MODEL OF PROVIDING SERVICES THROUGH CURRENT OPERATIONS SUPPORT SYSTEM

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Abstract

One of the costs of deploying a new service is the cost of integrating all the necessary applications into an effective software solution to manage the service (integration to current OSS (Operation Support Systems)). This cost has been dubbed the "integration tax" and can turn out to be five times the capital cost of procuring the management software in the first place. The paper discus potential approaches how to implement new services to Next Generation OSS.

1 Introduction

The market for fixed and mobile services is nearly saturated. Growth is flat to negative, seriously impacting service provider profits. Tough economic times only amplify this situation. To maneuver in this business climate, service provider´s must reinvent their business models by offering new, profitable, next-generation managed services, such as web-based video conferencing and collaboration, and other unified communications solutions. For this reason, is necessary to transform current OSS/BSS (Operations Support Systems/Business Support Systems) to new models based on the best practices, or new growing technology approaches, which bears potential of new revenues to service providers. Next generation managed services also offer the potential for rapid returns on investments.

The TM Forum Solutions Frameworks (NGOSS - New Generation Operation Systems and Software) helps address these challenges by providing a framework for the development of management applications, those software applications that provide the building blocks for management solutions. The members of the TM Forum have elaborated many parts of NGOSS to make it practical, including in the area of information modeling, process analysis, and contract definition.

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2 Enterprise Architecture Frameworks

Within the ICT service provider industry, the TM Forum Solution Frameworks (NGOSS – New Generation Operation Systems and Software) has evolved over time from an ICT business and system transformation framework to become an enterprise architecture framework. Tm Forum programs capture the best practice of the communication service industry as service providers, equipment and software vendors, or system integrators. Solution Frameworks serve as a toolkit of specification and guidelines that covers business and technical concerns for business and system transformation of operational and business support system and software.

TM Forum Solution Frameworks include the following:

- *Business Process Framework (eTOM):* Maps to the business layer (Figure 1). ICT service providers use the Business Process Framework as a benchmark in the elaboration of their specific business process models. It is technology neutral and provides standard structure, technology, and classification scheme for business processes and business activities.

- *Information Framework (SID):* Maps to the information and data layer (Fig. 1). The Information Framework is technology neutral and provides a semantic vocabulary, structure and logical view of business objects relevant to the ICE service industry. It supports the business and system perspectives necessary to create a common data model.
- *Integration Framework (TNA):* Includes the information necessary to transition the specifications of business needs and missions to the creation of the blueprint or architecture of the target solution (Fig. 1). An important part of Integration Framework is the specification of NGOSS Contracts, known as Business Service, that span the Business Process, the Information and the Application Frameworks across lifecycle views. The TM Forum is currently working on the specification of Business Service support service oriented architecture (SOA) and the creation of technology neutral platforms that encourage flexibility and agility in the enterprise[1].
- *Application Framework (TAM):* Maps to the technology and tool layer (Fig. 1). The Application Framework is technology neutral and provides a standard structure, terminology and classification of the function capabilities reference in the OSS and BSS application landscape. The Application Framework enables the service provider to draw a logical representation (platform independent representation) of their as-is and to-be IT application architecture. This understanding of the existing and desired architecture is key when the goal is to liberate and de correlate IT strategic architectural management from specific vendor or infrastructure.

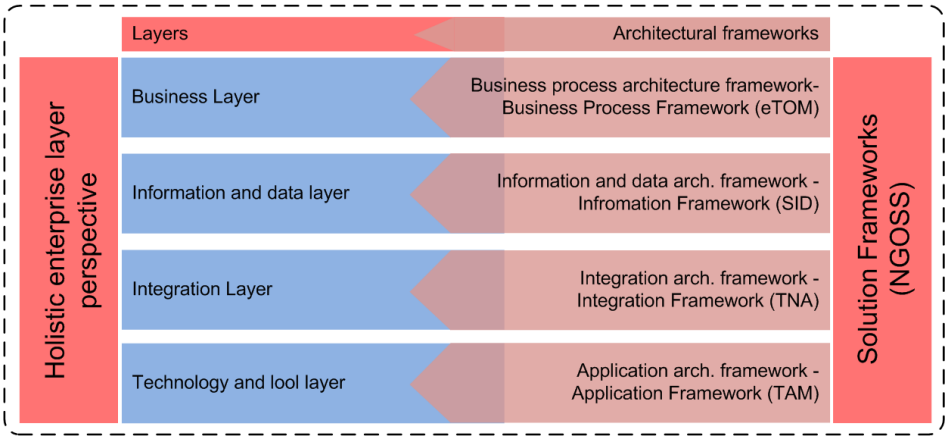

Fig. 1. TM Forum Solution Frameworks and Enterprise Layers.

The adoption of NGOSS by major Telecom service providers advances at very slow pace, due to perceived risks:

- Incremental transition from legacy OSS to NGOSS environment without service disruption.
- A disruptive change to existing business processes and corporate cultures.
- Unproven scalability and reliability of this new technology.
- No clear alignment to NGOSS of major OSS application vendors.
- Lack of generally-available expertise regarding NGOSS technology and business model.

For successful implementing of cloud service model to current OSSs is necessary to design new type of middleware based on best practice frameworks, or usage of another negotiable technologies. Cloud services are a new approach to planning, delivering and consuming IT and network-enabled services for businesses and consumers. Cloud is end user focused, with little or no onus on the user to understand the location or characteristics of the underlying infrastructure. To accomplish this, cloud requires ubiquitous network access, resource pooling that takes no account of location, rapid elasticity, flexible pricing models, readily available self-service, and, most of all, economies of scale. The implementation of cloud seems to be complex, but it appears to address most if not all of the issues in the incumbent IT delivery model.

[1] Collaboration Program of Integration Framework (http://www.tmforum.org/CollaborationProgram/ArchitectureHarmonization/4866/home.html, 28. 9. 2010)

3 Cloud Services Integration

Cloud computing is still an evolving paradigm. Its definitions, use cases, underlying technologies, issues, risks, and benefits will be refined in a spirited debate by the public and private sectors. These definitions, attributes, and characteristics will evolve and change over time.

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is composed of five essential *characteristics* (On-demand self-service, Broad network access, Resource pooling, Rapid elasticity and Measured service), three *service models* (Cloud Software as a Service, Platform as a Service and Infrastructure as a Service) - see figure 2 for reference model of the cloud, and four *deployment models* (Private, Community, Public and Hybrid cloud).

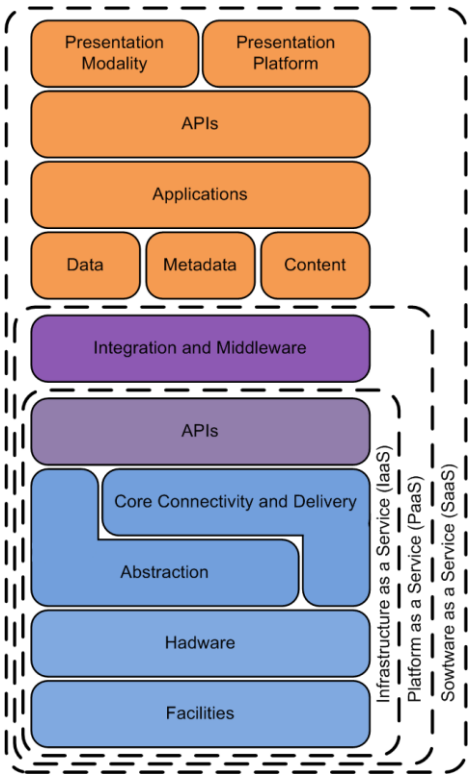

Fig. 2. Cloud Reference Model.

Software as a service (SaaS) is one of the fastest growing segments of the information technology (IT) industry because it provides a more cost-effective alternative for enterprises to achieve their business objectives than traditional packaged applications. SaaS changes the way software applications are stored and accessed. Traditionally software applications would be installed and reside on the same host machine, on which they would be accessed from. However, SaaS changes this by hosting software applications on a remote server. These software applications and services are then accessed by remote users via the Internet.

Web-based email services are a good example of what SaaS basically is. Each Web-based email service provider hosts all of their programs, information and data that are linked to the services they are providing (in this case Web-based email access), in a remote centralized location.

Briefly mentioned below are a few of the main advantages for of SaaS for software users:

- If a user only needed to use a software application for one month, it would be a waste of money for them to completely purchase this software application (especially for expensive software applications such as video editing, graphics, etc.).
- Some applications can take up a lot of hard drive space. By using SaaS software solutions, consumers can save a lot of hard drive space and in the long run this can save them money. Also,

users do not have to worry about constantly backing up software data as this is all handled by the SaaS vendors.

- SaaS allows software vendors to profit like never before. Traditionally a client would purchase a software application, along with the number of licenses that they required and then that was it. A software vendor received very little from their clients after this initial purchase.
- By keeping ownership of software applications in their own hands, software Vendor's can benefit from a reduction in piracy and unlicensed copies of their software being distributed.

SaaS in turn is built upon the underlying IaaS and PaaS stacks (Figure 2) and provides a self-contained operating environment used to deliver the entire user experience including the content, its presentation, the applications, and management capabilities. In the case of SaaS, this means that service levels, security, governance, compliance, and liability expectations of the service and provider are contractually stipulated, managed to, and enforced. In the case of PaaS or IaaS it is the responsibility of the consumer's system administrators to effectively manage the same, with some offset expected by the provider for securing the underlying platform and infrastructure components to ensure basic service availability and security. It should be clear in either case that one can assign/transfer responsibility but not necessarily accountability.

The possibility to apply principles of NGOSS to current system, with appropriate transformations of necessary component units provides an excellent chance to telecommunication service providers to grow up revenues. Also it gave a chance to extend service portfolio of large worldwide enterprises, which feed out market with several of products, or they could use SaaS for their internal purpose. Now days are software services typically distributed by one of the models: rental, server or service package model, each has its own characteristic. Much like any other software, Software as a Service can also take advantage of Service Oriented Architecture to enable software applications to communicate with each other. Each software service can act as a service provider, exposing its functionality to other applications via public brokers, and can also act as a service requester, incorporating data and functionality from other services.

4 Conclusion

The paper summarizes potential future trends in ICT service provider's area. Summarize approach of OSS/BSS system switch to NGOSS system, which enable early to market services delivery, and potentially rapid return of investment. Further discus phenomenon of future service conveying - cloud computing and its benefit and hazards.

Acknowledgement

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