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The New Mobile Reality

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SERVICE PROVIDER

It seems like it was only a few years ago that the ubiquitous cellular service provider mantra was, "Anytime, Anywhere". Today, that's been replaced with a new one that might be summed up as "Everything Over-the-Top (OTT)!" Driven by the mobile subscriber behavior of Millennials and now Gen Zs, who ravenously consume OTT services such as free voice with Skype and WhatsApp, free music with Spotify and Pandora, near free video services from Netflix, Hulu, and YouTube, and free messaging services such as Instagram, along with other social media, mobile carriers have seen the destruction of their traditional voice, messaging and data business model that profitably funded network investment. Further enabling this OTT consumption and mobile broadband explosion has been the competitive mobile carrier's aggressive move to all you can eat, unlimited data plans, dragging the leading mobile carriers along with them.

New digital cloud-based players such as Amazon (AWS), Google (Cloud), and Microsoft (Azure) have also changed the service delivery game with agile, pay as you grow and on demand pricing models. Businesses can now rapidly deploy platforms, infrastructure, software, and services via the cloud. They expect on demand availability, agility, and cost-effective flexibility for their service offerings in this new digital age.

And adding to the competitive mix, the cable/MSOs have been building a fixed mobile network with their wifi access points and hot spots enabling new services such as voice over Wifi (VoWifi). Comcast has built tens of millions of wifi hot spots in the US with their Xfinity offering that delivers a bifurcated set of channels for the home (secure) and Xfinity (open) from which they can offer competitive wireless services.

Introducing IoT!

What is really challenging for mobile service providers introducing new IoT devices and services is that they are truly sailing into uncharted waters. There is no blueprint for the network requirements and behavior of many new IoT devices and services as they do not necessarily fall into one of the traditional voice, video, and data buckets. Machines will be talking to other machines. How will a new IoT device behave on the network? In the rush to get to market fast, was IoT device security considered?

What are mobile carriers doing about these challenges?

It is clear that mobile carriers cannot continue to operate on past business models. And while the mobile operators are forced to succumb to the lowest common denominator with unlimited, flat pricing models in the near term, they must figure out how to transform their businesses to meet the challenges of this new digital environment in order to survive and thrive.

Mobile carriers are facing the daunting task of upgrading and adding 5G technology to their networks along with new, dedicated Internet of Things (IoT) networks by utilizing virtualization and cloud technology to fundamentally change their cost structure and increase the velocity of service delivery. All these moves increase the complexity of the network and services they deliver. Indeed, 5G is the driver for NFV/SDN adoption as there is simply no other way to cost effectively deliver mobile edge computing.

The Need for Smart Data and Intelligence

5G promises to usher in a new generation of cellular communications capabilities with ultra-low latency and reliability, expanded density (the number of mobile devices supported within a cell site), and dramatically increased bandwidth, all of which are critical attributes to support the growth of a range of IoT devices and services including connected/-autonomous driving vehicles, smart cities, robotics, emergency and security applications, power sensors, health monitors, and much more.

Assuring that these devices are connected, and realizing expected network performance and security, will require enhanced service and security assurance. These solutions must possess extreme scalability and holistic visibility into these new, virtualized infrastructures – as well as legacy network infrastructure – and deliver real-time smart data.

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Having smart data that is extensible to service assurance, business intelligence, and security is essential to mobile carriers who are embarking on the most ambitious and most important transformations in history.

Making the Invisible Visible

With the movement of network infrastructure to virtualization, traditional performance monitoring instrumentation (probing) will not work. New virtual probes that provide visibility down to the VNF level while retaining the micro-service construct, and subscriber session context are now essential if mobile carriers are to retain visibility and perform proactive monitoring and service triage in their hybrid and virtualized network infrastructure. With this multi-layer network of 2G, 3G, 4G infrastructure and new virtualized functions what is needed is visibility at every layer of these underlying and overlay networks. And now with 5G coming in gradually and not as a stand-alone network managing this transition and interoperation presents another case for holistic visibility.

Becoming Automated

Solving the complexity of orchestration is essential to realizing the benefits of automation and unlocking the cost savings and agility promised by virtualization. Utilizing smart data from real-time IP traffic as part of the closed loop automation processes is a key part of that solution.

With Mobile Edge Computing and C-RAN part of the new 5G networks, having lightweight, virtualized instrumentation to "see" IP packets at accelerated speeds and create real-time, extensible data that can inform the policy engine is indispensable.

Building in Service Assurance from the Beginning

As mobile service providers compete in this new digital world, what they need is a software-based, pervasive instrumentation model for service and security assurance to support the ongoing transformation in how carrier service providers (CSPs) operate their networks. With smart visibility and smart data, mobile service providers delivering voice, video, and data services over physical, virtual, and hybrid networks can ensure service assurance continuity on the journey to the cloud while delivering lower costs, higher intelligence, and a continued carrier-grade experience. Avoiding past practice of cobbling service assurance onto existing networks, and instead building in service assurance (and security) from the beginning with 5G/IoT and virtualization will ensure that mobile operators have the data and intelligence they need to manage and monetize traffic in their evolving networks. The answer is still to come but service providers now have a choice to manage these network evolutions proactively.

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SPWP_013_EN-1801 09/2018