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Bringing New NGN Services "To Life" by Leveraging PLM Systems

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Driven by the pressure to increase market share, boost subscriber revenues, stave off competition, and reduce churn, communications service providers are being challenged to deliver a richer mix of products and packages that include voice, video, Internet, wireless, content, entertainment, and other multi-media application services. Operators are actively attempting to deliver differentiated and dynamic product offerings that are constructed from many reusable underlying components, have several variations, are introduced faster, and retired more quickly.

In order to rapidly deliver a wide variation of new products and services, operators will need to transform their network infrastructures and their product realization processes. For many service providers, launching a new complex product takes, on average, twelve months, and, in some cases, this can be eighteen months or more. Lifecycles must be transformed from months to weeks, and service providers need to develop the core capabilities to launch, customize, and take down services in an efficient and speedy manner.

To partly address this challenge, operators worldwide are making investments in IP transformation and Next Generation Network (NGN) architectures. These infrastructures enable more flexible creation, management, and control of complex NGN-powered multimedia services, which will ultimately provide operators with crucial new revenue streams. In a legacy environment of single-purpose networks, each parallel network is essentially "the product." In contrast, the advent of NGN architectures is eliminating the need to install service-specific networks. The software-centric and application-driven nature of NGN infrastructures provides significant flexibility in terms of service creation and service delivery.

However, the improved flexibility brings with it a new set of challenges related to packaging services into more complex offerings and managing end-to-end product information. Furthermore, different types of product delivery activities will need to be managed and orchestrated now, ones that involve a variety of systems (SDPs, third party applications, BSS/OSS) and stakeholders (internal development, trusted and un-trusted service providers, systems integrators, and outsourced partners).

As NGN implementations accelerate, network enablement will become a much

smaller piece of the New Product Introduction (NPI) cycle time. Operators will need to address the following NPI bottleneck issues: systematic definition of sellable product offerings composed of various NGN services, dissemination of product data across business and operations support systems (BSS/OSS), and configuring operational systems to begin taking and fulfilling orders. These are not necessarily new challenges for operators, but the relative cost and impact of these issues will be dramatically accentuated in a more dynamic NGN environment. Realizing the full potential of NGN to achieve shorter launch cycles and efficient service delivery will require operators to directly and more systematically manage the end-to-end processes for service and product creation.



Product and marketing managers currently use ad-hoc tools and approaches to define marketplace offers and manage product portfolios and utilize manually intensive approaches for updating product data in BSS/OSS applications. These approaches will rapidly break down in an environment where there will be a one hundred-fold increase in the service, content, and application capabilities enabled in the network (directly by operators or through partner providers). The return on investment from NGN infrastructures will be considerably weakened if operators do not address how to quickly package these new capabilities into sellable offerings, and speedily and efficiently enable the various operational systems to support ordering, fulfillment, and billing. As part of implementing a NGN, operators need to simultaneously address the problem of how to rapidly package new service capabilities into market-ready product offerings, and how to systematically enable operational systems to reference and utilize these offering definitions. This cannot be an afterthought.

Ideally, the product creation process should be managed within a single integrated lifecycle management solution that spans both the technical and commercial product definition domains. On the one hand, the service delivery teams need to manage the specification of technical service enablers (e.g. presence), foundation services (e.g. PTT), and composite services (e.g. rich voice). The product management and marketing teams in turn need to manage the definition of the functional products (e.g. rich voice + gaming + football alerts) and market offerings (e.g. Mobile Plus with no set-up fee promotion), all of which are linked to the

underlying technical building blocks.

Achieving an integrated and holistic approach will require operators to adopt comprehensive Product Lifecycle Management (PLM) software systems to support the creation, management, dissemination, and use of product and offering definition data. These systems allow line-of-business, IT, and network teams to collaborate more efficiently and effectively, throughout the entire product development lifecycle that spans planning through to service deployment. PLM systems serve as an extension of the NGN Service Delivery Platform (SDP) and provide a gateway into the BSS/OSS layer.

PLM systems support creating a layered, multi-dimensional product model that includes the full technical, commercial, and price definition of products. They also manage revisions of modeled entities, states of product definitions, and provide full support for review and approval processes. Information models are often compliant with TeleManagement Forum (TMF) BSS/OSS standards. Finally, PLM systems provide a variety of real-time and export integration interfaces to enable external systems to consume or reference the product data maintained within the PLM application.

A key consideration when implementing a PLM solution as part of a NGN initiative is the nature and behavior of two primary integration touch-points. First, how does the PLM system interact with the network layer or service delivery platform (SDP) where the service capabilities are actually created, instantiated, and executed? Second, how does the PLM system connect to the BSS/OSS layer where product information is consumed and where processes for product ordering, fulfillment, and billing are managed?

A potential integration scenario with the network/SDP layer is where the PLM solution implementation involves one-way integration with the SDP, where the definitions and characteristics of service capabilities are imported from the SDP into the PLM system when the service capabilities are created and deployed in the SDP. As new service definitions are injected into the PLM system, product managers have instant access to available service definitions from which to easily create product and commercial offering definitions. A two-way integration scenario with the SDP with the definition process beginning and ending in the PLM application would further enhance this method. This gives product managers the ability to drive requirements for new service capabilities, and essentially supports a closed-loop mechanism to speed up the launch of new creative products.

An operator can integrate a PLM system with the BSS/OSS layer in one of two ways (or both). In the first integration mode, the PLM system functions as an offline product reference and master product catalog. The product data that is modeled, managed, and mastered in the PLM application is made available for export to various operational applications that consume the product data to support different business processes. In the second integration mode, the PLM system functions as a real-time transactional product catalogue for order-time product configuration, validation, quoting, and fulfillment-time product decomposition. External applications (e.g. order capture portal, fulfillment system) query and transact with the PLM application to retrieve product details and execute product configuration rules in the system.

Assuring a return on investment from an NGN infrastructure initiative is best enabled through the simultaneous deployment of a comprehensive PLM system. As operators deploy NGN infrastructures, it is recommended that they implement software systems that seamlessly link the front and back office operations, and tightly align service creation, product management, and order management. PLM solutions bridge the gap between the network and marketplace by helping bring new service capabilities to life in the form of market consumable product offerings and packages.

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