



▶ *E-Guide*

SDN and NFV: The Keys to Successful Telecom Transformation

In this E-Guide:

Hear from CIMI Corporation President Tom Nolle about why he thinks NFV and SDN will help drive telecom transformation by generating new services revenue and lower operating costs with cloud deployment principles, rather than a traditional networking approach.

How NFV and SDN
could shape the future
of telecom

How NFV and SDN could shape the future of telecom

Tom Nolle, President

Transforming telecom networks has been the goal for more than a decade, and it has yet to be achieved to make the future of telecom work. It's not even really clear to most network operators *how* transformation can be reached. Maybe the reason is because the industry has seized on a few technologies like software-defined networking, or SDN, and network functions virtualization, or NFV, and believes that adopting them will fix everything.

While both NFV and SDN have a role in transformation, they have to be applied with a healthy dose of new realism. This means using everything NFV and SDN can do now in order to support them in the long term.

One new realism truth is operators' future profits will be based on maximizing average revenue per user, then minimizing cost. This is now recognized as the model for mobile service success and is likely the model for video streaming services. It has to be accepted as the first step toward profit planning and for the introduction of new network technology innovations in telecom's future.

It is critical for a broad push toward profits to start with new features designed to attract and sustain user commitments. The reason is Opex is higher than Capex for operators. And in the Opex space, customer acquisition and retention is the largest single cost. The best service lifecycle management system in the world can't help operators sell, and it can only

How NFV and SDN could shape the future of telecom

How NFV and SDN
could shape the future
of telecom

have a limited impact on reducing churn. Sticky services -- those that are self-perpetuating in terms of commitment -- are the real key.

Features make services sticky, of course. This is where NFV comes in, but not for device replacement. Implementation aside, a narrow NFV target -- like using virtual customer premises equipment for business services -- just can't move the ball or bootstrap later NFV commitments.

Cloud-native NFV and SDN approach

Operators need a different approach. Fortunately, it's not a matter of spending another five years changing specifications. The right approach to telecom transformation is simply to recognize that cloud-hosted features should be hosted and orchestrated as cloud features, not as network features.

We already know the Capex and Opex benefits of substituting hosted features for physical devices is limited, so the real value of NFV is to create cloud-hosted, composable features. Forget the NFV-related terms, like MANO, virtualized infrastructure manager, virtual network functions manager, and focus instead on simply orchestrating useful features into services using traditional cloud tools and elements. Most of the cloud-hosted features will create over-the-top (OTT) services or service additions, which is where most operators think the real revenue potential is for the future of telecom.

The range of OTT features that could be orchestrated into services depends on the specific market focus of the operators and their current commitment to OTT services. In some markets, telecom providers have been involved in OTT services directly for years, and these operators already have specific opportunity targets and even some technology in place.

How NFV and SDN
could shape the future
of telecom

Broadly speaking, video and advertising are rated highest by operators themselves. Home and facility control and security will be next. All of these services have the advantage of being profit centers from the start, and many can be launched without excessive first costs.

The agile orchestration of new features is where SDN comes into the picture in the future of telecom. If a new service is a structure composed of features and connections hosted in any convenient edge or metro data center, then getting all of the pieces stitched together is a challenge using current network technology. That's particularly true if the result has to be fully secured and cost-effective at the same time. SDN offers the ability to create service subnetworks that are as fully independent as operators need.

SDN is already a given in the world of cloud data centers, so it's logical to assume as service feature hosting expands and involves multiple data centers, SDN would be extended to support the larger mission. Creating and maintaining these connections has to be synchronized with decisions on failover, scale and redeployment due to service changes. So, a common orchestration approach for data center and WAN is important. SDN can provide that, because it already does what's necessary within the data center.

Assessing telecom cost reduction

How NFV and SDN could shape the future of telecom

On the cost side, the goal for operators is to fully exploit the technology that makes it possible to orchestrate NFV and SDN. The agility both technologies can deliver depends on having them surrounded by orchestration tools that offer near-zero-touch -- if not complete zero-touch -- automation of service lifecycle processes. Because SDN and NFV have software APIs for configuration, they're generally easy to adapt to lifecycle orchestration, where plugins or secondary controllers may be needed to control networks of physical devices. When some service features are already being hosted, it will make sense to consider even basic connection service features as candidates for NFV and SDN implementation.

NFV and SDN can't secure the necessary cost reductions without the aid of service lifecycle automation, which is something most advocates for both technologies now recognize. How that's going to be attained is far from clear at this point, however. An ETSI group dedicated to zero-touch automation and the AT&T ECOMP SDN project has been open-sourced as part of the Linux Foundation's overall efforts in the telecom space. It's too early to say if either of these efforts will pay off, or when.

The good news is a shift is underway for the future of telecom that includes a cloud-native vision of both NFV and SDN. Cloud orchestration tools like Kubernetes could step in to solve much, if not all, of the service lifecycle automation problem, assuming the deployment of both NFV and SDN follow cloud principles, rather than being defined by independent

The right approach to telecom transformation is simply to recognize that cloud-hosted features should be hosted and orchestrated as cloud features, not as network features.

networking standards bodies more closely aligned to network hardware and legacy services.

A cloud-native perspective is the real key to all of this, on both the new revenue and cost reduction side. If NFV and SDN follow a cloud-centric path to deployment, rather than the more traditional network-centric approach both technologies were founded on, the revenue boosters and cost-managing elements of both technologies can combine with a common, overarching, lifecycle automation vision. That will make both SDN and NFV self-sustaining in the future of telecom. Without that cloud-native view, both technologies are likely to fall short of expectations.

How NFV and SDN
could shape the future
of telecom