

CONVERGED MOBILE AND FIXED SERVICES WITH VIRTUAL IMS

Virtualizing and Monetizing IMS Services for Service Providers

Market Demands for Virtual IMS

The explosion of always on IP network and the breadth of multimedia services are creating opportunities for new business models across all types of access networks and connected devices.

Further, service providers considering the move to network functions virtualization (NFV) are weighing the business case for doing so and looking for opportunities to monetize and realize the operational benefits of their investments in virtualization.

One such business case revolves around IP Multimedia Subsystem (IMS), the network solution that allows service providers to offer a range of services like consumer voice over IP (VoIP), rich communication services (RCS), voice over LTE (VoLTE) and voice over WiFi (VoWiFi). As such, IMS has become a vital building block for the future of mobile networks. Driven by consumer demand for media-rich applications, music and video streaming, service providers are accelerating their timetables for augmenting capacity and laying a framework for future-proof data networks. Virtualizing IMS is viewed as a key step in that process.

The argument to transition to a virtualized IMS core (vIMS) is compelling and service providers are now looking at specific offerings that can be deployed efficiently on a vIMS core. VoLTE is one of the primary applications of IMS and one of the most tangible proof points for the virtual IMS business case. VoLTE allows 4G networks to support voice calls, offering service providers a potentially robust revenue stream to recoup their 4G investments. VoLTE on vIMS is seen as a differentiator for SPs, offering enhanced voice and video services to consumers and augmented IP-based telephony to enterprise and residential customers.

Service Provider Challenges

As OTT competitors have consistently eroded service provider revenues through service offerings like SMS and VoIP, service providers are looking to maintain advantages wherever they can be found. One such advantage lies in access to subscribers' usage data and insight into usage patterns, offering SPs the opportunity to customize service bundles to address customers' differing usage patterns.

By leveraging a virtualized NFV architecture, service providers gain the advantages of speed and agility in not only delivering services to market faster. By leveraging the signaling and usage data already available in the network, they can now also offer more differentiated and valuable services.

NEW BUSINESS MODELS WITH VIRTUAL IMS

- **Consumer Services** - New fixed offers and continued ramp-up of VoLTE services complemented with VoWiFi mobile interoperability
- **Enterprise Services** - New revenue models and service bundling such as IMS hosting, IP-PBX, vSBC/SIP trunks, web conferencing, video telepresence, RCS, voice recording, toll-free services, and so on
- **Virtual Managed Services** - Shared or network-sliced IMS applications in a centralized or edge (PoP) cloud, spun up as needed.
- **Integrated Communication** - Rich voice, video, messaging communications offers across any access network and multitude of devices natively – smartphones, tablets, wearables, fixed, laptop, etc.

Unlocking a New Service Delivery Model with vCloud NFV

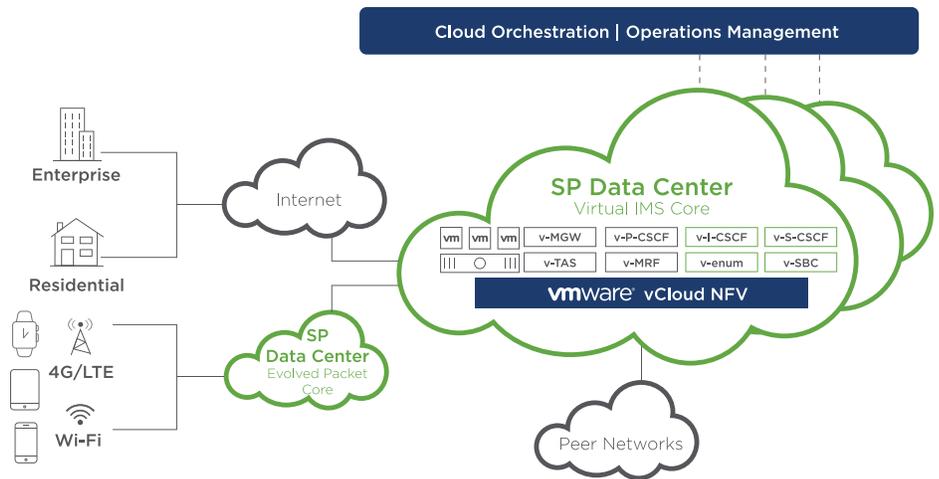
Service providers are constantly looking for new revenue streams to support investments in emerging technology like 5G. The need to support multi-tenant environments in order to enable integrated rich multimedia services into connected devices, and wholesale out voice services to enterprises or third party IT service providers. The ability to expand, augment and modify IMS core functions to enable new business models gives carriers flexibility to provision services at differing SLAs according to client needs.

Virtual IMS creates new and accelerated opportunities for service providers:

- **Time to market** – Service providers can drive new and differentiated voice and data services to market quickly while dynamically scaling up and down as directed by real-time usage and network characteristics.
- **Value-added services** - Virtualizing the IMS core gives service providers the ability to address the rapidly expanding need for enhanced communication services over mobile and fixed networks. Deploying services such as VoLTE and integrated multimedia services brings new innovation.
- **Quality of experience** - Service providers can offer superior quality of service (QoS) and customer experience, further differentiating against other OTT voice services. Network slicing and policy partitioning provide the required service level guarantee across service and customer dimensions.
- **Enhanced service delivery** - Complexities in existing multi-vendor environment and operational processes elongate services enablement and turn-up. NFV allows service providers to automate and simplify network deployments with full service lifecycle operations, service elasticity, intelligent capacity management and segmented policy control.
- **Cloud ready** - vIMS enables convergence and orchestration of hybrid-clouds, offering personalized and contextualized walled-garden and public cloud services. Service providers can embrace the maturing ecosystem of SaaS vendors and integrate best of breed solutions (web conferencing, chat, etc.) into their bundled offers, while maintaining a stronghold in their core offers.
- **Increased interoperability** - With growing penetration of SIP and IPX networks, virtual IMS provides more cost effective interworking and peering while interoperating legacy circuits.

VMWARE vCLOUD NFV DELIVERS:

- **Reliability:** Tested, optimized and proven NFVi in over 70 NFV implementations worldwide
- **Interoperability:** 100+ Telecom Technology Alliance Partners, 15+ Certified NFV Partners through VMware Ready for NFV program
- **Extensibility:** Ability to extend and unify automation and control in a cross-cloud environment: IT, NFV, public and managed clouds
- **Operations:** End-to-end operational intelligence and management from physical layer to Applications and VNFs
- **Support:** VMware first Carrier-Grade Support for NFV



vIMS on VMware vCloud NFV

VMware vCloud NFV is a highly available, multi-tenancy platform that has been tested and proven for service provider requirements. With optimized resource management and prioritization of resources based on operators' workloads, vCloud NFV ensures top performance, scalability and high resiliency for critical communications network services.

By partnering with VMware, service providers see many benefits:

- **Faster deployment and agility with Advanced Networking and Security** - vCloud NFV embeds networking and security functionality and provides a complete set of logical networking elements and services including switching, routing, QoS and monitoring that can be programmatically provisioned and managed. Networks and VNFs are secure from any outside threats with automated, fine-grained policies tied to the virtual machines.
- **Carrier-grade platform** - vCloud NFV is a highly available, multi-tenancy platform that has been tuned for Service Provider requirements. With optimized resource management and prioritization of resources based on current workloads, vCloud NFV ensures top performance and high resiliency for critical network services. In addition, the high performance capabilities offered in vCloud NFV deliver a highly scalable NFVi platform that meets carrier-grade network requirements.
- **Automated and orchestrated network infrastructure** - vCloud NFV provides a Virtualized Infrastructure Manager (VIM) that controls and manages the NFVi compute, storage and network resources. Service providers can automate and orchestrate network infrastructure without worrying about the underlying physical configuration of resources. As a result, SPs can accelerate and simplify network provisioning and launch new services faster to market.

- **Simplified operations and improved network performance with end-to-end operations management and analytics** - vCloud NFV delivers a single pane of glass with 360 degree visibility and monitoring of the platform along with predictive analytics and logging insights to give SPs greater control of their network. With policy-based automation, providers can streamline key network processes and allocate VM resources to rapidly provision and deploy VNFs. In addition, SPs can optimize and manage capacity by dynamically allocating and balancing VMs to guarantee optimal access to VNF resources.
- **Growing Partner ecosystem** - VMware has also brought together a vast and growing partner ecosystem of VNFs for vIMS deployments. Working with those partners, VMware offers pre-certified VMware Ready™ for NFV turnkey solutions that can deliver vIMS in hours or days as opposed to months.

VMware NFV: Removing Key Barriers for Business Transformation

VMware vCloud NFV is a fully integrated, modular and extensible NFV Infrastructure platform. It allows multi-vendor VNFs to share a pooled capacity of resources that can be intelligently orchestrated and automated for the provisioning and delivery of services in a cross-cloud environment. This enables service providers to support an elastic business model of multi-cloud services and personalized offerings while simplifying and automating networks, accelerating time-to-market and reducing TCO.

Learn More

For more information on the VMware vCloud NFV platform, visit <http://www.vmware.com/go/nfv>.

