VIRTUALIZING SON: WHY IT MATTERS

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The telco market has recently been saturated with content, predictions and figures on network function virtualization (NFV). The same could possibly be said for self-organizing networks (SON). Both in their own rights have been major buzz phrases, but little has been discussed on the technologies working in parallel. This article will explore why it is beneficial to operator to deploy SON on top of NFV for optimal network management and why self-organizing networks' (SON) true home is in cloud.

Put simply, the main goals for NFV are to create virtual, flexible and simple mobile networks and in return reducing the cost to upgrade, run and maintain them. In fact, the original aim of NFV was to leverage standard hardware and virtualization technology to allow remote and dynamic provisioning and configuration of networks.

By decoupling network functions from the hardware, it allows for network savings by reducing need for costly hardware upgrades, and allows for greater flexibility and interoperability. Virtualizing mobile networks will eventually help operators reduce lead times and provide faster delivery of new services and functionalities.

The rise of SON

Although SON, as an automatic closed-loop optimization solution, is still a relatively new technology it has been evolving rapidly. Early versions of SON were basic single vendor, single technology solutions that were reactive. They played very much a supportive role to guide manual optimization. SON solutions are rapidly becoming more sophisticated, by enabling multi-vendor and multi-technology optimization through a single and centralized solution.

SON has grown rapidly among operator communities as they look for cost effective ways to improve network overall capacity, efficiency and quality. As 3G and 4G networks mature, centralized-SON (C-SON) is the ideal solution to give these technologies a new lease of life and boost speeds and coverage.

C-SON automatically optimizes operators' networks to deliver capacity when and where it is needed most. It extends coverage and improves network quality and as a result delivers improved quality-of-service (QoS) for subscribers. Additionally, it reduces network complexity by delivering network optimization through one single solution, eliminating the need for multiple optimization tools.

As with any great technology, SON is continuing to evolve. One of the latest developments has been its capability to utilize user-specific data, take into account network conditions and intelligently optimize mobile networks in real-time.

SON in the Cloud

Following SON, NFV is still a nascent technology which is likely to develop even more over time. But with more operators looking to move their networks towards virtualization, it makes sense for SON to reform its optimization software to NFV's principles and methodologies. As mobile networks become virtualized it is vital that SON can also work within a virtual environment, so it makes sense for SON to be in the cloud.

Virtualizing SON and making it NFV compatible will enable the centralized control of the network through virtual machines, and merging the benefits of both NFV and SON to provide ultimate network management.

Although the timeframe for true virtualization of mobile networks is still undecided, with NFV pioneers like Alcatel-Lucent pushing initiatives like its CloudBand Ecosystem, and IBM's SmartCloud Orchestrator expect industry adoption to increase. Open communities with vendors and developers working together will inevitably help NFV get to market faster. Therefore, it is vital that SON providers look beyond the mobile networks of today. Instead, look to what they will become in the not so distant future – on the carrier cloud.