

High-Level Guide for Managers

The Application Framework

March 2010



The Application Framework

1. Executive Summary

Frameworkx is the next evolutionary step in the development of the highly successful TM Forum standard, NGOSS. Frameworkx is the industry's most comprehensive reference architecture for the implementation of a service oriented enterprise.

As Service Providers seek to become more agile to enable them rapidly adapt to new business models and software driven products they are turning to service oriented concepts as a key technology in the development of their system and enterprise architectures.

A cornerstone of Frameworkx is the Application Framework which reflects the way systems and applications are actually implemented and procured from the market, and anticipated trends in their evolution. It shows the structure of deployable, purchasable operations and business software applications in a Service Provider's environment. The framework is a practical, everyday working guide for those organizations that buy or sell operational systems. It serves as a common language to position and navigate the complex landscape of a Service Provider's operational and business software systems. It is not intended to be prescriptive or mandatory, however, it does provide a "lens" to compare current implementations, and implementation proposed in RFX activities with a clearly defined, industry-agreed approach.

The key benefits of the Application Framework include:

- **Speed Procurement:** Service Providers can use its terminology and definitions across the entire procurement process – from initial request for information, through systems comparison, to actual implementation.
- **Clarify Products Positioning:** it helps suppliers clearly explain which software solutions they supply and which ones have resulted from partnerships with other companies.
- **Aid Specification of Management Interfaces:** the Application Framework has mappings to a set of Business Services, which are specified by the Integration Framework to define interoperable standardized management interfaces at the application or platform level.
- **Improve Automation:** the standardized deployable components will enable a smoother road to automation within the Service Provider's business.
- **Streamline Mergers and Acquisition:** it provides a common vocabulary and structure for merging organizations to map their systems against.

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- **Reduce Risk when Outsourcing:** the Framework can be used to precisely define the boundaries between interfacing applications, allowing more effective outsourcing of key functions.
- **Facilitate Cloud Implementation:** by identifying typical application interactions the Application Framework can help companies implement an application in the Cloud environment to assure they have considered the impact on interfacing systems.

The Application Framework has supported many operators, system integrators and vendors in achieving their projects. For example, Cerillion successfully implemented the Application Framework for the delivery of prepaid-postpaid convergence in order to align the relevant business support system (BSS) and operational support system (OSS) applications by using a common set of terminology and functional mapping. With its functional nature, the Application Framework tackled the challenges of converging separate system silos by explaining in detail what a convergent solution *has to do*. This was crucial when the functions were duplicated or overlap.

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2. Challenges Addressed by the Application Framework

The Application Framework (formerly known as Telecom Application Map, or TAM) was created as result of a specific request from the Service Provider community, asking for a framework to be created that would allow them to communicate more effectively with system providers and integrators. The goal was to create a structure, language and a set of definitions that reflects the way operational and business software systems and applications are actually implemented and procurable from the market.

This request was driven by the business challenges faced by service providers on a daily basis. Activities such as legacy system replacement, organizational realignment, mergers and acquisitions, and the introduction of new service and network capabilities all benefit from having a framework that describes how systems map together. The challenge given to the Application Framework team was to develop a tactical tool that would address these real industry challenges.

Application Framework usage for the different players in the industry:

Common Application Terminology

Having a common language for information exchange within the industry, most notably between **Application Vendors and Purchasers**, reduces risk when investing in new applications. It also streamlines the entire procurement process, from the initial request for information, through systems comparison, to the implementation. Common terminology also reduces integration costs by enabling integration points to be clearly defined.

Standard Application Requirements

The Framework gives the industry standard application requirements that enable the **development** of reusable components, and a modular approach to application development. This reuse results in lower costs through economies of scale.

Enable Automation

The standardized deployable components that result from the adoption of the framework and interoperable standardized interfaces enables a higher degree of automation within the **Service Providers'** businesses, which in turn reduces human errors and improves operational efficiency.

Effective Systems Rationalization

Mergers, acquisitions and operations streamlining cause **Service Providers** and **System Integrators** to examine and, if necessary, to rationalize their operational and business support systems. The Application Framework provides an effective tool for mapping existing system environments and determining where functional overlaps and gaps exist.

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Identify Application Interactions for Cloud and Outsourcing Implementations

Suppliers and **System Integrators** use the framework to map the systems that they supply against the systems that they partner with other companies to deliver. It may be used to show both current and future portfolios. Operators use it to evaluate the impacts on interfacing systems.

The Application Framework has many specific uses for Service Providers' project life cycle:

Procurement

- Provides structures for creation, identification and cataloging of systems requirements.
- Its structure allows clear delineation of project scope, identification of the risks, and opportunities for quick wins.
- Maps requirements to functionality, processes, information, and interfaces, and to Business Services.
- Creates unambiguous RFX documents and supports analysis of the responses through use of standard vocabulary and definitions, thereby eliminating errors and delays.
- Identification of staff/training implications.

Integration

- Identification of applications to be integrated with new applications.
- Provides a standard method for structuring interface definitions, specifications and realizations that are required for application integration.
- Provides tools for the identification of existing and new applications impacted and their boundaries and interfaces.
- Identification of roles and candidate users of applications.
- Provides tools to identify business integration points and the Business Services (NGOSS Contracts) required to support them.
- Supports project impact assessment on applications, interfaces and processes.

Development

- Assists impact assessment of software upgrades to applications.
- Evaluates, reduces, and manages license, maintenance and support costs by rationalizing the number of applications actually required.
- Re-use tools that assist in the identification of applications which support standardized Business Services.

Operation

- Systems Inventory control.
- Support for change-management and risk-assessment for business continuity.
- Allows clear delineation of organizational systems' responsibilities (governance).
- Single structured and harmonized view of applications across an enterprise.

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3. Application Framework Overview

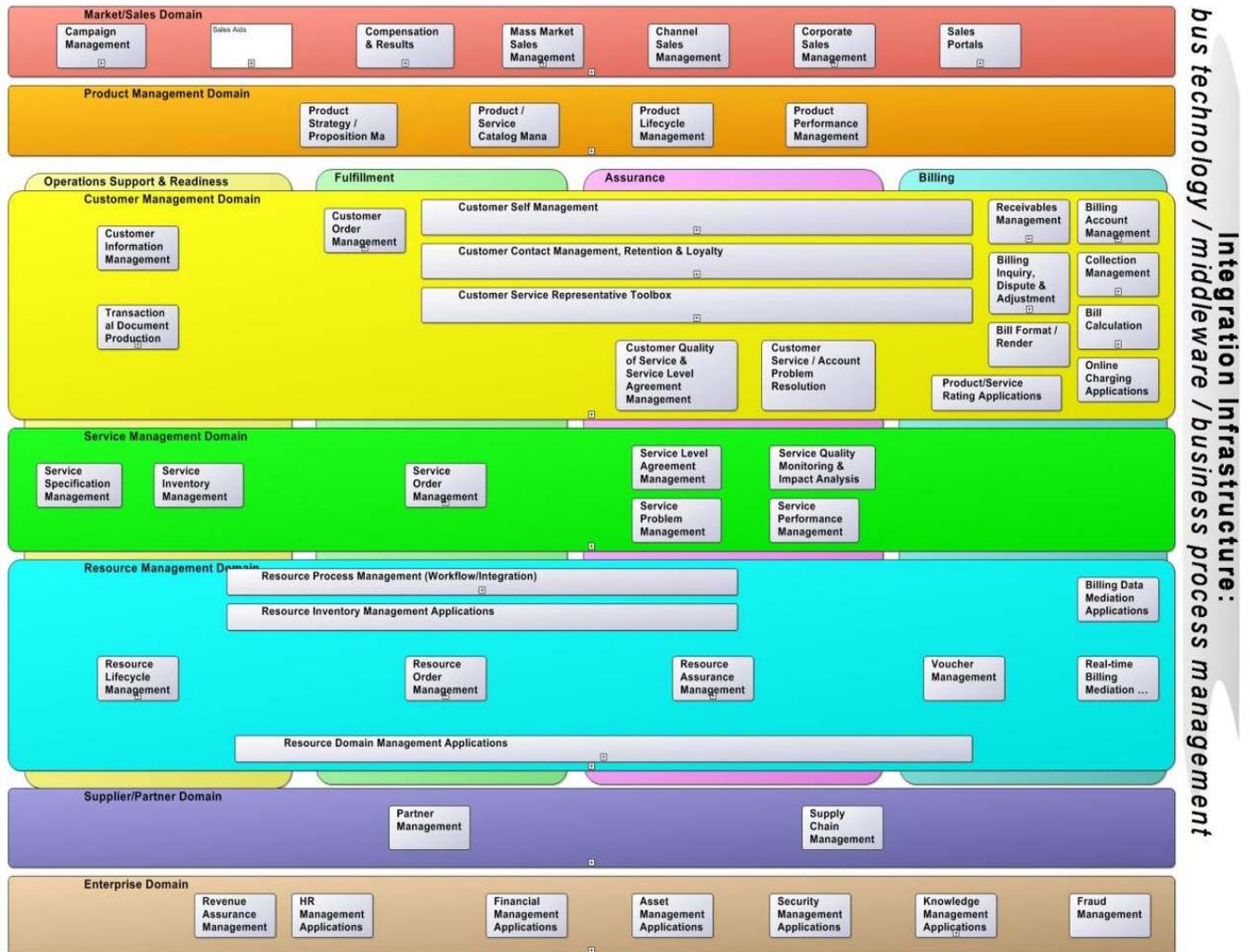
The Application Framework identifies typical systems available in all communications for Service Providers and assists the various communities who specify, procure, design and sell operation and business support systems to understand each other's viewpoints. To be included in the framework, normally there must be two commercially available products that provide the defined functionality. This requirement keeps the Application Framework grounded in the day-to-day realities facing Service Providers.

Wherever possible, the Application Framework uses language common in the industry and builds on the process and information models key to TM Forum's Framework, especially the Business Process Framework (eTOM) and the Information Framework (SID). The Application Map includes infrastructure systems, such as bus technology and business process management technology that are not strictly applications. It has been designed to be generic, without losing touch with market reality, and to be familiar to industry users, thus it uses identical layering concepts to those used in the other frameworks. It may be used as the library of application components for assembling Service Provider "system platforms" that reflect the provider's operational and governance boundaries for managing groups of applications from one or more vendors.

The high-level view of the Application Framework is shown below. It is divided into seven horizontal layers that are consistent with the TM Forum Information Framework (SID): Market/Sales, Product, Customer, Service, Resource, Supplier/Partner, and Enterprise. It is also divided into four vertical columns, consistent with the TM Forum Business Process Framework (eTOM): Fulfillment, Assurance, and Billing (FAB), and Operational Support Readiness (OSR). Each box on the map represents a "level 1" Application such as

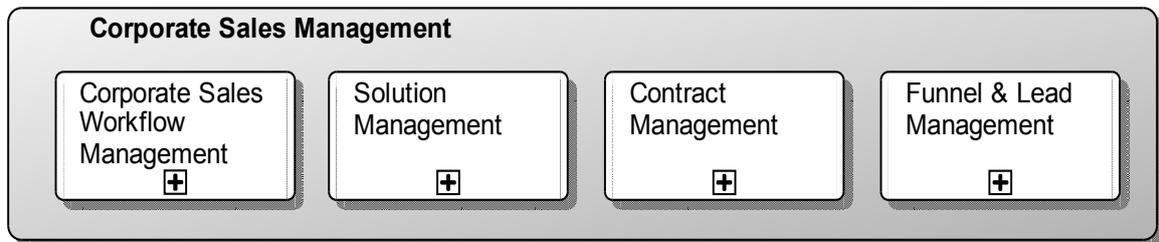
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Customer Order Management or Bill Calculation or Campaign Management.



The Application Framework can be further decomposed into “lower levels” of functionality. An example is shown below where the *Corporate Sales Management* Application, which is one of the applications in the Market/Sales domain, can be broken down into four smaller (level 2) applications, i.e. *Corporate Sales Workflow Management*, *Solution Management*, *Contract Management* and *Funnel & Lead Management*.

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Each of these “level 2” applications can in turn be broken down into even smaller “level 3” applications as shown below. The complete listing of all available decompositions can be found in the Application Framework guidebook.

The Application Map also recognizes managed resources, including network- based resources, content servers, Intelligent network platforms, and related network control technologies (such as element management systems), as well as the system infrastructure fabric (such as bus technology and business process management engines).

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4. Benefits

The industry receives a number of benefits from using a common Application Framework:

- **Reduce procurement costs**

The standard terminology and classification scheme describes application components for needs analysis, RFX preparation, and the selection of Knowledge Certified consultants and Certified Compliance Testing products.

- **Decrease time to market**

Speed up project management and planning by providing mapping and modeling for all sizes of projects and all types of organizations, through a layered, flexible approach.

- **Reduce implementation cost and risk**

Get started quickly with a library of key elements for service-oriented implementations and availability of commercial tools.

- **Reduce management cost**

Reduce component license costs through higher reusability and lower custom development.

- **Reduces integration tax**

By using standard information definitions to eliminate data transformation. Standard and deployable application components will enable a higher degree of automation within the Service Providers' businesses.

- **Reduce integration cost with processes and services**

Application Framework is integrated with mappings to Business Services and Processes.

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5. Applying the Application Framework

This section demonstrates how a TM Forum member has implemented the Framework and the results it has achieved. For full version and more case studies visit:

<http://www.tmforum.org/casestudies>

Business problem:

Most telecom operators appreciate that implementing prepaid-postpaid convergence will allow them to launch new and more innovative next-generation services.

Solution using the Application Framework:

Cerillion realized that in order to use effectively the “horizontal” architecture as the foundation for the delivery of prepaid-postpaid convergence, it would need to align the relevant business support system (BSS) and operational support system (OSS) applications using a common set of terminology and functional mapping. With its functional nature, the Application Framework could tackle the challenges of converging separate system silos by explaining in detail what a convergent solution *has to do*, rather than the business processes that it would need to support.

Cerillion took the Application Framework and then focused in on the specific functional areas that are critical to achieving the convergence that operators have failed to achieve, up to now. Using the TAM, they derived a model to describe the main functional building blocks required to deliver a complete prepaid-postpaid convergent solution – the Cerillion Total Convergence Architecture (TCA). Cerillion took the benefit of the standard framework and technology to create an architecture that is not proprietary to the company, but which could instead be used by a much wider audience within the BSS or billing community to address these issues. Where functions originate solely in one domain, building a complete solution made up of discrete modules is relatively straightforward.

However, it is the functions that are duplicated or that overlap that cause the biggest headache when it comes to achieving a fully convergent environment. For example, unless the product management domain is converged, it is not possible to offer a common set of products and services to all customers. In most system architectures, the definition of products, tariffs and discounts is very closely linked to the underlying rating system, so without using the exact same rating engine to operate in both offline and online modes, it is unlikely that a fully converged set of products and services can be offered to the market.

Results:

Since its launch in January 2009, Cerillion’s Total Convergence Architecture has at least delivered clear benefits in two key areas. Firstly, the TCA framework is helping Cerillion’s customers to clearly identify their convergence challenges and quantify the

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benefits that can be achieved through implementation. This is enabling them to prioritize their BSS investments and define clear strategies for achieving convergence. Secondly, it now forms the foundation for Cerillion's on-going research and development activities, underpinning its product strategy and serving as a checkpoint for all new product initiatives. However, the benefits of this new approach to convergence are potentially much greater. With the launch of TCA, the industry now has a framework that is not proprietary, but that can be used by anyone to quantify and discuss the key challenges that need to be addressed when converging prepaid and postpaid systems. Other vendors, operators, integrators and consultants can all use it to set out their strategies for implementing convergent solutions.

(Source: Cerillion Case Study Feb 2008)

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