A Marriage Made in the Cloud

By Robin Mersh, Chief Executive Officer of the Broadband Forum

Robin Mersh, CEO, Broadband Forum

Robin Mersh joined the Broadband Forum as Chief Operating Officer in July 2006, and was promoted to Chief Executive Officer in July 2010. Robin has authored many articles and has spoken at and chaired many broadband industry conferences and exhibitions. He has worked in the telecommunications industry for over 20 years, starting at Cable & Wireless and then moving on to BT before meeting his wife and moving to the US in 1999. Robin has worked in business development and alliance management for various OSS software companies in the United States, mainly in network and service provisioning and activation, where he negotiated and managed several large OEM agreements. He is originally from Cambridge in the United Kingdom. He received a Bachelor of Arts degree with honors from Queen Mary and Westfield College, University of London in 1992.

With ever-increasing announcements of major market growth and revenues of astonishing proportions, Network Functions Virtualization (NFV) and Software Defined Networking (SDN) are two elements that continue to grab the headlines across the global telecommunications industry.

In terms of the link between NFV and SDN, the two are very closely intertwined. In fact, you cannot really have one without the other. In recent years, NFV has really created the technical necessity for a dynamic management model such as SDN and has created a justifiable business case for SDN implementation by service providers. It is essentially a way of applying SDN, but how far SDN actually goes is hard to judge.

Still in the early adoption phase, SDN continues to gain ground from its origins in datacenter networking having the potential to transform carrier networks and IT, particularly in the broader enterprise and cloud service provider markets. Its ability to deliver automated provisioning, network virtualization and network programmability to data center and enterprise networks, has positioned SDN as a key driver for innovation and changes in networking.

Although it was born out of the goal of cost reduction, it is NFV that is emerging as a driver of new revenue, instigated by the need to optimize carrier networking, and new markets with SDN is a critical necessary component. To put it simply, SDN is a framework for the automatic and dynamic management of multiple network elements with the potential to increase operator agility, accelerate time to revenue, lower costs and provide network resource control to users and applications, radically disrupting the vendor and carrier landscape.

Why the sudden interest in SDN and NFV?

The emergence of viable SDN and NFV solutions comes at a time when operators face many business challenges – smart devices, video content and cloud services are all

- generating double-digit growth in network traffic which operators are struggling to keep up with. Declining revenue per user, market saturation and a volume-based subscriber acquisition model, combined with intense competition from over-the-top (OTT) services are all leading operators to the same inescapable conclusion that in order to provide commercially viable connectivity for all users, the future lies in innovative new services. The urgency is evident by the fact that the industry has witnessed an explosion of service provider activity around NFV and SDN applications with many major global carriers already announcing NFV and SDN initiatives putting pressure on others to follow suit.

From legacy networks to virtualized services

Going back 20 years, the development of DSL had changed the way networks operated and the traffic was delivered on those networks. The functionality needed to deliver new services led to a rapid evolution of network architecture culminating in what we know as the Multi-Service Broadband Network. As the network expanded, millions of new subscribers were added, each accessing multiple broadband services. That in turn led to the growth of data centers to manage the growth, data, services and applications. In the early days the data centers were somewhat separate from the telecoms operators.

It didn't take long for operators to realize that there was a lot of revenue in the data center world and in the services they perform. They also realized that they were being run in almost a ruthless way – with total focus on cost, efficiency, and speed but without the need for specialist equipment. This meant that you could have a generic way of approaching the problem and the market was very open with services being turned on very quickly. Quite understandably operators wanted to profit from these developments.

While one of the key roles of the Broadband Forum has always been the definition of architecture and the interoperability of equipment in the traditional broadband network, in the NFV environment, it needed to re-evaluate. For example what functions can be taken from legacy specialist boxes to the new generic environment? Due diligence was going to be important. What can be virtualized and more importantly, how can this be achieved?

The Broadband Forum saw that the industry must have a well thought-out transition plan, agreed global management platform and an evolved architecture to ensure a smooth migration to the virtually enhanced and dynamically managed network. There is a lot of revenue coming in on the current network and so migration is a vital issue for operators.

Biggest challenge

The Broadband Forum has already been instrumental in creating successful deployment in large parts of the network and its role is to provide new implementation standards and guidance to accelerate the adoption and realization of SDN and NFV's potential for business, mobile and residentially located users.

One of the big questions is what will the hybrid network look like. When technologies jump across from the legacy into the new world, operators will be thinking about more than just cost reductions. Costs were already coming down but the more interesting and tempting bait for them is to be more agile and to have rapid rollout of services going forward. This is where the virtualization is.

With any new technology discussion there is always the question –why change? There are a lot of unknowns out there and you do not know the knock on effect of tampering with something that is already working and generating revenue. Risk mitigation is a big issue which must not be overlooked and how they migrate is critical.

The challenge in simple terms is that in no part of the network is virtualization going to be a foregone conclusion. There might be a discreet part of the network where operators could experiment – enterprise services and mobile are seeing the most activity – but it will come gradually after proven positive experience and broadband will probably come next.

However if you can establish proof of concept, mitigate risk and identify opportunities then it could create a lot of revenue. This is why people think NFV and SDN have such a bright future. In a way that is still just the beginning of the story. Initial successes inevitably lead to questions of "can it scale?" Can it live in a world of interconnected service providers or have we just moved the problem? How much standardization will be required in order to create reliable and interoperable solutions? It can traditionally take years to implement services in a network, but if you can reduce that time down substantially then it will prove very attractive and help to realize new revenues faster.

Embracing the possibilities

The potential to ease pressure on fixed costs whilst also dynamically developing new revenue streams shows the attractiveness to operators of NFV and SDN, but business conditions remain challenging on all fronts including both regulatory issues and in standards development.

Despite this, operators competing for relevance within the digital economy must embrace this disruptive technology and master the shift to SDN; otherwise they face the possibility of being left behind in today's digital world.

The Broadband Forum has played a pivotal role in helping the industry reach the point today where more than 700 million people enjoy broadband without thinking about it. The next challenge is to again play a key role in the expansion of broadband services and faster provisioning across a developing hybrid environment.

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