www.pipelinepub.com
Volume 20, Issue 12

Why Network Modernization is Key to Real Transformation

By: Maureen Bundy

Today's business relies more and more on digital performance, speed and agility. To keep pace with these demands, communications service providers (CSPs) and network operators are continually pressured to enhance customer experience with faster speeds, lower latency, and a new generation of innovative services.

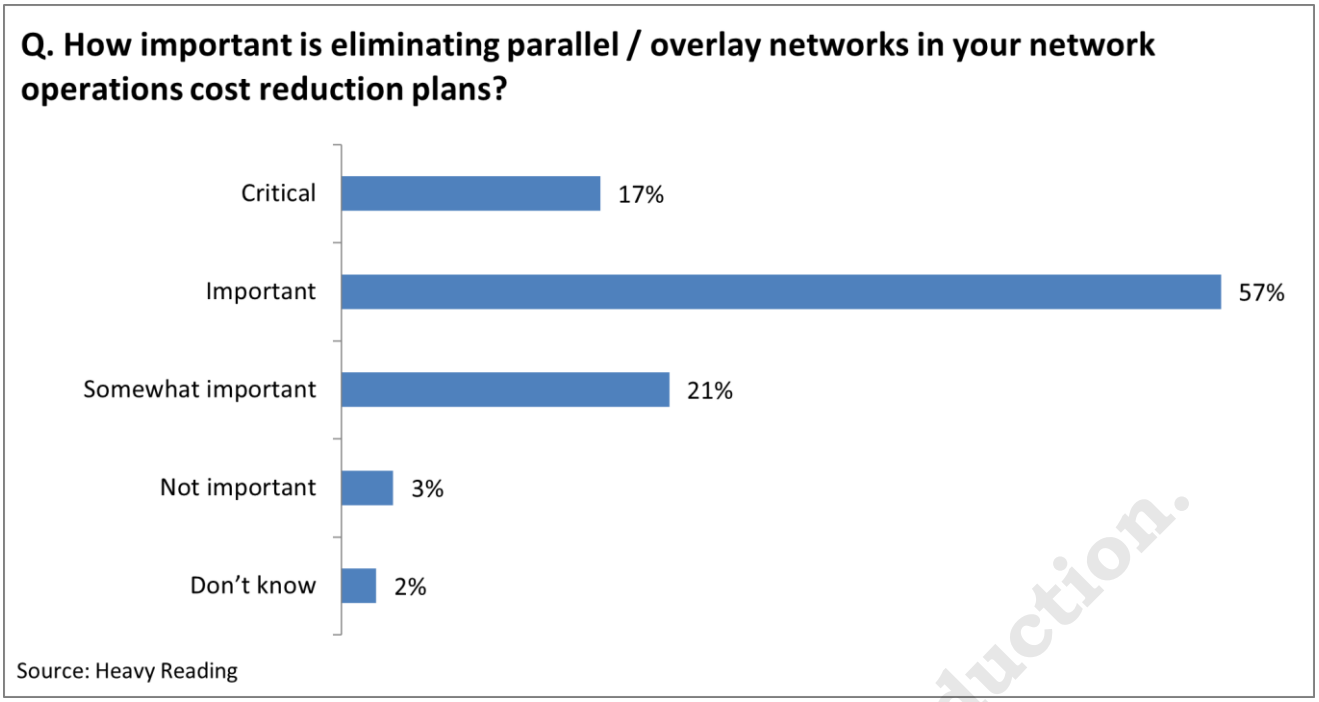
Over time, legacy network architecture becomes increasingly inefficient and outdated, making it costly and time-consuming to
maintain and operate. The older equipment tends to be larger than today's, occupying valuable floor space, as well as producing excessive heat and consuming large amounts of power. In fact, some network operators have seen energy cost increases outpace their sales growth by more than 50 percent in recent years.

Moreover, the inefficiency of operating legacy equipment prevents network operators from meeting energy efficiency standards and sustainability objectives. For example, just one rack of legacy equipment can generate as much as 14 metric tons of carbon dioxide each year. For those CSPs operating in locations where state and local governments have imposed laws aimed at reducing greenhouse gas emissions, failure to comply with emissions regulations can bring hefty penalties.

Laying a Path to Network Modernization

Thankfully, network modernization does not have to be an all or nothing endeavor, and optimization can be accomplished gradually. When planning network modernization projects, however, the best practice is to begin with activities that will have the most impact in the least time, maximizing return on investment (ROI) d.

Traditionally, CSPs have relied on the use of overlay networks as a means to quickly deploy new technologies, functionalities, or services. The recognition of a need for change is widespread among network operators, as illustrated in the chart on next page:



Recent advancements in automated tools powered by artificial intelligence (AI) and machine learning (ML) are invaluable in maximizing network modernization success. With access to AI-powered optimization algorithms, CSPs can automate labor-intensive data harvesting and analysis to reduce overall manual effort.

Migrating legacy networks to newer, more sustainable technologies helps CSPs reduce power consumption and increase reuse of resources, thereby improving efficiency, cutting costs and saving time. Furthermore, a focus on the latest infrastructure also enables and encourages innovation, setting the stage for the introduction of profitable new services and increasing ROI.

Of course, migrating live network traffic presents the mission-critical challenge of assuring quality of service (QoS) and customer experience for existing subscribers, so it's important to ensure that network engineers have sufficient experience and expertise. Nevertheless, swapping out or retiring inefficient legacy equipment for more sustainable technology presents substantial benefits and cost savings.

Ultimately, for CSPs to excel in the face of fierce competition and rapid change, they must continually evolve, optimize, and modernize their networks to be more sustainable, economical, and innovative. A proactive, well-planned approach to network modernization empowers the transformation today's CSPs need to deliver next-generation services, bolster competitive advantages, and increase profitability. By embracing sustainable transformation in their network modernization practices, network operators not only reduce emissions and demonstrate progress towards Net Zero, but also build a more sustainable business model for the future.