As CSPs virtualise their networks a new approach to OSS called Lifecycle Service Orchestration is needed if they are to achieve all the benefits on offer, writes Chris Purdy

Network functions virtualisation (NFV) presents communications service providers (CSPs) with an opportunity to radically alter the structure of their businesses. Current levels of capital and operational expenditure are unsustainable and CSPs urgently need to move to a new technical foundation that enables them not only to reduce costs of operation but also to generate new revenues from agile service creation.

The transition to virtualised networks isn't just about swapping out function-specific physical hardware and replacing it with commodity equipment. There's a substantially increased management burden associated with virtualisation because it is much more difficult to manage a network that is constantly changing.

That heightened complexity accounts for CSPs trialling NFV in small pockets of their businesses. They're going through a learning curve and want to make sure they have the operations capability in place to handle all the moving parts that will be involved in mainstream NFV deployment.

Network operations will be critical here but not in its traditional form or approach so technology vendors are putting forward a series of new approaches to address the operational challenges posed by NFV. The industry has coined the term Lifecycle Service Orchestration (LSO) to describe this new generation of operational support software (OSS) and CENX is an early market mover. CENX avoids using names such as next generation OSS or real-time OSS because it regards these as only focusing on an isolated single aspect of the virtualisation issues CSPs face.

It’s important to recognise that virtualised environments will not benefit from a replication of the traditional OSS stack, with a continuation of the stovepiped architecture of previous generations. Instead, those individual functions, such as inventory, fault and performance, remain as fundamental requirements but the data from them needs to be extracted horizontally as well as vertically to provide an accurate and real-time picture of the complete service delivery and creation environment.

The situation is also made more complex by the nature of the introduction of NFV and software defined networking (SDN) which mean that, in addition to all the traditional systems, SDN controllers and NFV service orchestrators are also required in the MANO (management and orchestration) environment of virtualised telecoms operations.

LSO abstracts away that complexity by spanning all the functional blocks required to operate a service from initial design and configuration, turn-up testing, performance monitoring and onwards. CENX has developed its Cortx Service Orchestrator, which it sells to all types of CSPs as well as cloud and data centre service providers. The system continuously audits data from the network and traditional, stove-piped OSS. It then feeds that into CENX’s service information model which correlates all this information to enable full lifecycle service planning and fulfilment and service management and assurance.

All of these functions and insights are integrated into Cortx Service Orchestrator’s service visualisation capability, which is a powerful graphical user interface (GUI) that enables the CSP user to visualise the service topology and its real-time state. Significantly the visualisation of the service information model is achieved through an automated process that resolves the inconsistencies of data from existing systems. It is critical that a single, authoritative, trusted view of the network is created and maintained in the service information model.
This is significant because the model forms the foundation of the CSP’s knowledge of the service and, using the service visualisation GUI, users can communicate directly with network management systems or network equipment if required to manage a service. In addition, the GUI integrates to test and measurement equipment, creating a single pane of glass from which a service is holistically managed.

To achieve this accurately and enable the agile introduction of new services, it is critical that the service information is continually updated in real-time to reflect the dynamic nature of the NFV environment. That requires the network operations to be real-time, as well. Current OSS vendors are trying to enhance their systems to do this but the stovepiped architecture limits the breadth of utility and visibility. What’s really needed is software that is purpose-built for lifecycle orchestration of services over virtualised architecture.

This is what CENX has developed with Cortx Service Orchestrator. Network big data is used to feed the system’s analytics engine which produces actionable, visualised intelligence. This enables CSPs to gain service agility by achieving up to 80% reduction in the time required to turn up services. In addition, because the data is accurate and can easily be analysed through the GUI, CSPs can achieve a 65% decrease in triage time. Finally, a 70% improvement in inventory accuracy results in reduced operations costs for CSPs.

With benefits such as these on offer, it’s clear that it is necessary to redefine OSS and recognise the need for LSO which is focused on enabling the functions and analysis of SDN, NFV, as well as handling the hybrid, part-virtualised environment. With lifecycle service orchestration, CENX is showing how, through a single pane of glass, CSPs can have full visibility across physical and virtual networks with no need for separate systems.

That will allow CSPs to unlock the full service agility and revenue generation benefits of virtualisation and take them beyond the initial cost saving benefits the technologies offer.