Telco OS: A next-gen operations system to enable telecom transformation

To transform traditional business models through digitization and internetization, the new agile digital operations model is the key to synergize business operations (e.g. agile business process) with infrastructure operations (e.g. automated cross data center resource allocation through SDN and NFV) to enable new open digital ecosystems and real time, open, all online, DIY, and social (ROADS) service experiences. This is Huawei’s value proposition, and Telco OS is Huawei’s concrete solution to achieve it.

To conduct a beautiful symphony, an orchestra needs to play together under the baton of a conductor. To make ICT operators work as harmoniously as a symphony, what operations model should be used? How can Telco OS be used to orchestrate ICT operations? How can a good Internet-like experience be guaranteed for enterprises, partners and individuals?

A vision for the future of ICT operators

Huawei’s solutions allow SMEs to quickly and effectively establish their business by DIY method, run the business, and manage ICT resources through automated digital operations. Take the example of a small gaming startup that wants to quickly set up e-commerce and roll out a new game to the market. Traditional CSPs are impossible to achieve this in a timely and efficient manner. But by using the DIY method, the gaming company can quickly get their business online, setting up business and operations supporting systems, customer interaction and care systems (portal, mobile app etc), and release new services in an hourly timeframe. In addition, it can provide big data analytics capabilities for business operations and real-time decisions to help the company achieve rapid growth, and it can also help the timely automatic scaling of ICT resources including network bandwidth, IT computing and storage to meet business growth.

This is ROADS operations. Digital operators are now able to support large enterprises, and help SMEs launch new business and services more quickly, enabling them to provide these kind of ROADS capabilities to their customers.

How can ROADS capabilities benefit
individual users? Take the example of a user who wants to watch a 4K HD video only to find the OTT cannot provide a good experience due to bandwidth constraints. When this happens, the digital operator can proactively offer a bundle with 4K plus 50Mbps bandwidth, and allow this user to carry it around for a premium experience. Moreover, users could also subscribe the bundle through DIY, share this kind of good experience with friends via social networks, and give their friends the opportunity to enjoy a similar service.

To provide a ROADS user experience, the network must first be able to support ROADS capabilities, and this can be realized across the entire infrastructure by virtualization.

Numerous studies have shown that ROADS will be a major developmental driving force for networks of the future. In the future, operators will need to carry out infrastructure virtualization to provide better ROADS capabilities, and leverage a series of technologies including Cloud, SDN and NFV to achieve this.

However this is not enough. Operators also need new open digital business models, which are enabled by transforming traditional business models through digitization and internetization. In terms of services, new business models enable traditional businesses to provide digital services and cloud services, as well as various kinds of industrial Internet applications, thus maximizing the value of user experience. In order to build new business models, new operations models are essential to synergize agile business process with infrastructure operations (e.g. data centers through technologies such as SDN and NFV), so that new ecosystems can be built and ROADS experience can be supported. This is Huawei’s value proposition, and Telco OS is Huawei’s concrete solution to achieve it.

The Telco OS is the next generation digital operation system for carriers. It is more than a platform or just some software and hardware products. It can provide different capabilities for different users. For end users, it can provide an online digital market place for digital services and products, including telco products and other products. For operators themselves, the platform can help them achieve development and operations goals, for example developing new services, marketing activities, or providing new sets of solutions through agile operations. For business partners, it can serve as a channel and business development platform. So Telco OS is in fact a business enabling system for operators, partners and end users alike.

The three key components

Just as an orchestra has some lead players, Telco OS has several key components. These components provide key capabilities for business, operations, and intelligence support. Just as every orchestra has a conductor, Telco OS also possesses the orchestration capability to orchestrate services, business, and infrastructure operations based on user needs and ROADS requirements, so as to achieve better collaboration across the entire business process.

There are three sub-systems in Telco OS. In fact, they are not just three specific products, but three different kinds of capability sets.

Business Enabling System (BES): Enabling business agility

BES can be viewed as a next-generation BSS system. It includes all the capabilities of BSS, but it is more than a BSS – it is a business enabling system. The most important keyword for a business enabling system is “agility”. BES can support digital services and realize agile business. It can ensure a ROADS user experience and facilitate collaboration with digital partners.

So, what is the strategy of BES deployment?
BES can be initiated with the deployment of a new user experience and new services, followed by the consolidation of existing services and operations. BES may integrate many back-end BSS capabilities with the new digitalized front-end. It not only encompasses the hardware, but also includes services, templates, business rules, business process and business management. So BES is all these capabilities integrated together by the Orchestration function.

**Big data: Enabling intelligent operations**

Operational intelligence depends on big data, which is the brain of the entire system, and big data analytics can be used to guarantee user experience and achieve perfect operations.

Fully leveraging big data not only helps companies capture operations status, such as data monitoring and analysis, but it can also help them offer more innovative services. Big data can provide useful insights for business decisions, and perform better adaptive orchestration to enable personalized automated business processes based on real-time status. This means per process per user journey, since user demand is changing all the time and business operations have to adapt to that change for the best user experience and best business benefits.

**Infrastructure Enabling System (IES): Enabling ICT infrastructure automation**

IES enables infrastructure operation automation, which includes entire infrastructure management from cloud management to SDN and NFV.

Infrastructure operation automation is very complicated, and includes the multiple levels of lifecycle management such as ICT infrastructure, service and customer experience lifecycles at various customer levels and different SLAs. Each lifecycle consists of multiple phases such as ICT infrastructure planning/design, deployment and assurance, service innovation, and fulfilment and assurance. Moreover, ICT infrastructure operations should leverage and streamline different levels of lifecycles from the user perspective for a timely and on-demand experience – in other words ROADS capabilities.

The implementation of IES will foster a new business domain. It will play a significant role in SDN, NFV and cloud operation management. Take, for example, NFV management and orchestration (MANO). Instead of implementing a standalone silo solution/product, the MANO can be implemented as an application running on Telco OS that includes services, back-end and resources orchestration. IES will support a large number of other applications besides MANO, in the context of ICT infrastructure operations that support administration and maintenance.

Huawei has allocated significant resources to drive the business success of Telco OS. Huawei has conducted commercial trials with operators, including a very comprehensive pilot project with China Unicom. In this project, Huawei has provided a range of products including big data analytics and monetization. At present, the project has achieved initial positive results. In addition, Huawei works with China Mobile to transform its traditional customer relationship management (CRM) system into a digital customer service center to support O2O, DIY and open digital stores.

In summary, Telco transformation is driven by the change of end user behaviours brought by the Internet and digitalization. ROADS becomes the new benchmark of user demand, which opens up new business opportunities. A new agile digital operation model is the key to realizing ROADS capabilities and delivering business benefits.