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Profitable Next Generation Network Transition

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Carriers globally are embracing Next Generation Network (NGN) technologies as the key to delivering a wider range of exciting new content-rich communications services to their customers. NGN opens the door to new revenue streams, more attractive service bundles for consumers and reduced product costs through the use of common access and network technologies that potentially minimize costly network layers.

However in order to reap these benefits Communications Service Providers (CSPs) must overcome significant hurdles to profitably make the transition from their legacy infrastructure to an NGN environment. Common challenges experienced by CSPs undertaking this exercise include constrained investment resources, the need to develop new business models and dealing with an inflexible OSS/BSS infrastructure. Add to this the fact that NGN technologies are not static but are continually upgraded and it is no wonder that many carriers are experiencing rising operational costs, limited new revenue flow and constantly moving deadlines.

The good news is that by utilizing their existing assets – the OGN and existing OSS/BSS infrastructure - CSPs can make the NGN transition profitably and in a managed and controlled manner.

Services 'independent' of the underlying network

One of the ways in which CSPs can achieve control and management of the OGN to NGN transition is to adopt a service-oriented approach. This approach masks the complexities of any particular technology and enables changes to network and IT infrastructure to be driven top-down and directly from business requirements.

An important step, along the service-oriented path, is to define products and therefore customer services 'independently' of the underlying network while utilizing network assets whether OGN or NGN. This allows products to be introduced early and persist as the technology underneath evolves.

The 'service-independence' can only be achieved if CSPs adopt a strategy which overcomes the limitations of the legacy provisioning systems that have evolved over time to accommodate a converged, network-wide handling of OGN and NGN resources.

Legacy OSS assets

Adopting a service-oriented model and provisioning convergence first requires an understanding of the current OSS/BSS environment.

Traditionally, provisioning of services has had clear demarcation points within CSPs. It was driven by market segmentation such as consumer vs. business vs. mobile and tended to mirror the supporting

network technology, e.g., voice vs. data vs. mobile. This has resulted in silos of OSS systems performing essentially the same business functions for different services.

These legacy OSS/BSS silos deliver the existing services and hold CSP's most valuable assets (its customer and network inventory data – including multiple copies) and are not service-oriented. The redundancy of systems supporting data assets and business functions has resulted in high (and growing) costs of systems and technical resources and the inability to accommodate new service types or models. Additionally, in many cases, the underlying OSS is incapable of supporting NGN technology and, more importantly, new service models.

Achieving service independence from the underlying network requires CSPs to bridge across all of the legacy OSS/BSS segmentations for network design and to accept orders for any service type (e.g. voice, video or data). In the transitioning OGN/NGN scenario this means provisioning across physical and logical network layers 1, 2 and 3 and across new generation and old generation technologies to deliver either residential or business services.

These requirements demand a “converged” view of all network resources and a converged point at which service requests can be decomposed and designed across the network. A converged OSS layer that can perform these tasks and that re-uses the existing network inventory data and systems can separate service evolution from network transition, allowing CSPs to optimally invest in service and network technologies.

Service-oriented, OSS convergence across legacy and NGN infrastructure

To enable convergence of the underlying OSS infrastructure, an independent provisioning abstraction layer between the BSS and OSS can be introduced (the alternative strategy of consolidating all assets into one system is very costly and takes many years to accomplish).

This abstracted layer needs to operate across multiple network (and hence inventory) domains and complement the underlying (silo) inventory systems by building a higher level, abstracted and end-to-end view of the network data assets. The layer also receives service requests from various order management and/or CRM systems.

Such a layer inherently comprises service decomposition and cross domain network design functionality and is able to design and assign network resources in accordance with various service requests across OSS inventory silos. This approach also removes the need for re-configuration of workflows, element managers etc. to design and deliver services in a systematic way.

There are clear benefits in this approach. It provides the prerequisites for a controlled and managed transition to NGN by taking advantage of the existing CSP data assets and OSS infrastructure and it enables automated cross-domain network design for any class of services which is essential for “flow-through” provisioning. Importantly, the abstracted provisioning layer leaves the underlying inventory systems to manage the domain and control the data for that domain.

Second, the abstraction layer knows what tasks will need to be completed to fully execute an order. It can therefore be used to track and assist service execution. As a result, service execution to complete an order can be defined as a set of generic tasks which can be sent to workflow as needed. New services can be introduced with little or no change to workflow or staff training required. And time to revenue can be dramatically reduced.

The provisioning abstraction layer provides CSPs with a powerful facility to drive a service-oriented fulfillment strategy. As a result CSPs will be able to control the rate and cost of transition to NGN, while delivering improved fulfillment performance. Above all, it avoids the need for step-function OSS rationalization or bulk data migration before realizing the real benefits NGN promises - namely new services and lower costs.

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