt Frameworx in their own enterprise architecture and transformation journey.

10 Summary

This application note has shown how the concept of platforms introduced in the Framework Implementation Methodology [GB945-M] is related to practical published architecture plans of several major services providers.

Following the concepts outlined in GB945-M it provides an exemplar platform proposal that shows how to relate a specific example Platforms to the Framework though a set of Framework standard patterns or templates.

It also demonstrates the critical importance of the linkages between service provider's decisions on governance boundaries for transformation investment, and the application functions captured in the Application Framework and other TM Forum standards such as benchmarking metrics, and business services.

It is expected that additional exemplars will be discovered for classes of business transformation goals and drivers. This application note might evolve to be a small library of worked examples and patterns for relating Governance Platforms to Framework – especially the Application Framework Functionality – and where the TM Forum manages and maintains the normative relationships of the Application Framework Functionality to the Business Process Framework, the Information Framework, and the Integration Framework.

It is also noted that a similar Platform mapping exercise to Business Process Framework processes is probably needed for those platforms that are manually implemented such as strategic and enterprise business functions. This could be a focus for a subsequent iteration of exemplar Platforms

11 Annex A: Exemplar Platform detailed descriptions

This is an overview of the Governance Platforms and the normative definitions for:

- Governance Platform Names and descriptions,
- Metadata related to Governance Platforms,
- Relationships with Application framework, Business services Operational Metrics

are held in the TM Forum Framework Repository including associated mapping tables.

Business Services in parenthesis are taken from GB942MAP but need to be re checked as some of those service are generic and may need to be modelled under Enterprise Strategy Policy and Planning. GB942 MAP also focuses on the mapping of Information Framework (Domains /ABE) to Business process level 4 and candidate Business Services.

Business services without parenthesis are taken from the Application Framework GB929 – Those are provisional.

Actual business service work is currently exploratory within the TM Forum Interface Program (TIP)

11.1 Customer and Market Platforms

11.1.1 Customer Strategy/Planning

Core responsibilities:

To manage the strategy to address existing customer sectors & segments (markets) in a better way and to address new customer segments/markets implied by new portfolio Products and Enterprise strategy.

Functions:

Create Market/ customer strategy and plans.

Collect organise, analysis and distribute market intelligence throughout the organisation.

Organisational:

Customer strategy and planning people: including market analysis, market segmentation, tracking customer changes and identifying key customer experience metrics and key portfolio product areas.

Metrics:

Set Customer Experience metrics and measurement methods for effectiveness of addressing Customer Segments for current and planned Portfolio products.

Business Services:

Provide market analysis reports.

Provide market forecast per customer segment and portfolio / product.

11.1.2 Customer Care Management (Assurance & Fulfilment)

Core responsibilities:

To manage day to day operational Customer care activities for sales, sales support, order management, and resolution of service problems and incidents.

This is a front office business capability that provides single point of contact for supporting the customer and may require fronting of Customer Billing care.

Such platform may be segmented according to product and or market segment but segmentation reduces flexibility and may impede a 360 degree view of the customer.

Functions:

Manage Sales and contact function outbound and inbound.

Order capture and validation (Include new order modify and cease).

Manage Problems and Incident reconciliation for customers. (Note act as the point of co-ordination for major customer incidents).

Organisational:

Manage customer and user master data (Inventory).

Provide contact staff, that are trained and available at the required times with sufficient capacity.

Metrics:

Measure monitor and report Customer Experience metrics for L2C and T2R.

Measure the operational efficiency of the Customer Care organization.

Track systemic customer issues with portfolio or products.

Business Services:

Manage customer marketing.

Manage sales and sales force.

Manage customer order handling.

Manage customer problems and incidents.

Manage customer care investigations (special investigations).

Create tracking information for systemic issues.

11.1.3 Customer Billing

Core responsibilities:

Manage all aspects of customer bills for the full lifecycle of creation validation, dispatch, queries and collections.

Functions:

To manage the production distribution of customer billing information in whatever form has been agreed with the customers.

To ensure the integrity of billing information.

Ensure integrity of the pricing applied to Customer products and services.

Collect bill charges.

Organisational:

Manage billing accounts.

Manage customer to billing account relationships.

Managing Bill Master Data.

Provide logistics for bill production and distribution.

Provide trained staff to handle bill inquiries and reconciliation.

Metrics:

Measure monitor and report Customer Experience metrics for billing process. (compliance ratios).

Billing accuracy.

Un-billable/contested charges.

Business Services:

Manage creation of Bill, production and rendering, and dispatch to customer.

Manage Billing queries by account /customer.

Managing billing reconciliation and adjustments.

Manage product billing rules.

Manage collections.

11.2 Product and Service Platforms

11.2.1 Market and Portfolio Strategy

Core responsibilities:

To manage strategic portfolio of product and service offered by the enterprise throughout the full lifecycle of products and services with a focus on creating and retiring products: and services (assumed to be re-useable product features/capabilities including OSS).

Functions:

Based on market strategy create define and realise new products and service for the enterprise.

Retire /replace legacy products for which there is insufficient demand.

Create business case for new or amended products.

Organisational:

Maintain Product and Service Catalog and libraries.

Product and Development people to plan create modify and retire products including OSS capabilities.

Maintain market awareness of competitor products and opportunities (to avoid me to products).

Maintain technical skills to specify design and rollout new or modified products; and the ability to operationally retire or replace legacy products.

Create operational documentation for rollout and operation of product and service.

Metrics:

Concept to Market metrics cycle time and operational efficiency.

Business Services:

Create modify archive Products and Services (catalog impact).

Query available product and catalogs.

Modify business rules associated with Product and Services (including resource dependencies).

11.2.2 Product / Service Management (Assurance & Fulfilment)

Core responsibilities:

To manage the day to day operational delivery of Product and Services; and meet the needs of Customers at the required quality level. This is the back office function behind the customers facing Customer Care Platform.

Functions:

Manage orchestration of Product and Service fulfilment (core L2C process).

Manage Product and Service Quality and Performance

Manage diagnosis. Localisation and resolution of Product and Service problems and incidents (may be repair or reconfiguration core T2R processes).

Provide operational reports on process performance and operational efficiency.

Organisational:

Manage product and service master data (Inventory).

Provide Product support staff, that are trained and available at the required times with sufficient capacity.

Metrics:

Measure monitor and report Product/Service Management parts of Customer Experience metrics for L2C and T2R.

Measure the operational efficiency of Product/Service Management organization.

Track systemic issues with portfolio or products and relationship with infrastructure.

Business Services:

Manage Product/Service Order (create/modify/cancel).

(Manage Service Configuration GB942MAP).

(Manage Service Quality QoS – GB942MAP).

(Quality of Service- QoS – GB942MAP).

Manage Diagnose Product / Service.

Manage Restore /Repair Product/Service.

(Service Problem Management – GB942MAP).

Product Catalog GB945-M).

(Manage Inventory GB942MAP).

(Manage Product Inventory GB942MAP).

(Manage Service Inventory GB942MAP).

11.2.3 Pricing and discounting

Core responsibilities:

To establish and set pricing rules rates for Products and service with the objective of maximise both revenue and margin. This is where the corporate rules on profit and margin are enforced and re-useable service costs related to acceptable product prices.

Functions:

Create the product rate 'book' and discounting rules (for sales force).

Set price and margin rules.

Monitor aggregate revenue and costs to determine if price plan need to be adjusted (includes detecting when products should be candidates for retirement).

Create from Usage records priced billing records.

Organisational:

Manage rate plans.

Provide trained staff to handle rating models and forecasts.

Metrics:

Measure monitor and report Product and Service process effectiveness.

Measure operational efficiency of Product and Service organization.

Track systemic customer issues with portfolio or products.

Business Services:

Manage Price and Discount plan for Products.

Manage Service internal transfer costs.

11.3 Infrastructure Platforms

11.3.1 Infrastructure and Asset Strategy

Core responsibilities:

To manage the strategy for investment in assets of all kinds: Networks, Computing platform and applications including OSS, workforce skills, and techniques for integrating those assets to support the customer, product and service needs of the enterprise. This is typically the source of transformation initiatives.

Functions:

Monitor CAPEX and PPEX costs of infrastructure assets.

Create plans to improve operational effectiveness of infrastructure asset.

Organisational:

Infrastructure strategy people, cost accountants, and financial people creating improvement plan.

Metrics:

Business metrics: Operational efficiency, some revenue and margin.

Business Services:

TBD?

11.3.2 Infrastructure and asset Management Resource Management

Core responsibilities:

To manage the day to day operational delivery of infrastructure; so as to meet the needs of Product and Services management at the required quality level. This is the back office function behind the Product and Services management Platform. For

regulated infrastructure this platform may be subject to regulatory separation policy prioritization policy and rules about pricing /costing.

Functions:

Manage infrastructure fulfilment (core L2C process).

Manage diagnosis. Localisation and resolution of Infrastructure problems and incidents (may be repair or reconfiguration core T2R processes).

Manage the operational works force skills diary appointments.

Provide operational reports on process performance and operational efficiency.

Organisational:

Manage Infrastructure master data (Inventory).

Provide Product support staff, that are trained and available at the required times with sufficient capacity.

Manage critical infrastructure security integrity availability and resilience processes.

Metrics:

Measure monitor and report Product/Service Management parts of Customer Experience metrics for L2C and T2R.

Measure operational efficiency of Product/Service Management organization.

Create and publish regulatory performance reports.

Business Services:

(Manage Resource Inventory GB942MAP).

Manage Infrastructure Order (create/modify/cancel).

(Manage Resource Order GB942MAP).

(Resource Provisioning GB942MAP).

(Resource Performance management GB942MAP).

(Trouble Ticket GB942MAP).

(Resource Alarm Management GB942MAP).

Manage Diagnose Infrastructure.

(Test Lifecycle Management GB942MAP)

Manage Restore /Repair Infrastructure.

Manage technical availability of infrastructure (planning / capacity).

11.3.3 Usage

Core responsibilities:

To take raw measurements of usage information capacity, computing, storage, etc., and create a record for use by the Product and Service Pricing and Discounting platform and customer billing.

Functions:

Consolidate aggregate usage information into a form useable by Product and service Pricing and discounting. Key function is to assure the Enterprise that revenue figures reflect the real financial situation.

Organisational:

Auditing investigators used for identifying loss /replication of usage records.
Detect missing and lost usage information and rectify.

Metrics:

Metrics on lost, corrupted, and inaccurately rated usage records.

Business Services:

(Billing Mediation GB942MAP).

(Network Data Management – Usage GB942MAP)?

11.4 Enterprise Platforms

11.4.1 Enterprise Strategy, Policy and Planning

Core responsibilities:

To manage the establishment of strategy, policy, and plans for the evolution of the Enterprise.

Functions:

This Platform sets out the specific goals and policy to be adopted by those managing transformation programs.

Organisational:

Corporate Strategy planning people.

Security Policy.

Financial policy people (debt, investment key EBITA targets, ROI targets, high level efficiency target).

Metrics:

Strategic Score card metrics.

Operational efficiency target metrics.

Customer experience target metrics.

Financial target metrics (Debt, investment, key EBITA targets, ROI targets, high level efficiency targets).

Business Services:

?Manage Strategic Plan.

?Manage Enterprise policies.

Manage and report Corporate score card metrics against target.

Manage and report Customer experience metrics against target.

Manage and report Financial metrics against target.

11.4.2 Enterprise Operations

Core responsibilities:

To manage enterprise wide functions.

Functions:

HR detailed policy, workforce skills and training.

Security Policy for people, processes and systems.

Financial reporting policy and collection of core enterprise statistics.

Organisational:

HR, Security and financial operational people.

Metrics:

Contribute to Scorecard metrics.

Business Services:

Manage personnel records and access rights.

Manage enterprise security policies.

(Identity Management GB945-M).

11.4.3 Revenue Management

Core responsibilities:

To manage the revenue and cost of the organization and to provide a focal point for carrying out Revenue Assurance, and Fraud detection.

Functions:

Manage Revenue assurance.

Manage Fraud detection and rectification.

Organisational:

Manage (governance) infrastructure usage records.

Technical and financial forensic people for identifying and rectifying revenue leakage points.

Set policy for monitoring points and auditing procedures for avoiding Revenue loss.

Metrics:

Revenue and margin.

Revenue loss metric (total and breakdown on areas of leakage).

11.5 Partner Platforms

11.5.1 Partner, Value Chain, etc. Strategy

Core responsibilities:

To manage the policy and rules for identifying and establish partnering agreements with other Enterprises covering procurement and values chains.

Functions:

Procurement management covering policy procedures especially on supplier and partner selection and RFX Process.

Establishing on ramp rules for partner cover financial (especially focussed on commercial risk), technical especially security, operational covering SLA/OLA and capacity management policies, and any regulatory and legal policies and rules.

Organisational:

Commercial, technical and legal experts.

Metrics:

Define Value chain process metrics.

Revenue against target.

Regulatory metrics.

Business Services:

Partner selection and on-ramping.

11.5.2 Partner/Operations**Core responsibilities:**

To manage day to day operational Interconnect services including on ramping individual partners, testing value chain operations and supporting order management resolution of service problems and incidents, and capacity and SLA planning.

Functions:

Manage Interconnect agreements and records.

Plan and operate interconnect agreements.

Capture, report and exchange Metrics with partners and where relevant regulators.

Organisational:

Provide staff, that are trained and available to plan interconnect capacity and resolve operational process issues.

Metrics:

Measure re operational efficiency of interconnect processes.

Measure Value chain process metrics covering:

- Lead to cash cycle time and fallout targets,
- Trouble to resolve cycle time and fallout targets,
- Billing settlement target payment period unbillable cost records,
- Capacity management.

Metrics agreed with partners.

Regulatory metrics where appropriate.

Business Services:

Manage interconnect Lead to Cash establishment and operation.

Manage interconnect Trouble to Resolve establishment and operation.

Manage Billing and settlement establishment and operation.

Manage capacity and SLAs establishment and operation.

Manage Partner selection and on ramping.

11.5.3 Interconnect Revenue Management/(Settlement &) Billing**Core responsibilities:**

To manage interconnection and value chain settlement and billing processes for interconnection.

Functions:

Collection and where required summarization of transaction charges – including fixed charges and recurring charges.



Operation of the settlement and billing and payment processes. Which involves the exchange of transaction charges in either raw or summarized form.

Reconciliation of partner claims and internal transaction records.

Create reports summarizing interconnect transactions.

Create regulatory reports.

Organisational:

Manage (governance) interconnect transaction record.

Technical and financial forensic people to audit interconnection records (to financial accounting standards).

Set policy for monitoring points and auditing procedures for avoiding Revenue loss.

Operational staff, that are trained and available to operate settlement and billing processes and resolve operational issues.

Metrics:

Revenue and margin.

Revenue loss metric (total and breakdown on areas of leakage).

Business Services:

Manage interconnect transactions.

(Supplier Settlements GB942MAP).

Manage interconnect settlement statement.

Manage interconnect payments and bills.

12 Appendix A: Terms and Abbreviations Used within this Document

12.1 Terminology

Term	Definition	TMF or Outside Source
Platform	A platform is a grouping of services, people and roles. The key thing about a platform is that it is a “real” implementable thing. It has managerial significance. Its definition reflects the focus of an enterprise and its top-level approach to delivering service within the constraints imposed by a specific business model. A platform is a device to manage the complexity of an organization’s processes and IT infrastructure.	TM Forum GB945-M
Exemplar Platform	An example of the Platform concept which follows the concept of platform and the relationships that they manage	TM Forum
Framework Governance Platform Exemplar	Full term used in this document for the Platform concept – used to avoid confusion in title with IT Platforms and to indicate that it is driven by consideration of organizational goals	TM Forum

12.2 Abbreviations and Acronyms

Abbreviation/ Acronym	Abbreviation/ Acronym Spelled Out	Definition	TMF or External Source
ABE	Aggregate Business entities	GB922 Concepts and principles	TM Forum
ADM	Architecture Development Methodology	Architecture Development Methodology	TOGAF
SOE	Service Oriented Enterprise	Modular organizations based on Platform concepts	TM Forum GB945-M
IMS	IP Multimedia Services		3GPP

SoA	Service Orientated Architecture		IT industry
BSS	Business Support System		
OSS	Operational Support System		

13 References

13.1 References

Reference	Description	Source	Brief Use Summary
Link To Models	<< Hyperlinks to or location of associated models>>	TM Forum	< URL link to CASEWISE model>>
[MIT Sloan]	Series of reports on IT and Business Alignment	MIT Sloan Institute	<p>Available at SSRN:</p> <p>http://ssrn.com/abstract=920666http://cisr.mit.edu/research/research-overview/classic-topics/enterprise-architecture</p> <ul style="list-style-type: none"> • Ross, Jeanne W., Enterprise Architecture: Driving Business Benefits from IT (April 2006). MIT Sloan Research Paper No. 4614-06; CISR Working Paper No. 359. • Enterprise Architecture: Driving Business Benefits from IT”. • MIT Sloan Forget Strategy: Focus IT on your Business Model, Jeanne Ross, Principal Research Scientist • MIT Sloan Maturity Matters: How Firms Generate Value from Enterprise Architecture, Jeanne Ross, Principal Research Scientist • MIT Sloan Generating Strategic Benefits from Enterprise Architecture, Jeanne Ross, Principal Research Scientist
GB945-M	GB945-M_Frameworkx_Implementation_Methodology_R8-1_V0-6.docVersion 0.6 March 2010	TM Forum	Sets out basic process from a SP transformation perspective of the transformation method using Frameworkx and introduces notion of Platforms
GB942 CP	GB(\$” Business Services Concepts and Principles	TM Forum	Sets out basic concepts of Business services which are an evolution of NGOSS Contracts
GB942 MAP	TM Forum Frameworkx Mappings Business Process, Information, Application, and Integration Frameworks Release 2.1	TM Forum	Sets out an initial set of mappings between Information Frameworks Domains and ABE’s to Business process L4 candidates and proposes candidate Business Services

[TOGAF]	The Open Group Architecture Framework TOGAF®	The Open Group	Enterprise architecture best practice and methodology
[ATT SoA]	Presentation slides to TAM team	TAW Paris Jan 2011 & MW Baltimore July 2011	Overview of the more granular approach to group systems used by ATT transformation projects.
[BT SoA]	New revenues early, whilst delivering reductions in system costs through consolidation – BT's SOA case study George Glass	MW Dallas 2006	Describes the approach BT is using to transform its BSS and OSS by introducing SOA principles and using governance principles to align IT and Business goals.
[DT Transformation]	Deutsche Telekom – experiences during design, development and implementation of the OSS Reference Architecture based on TM Forum Framework Dr. Wolfgang Woelker	TAW Paris Jan 2011	Description of Next Generation Service and System Management (NGSSM) pushes a modular production to enable business flexibility, improves customer experience by enhanced service quality and drives more efficient operations.
[FT Transformation]	Standardization Landscape Expectation and Usage FT/Orange Philippe Lucas	TAW Paris 2011	Describes FT/Orange framework which existed prior to TAM and comprises: <ul style="list-style-type: none"> • IT Domain/ subdomain/functions • Main data manipulated per Domain/subdomain/functions • This framework is used to map all IT applications in the FT group.
[NBNC0]	Assurance and Fulfilment for the Australian NBN Kevin Morgan NBN Co	TAW Asia 2011	Describes the NBN co approach to using Framework and provide high level architecture that illustrates the Platform Concept.
[GB927]	Application Framework	TM Forum	Application and Functional Frameworks for Systems. A key Component Framework.

13.2 IPR Releases and Patent Disclosures

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14 Administrative Appendix

This Appendix provides additional background material about the TM Forum and this document. In general, sections may be included or omitted as desired; however, a Document History must always be included.

14.1 Document History

14.1.1 Version History

Version Number	Date Modified	Modified by:	Description of changes
0.1	8 th July 2011	Dave Milham	first draft issue of document
0.2	9 th Sep 2011	Dave Milham	Un issued editor's draft with partial changes based on review call 23 8/2011
0.3	5 th March 2012	Dave Milham	Updated to take account of comment received review of 23 8/2011 and results of EA webinar
0.4	8 th march	Dave Milham	Unissued draft with some modification form review teleconference.(some style corruptions)
0.5	22 nd March 2012	Dave Milham	Restructured editor draft address comments on review 19 th March
0.6	26 th March 2012	Dave Milham	Corrected name of Customer strategy Platform and reworked AP functionality Platform mapping tables in section 8 so they are readable.
0.7	30 th Mar 2012	Dave Milham	Correction to address three comments in final review call on 29 th Mar and some further editorial corrections
0.8	30 th April 2012	Tina O'Sullivan	Changed document number prefix as a GB945-P had already existed.
0.9	4 th May 2012	Alicja Kawecki	Minor formatting, cosmetic corrections prior to web posting for

			Member Evaluation
0.10	2 nd Aug 2012	Dave Milham	Updates based on comments and agreement on FxA comment Disposition review meeting 2 nd Aug
0.11	23 rd Oct 2012	Alicja Kawecki	Updated to reflect TM Approved status

14.1.2 Release History

< This section records the changes between this and the previous Official document release. The release number is the 'Marketing' number which this version of the document is first being assigned to >

Release Number	Date Modified	Modified by:	Description of changes
<<Release Number >>	DD/MMM/YY	<<name>>	Description e.g. first issue of document

14.2 Acknowledgments

This document was prepared by the members of the TM Forum <<team name>> team:

- o Dave Milham, TM Forum, **Editor**
- o Steve Orobec, BT

Additional input was provided by the following people:

- o Yishai Brown, AMDOCS
- o Jerome Hannebelle, Orange FT
- o Kaj Jonasson, Ericsson

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