



Road Maps to Virtualizing Voice

By Kevin Dundon

Voice is the traditional business of telcos, and it remains big business. But the traditional networks that deliver phone services are big headaches and cost centers. As TDM and VoIP 1.0 networks near end-of-life, telcos face decisions on how to evolve their voice networks to be more agile, competitive, and profitable.

What has become abundantly clear is that web-scale and virtualized software will be at the heart of those new networks. What is less clear is the path forward: how should telcos embrace Cloud technologies and migrate to a next-generation virtualized software solution?

In this article I'll provide some insights from my conversations with service providers and equipment vendors that aim to help you cut through the NFV marketing hype, and to build a practical roadmap that delivers on 3 important transformation outcomes.

Voice Remains Important

It doesn't get the attention of broadband, Wi-Fi, or anything Apple releases, but voice services remain a huge market at \$71 billion (Atlantic ACM) in North America. While there are broad revenue declines, there are new growth opportunities in business VoIP and UC services, especially addressing small-medium business who are still largely stuck on outdated systems.

Further, 81% of respondents to a recent *Heavy Reading* study, *Migrating Service Provider Voice Infrastructure to the Cloud*, said that "voice in our portfolio helps drive adoption/growth of other services", reinforcing the role of the bundle and how communication services will remain useful to providers and users alike. As a recent example, Google Fiber recently introduced fixed-line VoIP as a bundle option for its broadband.

Challenging Market Forces

However, the voice market faces many headwinds: regulatory shifts, new competition, phone substitution options and customer behavior changes. Powerful forces will move much of the \$71 billion revenue from traditional service providers unless they respond.

Atlantic ACM anticipates a 71% growth in VoIP consumer voice revenue from 2014 to 2020 and telcos need to adapt rapidly to participate in that shift.

● Revenue ● Costs

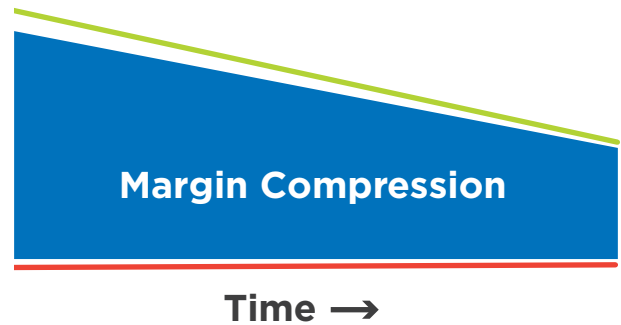


Figure 1.

Cloud OTT voice providers are generally winning this VoIP transition and with better margins than telcos.

These challenging market forces result in margin compression as revenue trends down and costs are flat to increasing. This is especially true with legacy TDM networks. Yankee Group projected a 100% increase in the average cost per user on TDM technology between 2014 and 2020. (See Figure 1.)

In addition to the outside market forces, today's voice networks are largely obsolete, and are crushing service providers with complexity and lack of innovation. In that same *Heavy Reading* study, 36% of communication service provider respondents believe their current voice platform will reach end-of-life in the next 3 years. (See Figure 2.)

Circuit switching equipment and early generation VoIP systems are not able to adapt to the needs of VoIP 2.0. The next solution needs to be easier to

Voice Network Infrastructure

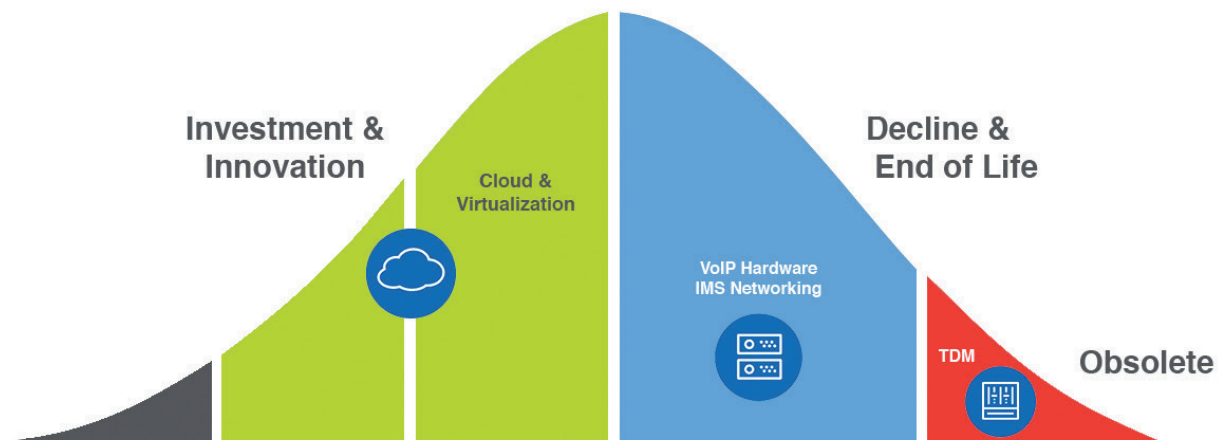


Figure 2. Lifecycle for voice network infrastructure

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manage, and more agile and extensible, and be delivered with a transformative business model that supports the future of voice and unified communications. Telco networks need to change -- and the sooner, the better. And change that everyone is talking about today is based on virtualization and software defined network functions.

2 Paths to Virtualization

Clearly, service providers have to start on this virtualization journey. There are 2 starkly different paths for them to choose from.

Path #1: Build Your NFV VoIP Network

Basically, do it again: build a new network. Purchase, integrate, and operate all the network functions virtualization infrastructure (NFVI) and virtual network

Build NFV Network	Criteria	Cloud Source Virtualized Voice
If the 5-year transformation investment will yield a sustainably lower cost operational network in the future	Cost Reduction	If purchasing a cloud service is lower cost than your current total cost of ownership.
If you are going to invest in internal product development for voice to compete	Product Agility/ Revenue growth	If your voice vendor will be investing in product R&D to enable you to have a competitive, growing voice product over time
If you can prove that your operations team will have step change simplified operations in 5 years	Simplify Operations	If your vendor can prove that flow-through provisioning, network management and operational overhead for voice will be reduced immediately
If voice network architecture is mandated to be NFV—consistent with other services and it will be controlled by a single MANO layer	Architecture	If you want to achieve the business outcomes of virtualization without the complexity of a NFV build
If you are going to invest in staffing and training to bring the virtualization skills in-house	Staffing	If the necessary skill set will be a challenge to acquire or you want to invest in other areas of staff development
If you can afford to make investments long term to achieve business benefits in 3-5 years	Timing	If you need business benefit in the next 6-12 months
If you want to limit your future vendor dependence on VNFs	Vendor Dependence	If you are willing to partner with a turnkey voice vendor
If you are going to retool your BSS/OSS from static to real-time	BSS/OSS	If you don't want to be forced to change your BSS/OSS at the same time

Figure 3. NFV Network Chart

functions (VNFs) for SBCs, softswitches, app servers, etc. Instead of a monolithic Class 5 switch or a few softswitch elements, in the NFV world you stitch together the now 20-30 different functions together to deliver dial tone. Overlay an IMS architecture (or something similar) over the NFV one.

Some of these elements are being virtualized by vendors today, others are still in development, so it will be some time before a network can be fully virtualized. This approach is a repeat of the traditional business model requiring CapEx and a combination of fixed and variable OpEx.

Path #2: Cloud Source Virtualized Voice

Purchase a Cloud-hosted virtualized software solution that we refer to as a Cloud voice platform. It pre-integrates all the core functional elements, server/storage infrastructure, and management and orchestration requirements, and is provided as a turnkey solution. Cloud sourcing comes with a Cloud business model as well: 100% success-based OpEx.

In full disclosure, here at Alianza we provide a Cloud voice platform. But we are not alone; a whole category is emerging because the challenges of building a new NFV voice network are significant.

Both approaches have merit and make sense for different service provider environments.

Focus on Desired Business Outcomes

The state of voice demands transformation, but what are the key business outcomes that need to be measured? Most vendor discussions about NFV and SDN focus on the technology and not so much on business justification. To help choose a path, the focus should be on the end results telcos want to achieve.

Most service providers I talk to want 3 business outcomes as part of their network transformation:

1. Lower Total Cost of Ownership -- reducing (or eliminating) CapEx and, more importantly, materially impacting OpEx. For many years, the top barriers to IMS deployment were not technical, but business-case. The same holds for NFV today.

2. Simplify Operations -- through process automation and flow-through provisioning across functional elements and providing APIs to integrate voice management easily into back office systems.

3. Product Agility to Grow Revenue -- this involves rapid provisioning of services, as well as a focus on the frequent release of new capabilities and the ability to embed voice in new applications and systems.

Choose Your Virtualization Adventure

The path to building a new NFV-based voice network is becoming clearer based on standard maturation and vendor R&D. It aligns with the overall network virtualization movement, and is well suited to the providers with the capital, resources, and the timeframes to embark on that virtualization transformation.

Cloud voice platforms are an emerging solution option that provides a cost-effective, flexible alternative to building out a next-generation voice network. This also allows a larger number of service providers an affordable and fast path to the benefits of a virtualized voice solution.

Given the revenue at stake and the aging network infrastructure, the time is now to draw up new road maps. If you are responsible for executing on a voice network transformation plan at your company, this table (See Figure 3.) should help provide a framework for decision making. ■



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