

Unlock the Value of Your Metro Ethernet Network with Managed Services

Overview

Commercial services continue to be a strong growth engine for cable operators. This ongoing growth is critically important, as revenue from legacy residential video services continues to stagnate or, even worse for some operators, has already begun to decline.

Across the cable industry, business services are growing 12% annually, with some operators experiencing growth rates as high as 20%. Video services account for roughly 42% of cable industry revenue, and business services contribute approximately 11% of cable top line revenue on average.¹

As cable executives and product managers look to business services to help them make up for lost revenue in an increasingly competitive content arena, those services represent a small percentage of cable's overall income. However, there is plenty of opportunity for growth. For instance:

- The U.S. telecom services market accounts for \$350 billion of the annual \$1 trillion U.S. IT market.²
- The metro Ethernet services market is projected to post an 11% CAGR over the next four years, expanding from \$52 billion in 2016 to \$65 billion by 2020.³

The healthy growth of the metro Ethernet services market is driven by a shift to cloud-based business applications and services. Additionally, businesses are making the transition from legacy DSL and time-division multiplexing (TDM)-based private line services to Ethernet connectivity because they are exhausting the bandwidth available on those lower speed access technologies. Most customers are favoring the less expensive metro Ethernet connections over alternative, higher priced IP MPLS VPN services.

As cable operators look to capitalize on the shift to metro Ethernet services, they will need to remain focused on two things:

- Building a managed service platform that will enable them to deliver a portfolio of services that allows them to compete with regional incumbent and larger national telecom competitors

- Automating their backend systems and provisioning so that they can scale with market demand and deliver the flexibility and agility demanded by their customers

Top Business Challenges

The growth in metro Ethernet services is good news for cable. Many operators have adopted metro Ethernet solutions, certified by the MEF, formally known as the Metro Ethernet Forum, to compete against their incumbent competitors' legacy TDM and IP MPLS VPN services. Cable operators have done well by leveraging MEF-certified metro Ethernet services and Data over Cable Service Interface Specifications (DOCSIS)-based Internet access services to penetrate the small and midsize (SMB) enterprise markets, enabling them to grow their business services revenue at a faster pace than the market itself. In order to maintain this pace, cable operators will not only have to grow their existing customer base, they will also need to broaden their target markets to include larger regional and national enterprise accounts.

This pivot will require operators to expand their portfolio of services while continuing to focus on customer satisfaction, security, and differentiation, putting their customers in the driver's seat when it comes to service definition, capacity planning, reporting, and management.

The carrier services market, however, is becoming fiercely competitive. Technologies such as SDN and Network Functions Virtualization (NFV) have allowed new competitors to enter the market, delivering cloud-based managed services over local access infrastructure. Additionally, incumbent regional, national, and global carriers are using these technologies to deliver services cost effectively to the SMB market, which historically has been cable's target.

Customers are also looking to control costs as they outsource more of their IT infrastructure investments to managed service providers. As more workflows move to the cloud, there is an increasing dependence on the WAN. IT managers are looking for service providers who can fill most, if not all, of their IT infrastructure needs—including cloud connectivity, cloud-based services, and the ability to deploy, customize, and manage their services themselves—from a customer portal.

¹Source: Juniper analysis; cable industry 10K reports

²IHS, Carrier Ethernet Equipment Annual Market Size and Forecasts, May 2015

³IHS Technology: Ethernet and IP MPLS VPN Services Annual Market Report



In order to remain competitive and successful, cable operators will need to:

- Improve customer satisfaction scores, which are currently below the industry average⁴
- Address the increased competition in the SMB carrier services market
- Deliver new services both on-net and off, so they can target larger national accounts
- Displace incumbents in mid to large enterprise segments
- Provide agile and flexible solutions that allow customers to take greater control and ownership of their services
- Automate processes for greater efficiency to improve their current profitability

Top Technical Challenges

Cable business clients receive services today over multiple access network types: hybrid fiber coaxial (HFC), metro Ethernet, xPON, DSL, and optical infrastructure. While some operators have decided to deploy all new business services over metro Ethernet, the mix of access network types limits their ability to deliver infrastructure-based connectivity services ubiquitously across the network to all of their end-user locations.

Few cable operators have complete access network coverage across all metro areas in a given region, limiting their ability to address business customers with locations outside their local areas. While consolidation has enabled some cable operators to increase their footprint, this consolidation has created a situation where operators have multiple disparate backend systems, making it difficult to automate service delivery ubiquitously across regions.

While the metro Ethernet private networks that cable uses to deliver their premium business services today are secure and their performance is assured, they are not agile, nor are they responsive to the rapid changes seen regularly in the market today. They are L2 networks with limited ability to integrate additional new services and no interworking across alternative access networks like DOCSIS and passive optical network (PON).

Moving forward, the cable business is facing the following technical challenges with respect to service delivery:

- Multiple infrastructure types
- Limited regional footprint reach
- Disparate back-office systems with manual processes
- Unsecure basic Internet access services
- Lack of metro Ethernet service agility

Juniper Solution

The Juniper Networks® Cloud CPE solution, combined with the [MEF Third Network](#), provides the cable industry with a centrally orchestrated network service platform that delivers end-to-end services, globally and at scale, across multi-provider networks with the agility and ubiquity of the Internet and the assurance and security of carrier Ethernet (CE 2.0).

Delivering a distributed network services platform from the cloud offers the following benefits:

- The ubiquity of the Internet combined with the assurance and security of CE 2.0
- An agile, virtualized carrier Ethernet infrastructure that can be provisioned quickly and efficiently
- End-to-end orchestration of services, globally, across multiple providers
- Graphic design tools that spin up and modify new services, both on-net and off
- Self-care portals that put the customer in the driver's seat
- Telemetry and analytics that provide greater visibility into network and service performance
- A portfolio of virtualized network function (VNF)-based managed service options that can be delivered across multiple access network types
- Professional services that offer support for the design, integration, and validation of the solution

When cable operators combine the Juniper Networks Cloud CPE solution with their MEF Third Network infrastructure, they unlock the value of their Third Network by expanding their portfolio of managed services beyond basic Internet access, voice, and data to encompass a complete portfolio of managed services.

Existing Cable Business Services Today	Cloud CPE-Based Cable Managed Services
<ul style="list-style-type: none"> • Internet access • Business voice • Business video • E-mail • Web hosting and storage • Conferencing (audio, video) 	<ul style="list-style-type: none"> • Managed security • Managed router (WAN) • Managed WAN optimization • Managed Wi-Fi • Managed cloud connect services • Managed SD-WAN • Managed voice, unified communications (UC)

⁴[JD Power 2016 U.S. Business Wireline Satisfaction Study Report](#)

Juniper Cloud CPE Solution Components

Juniper's complete Cloud CPE solution portfolio includes the following products and services:

- **Juniper Networks Contrail® Service Orchestration:** Orchestrates the entire service life cycle, from creation to delivery, in a modular open framework
- **Juniper Networks Contrail Cloud Platform:** Combines Juniper Networks Contrail Networking™ with Juniper's OpenStack distribution to provide turnkey cloud orchestration and automation
- **Juniper Networks vMX Virtual Router:** Provides a virtualized, full-featured, carrier-grade router ideal for NFV environments, rapid service introduction, and cost-effective service scale-out
- **Juniper Networks vSRX Virtual Firewall:** Provides high-performance network security in a virtual form factor for rapid deployment and scale-out environments
- **Juniper Networks ACX Series Universal Access Routers:** Provides MEF CE 2.0-certified hardened routers that address use cases of business Ethernet services, residential aggregation, small cell, mobile backhaul, and industrial field area networks
- **Juniper Networks SRX Series Services Gateways:** Enables the consolidation of security, routing, switching, and WAN connectivity in a portfolio of devices ranging from small desktop platforms, designed to secure small businesses and branch offices, to rack-mounted models intended for the largest data centers
- **Juniper Networks NFX250 Network Services Platform:** Provides secure, software-driven, onsite customer premises equipment that's extensible with Juniper and third-party VNFs

Related Juniper Support Services

Juniper offers a wide range of support services designed to help you plan, build, and migrate to an NFV cloud architecture while minimizing risk and delivering strong results.

Proof Points

Open Solution

- Powered by Contrail Networking, Contrail Cloud Platform, and Contrail Service Orchestration
- Built on a modular framework that supports open standards, protocols, and seamless API integration
- Leverages OpenContrail™ and OpenStack
- Accelerates innovation by enabling collaboration with the open-source community, significantly enhancing its effectiveness

- Compliant with the European Telecommunications Standards Institute (ETSI) NFV architecture standard
- Extensible to third-party VNFs and open ecosystems

Simplified Service Creation

Network Service Designer, a component of Contrail Service Orchestration, provides the flexibility to choose appropriate VNFs, design functional service chains, specify interface data paths, and implement policies and quality-of-service (QoS) rules designed to meet overall performance goals.

- Supports highly customized service delivery
- Offers simple, GUI-based design interface with built-in functional drag-and-drop network designer tools
- Enables service providers to quickly create and deliver new, personalized services to their customers

Newly created, customized services—supported by rich security features provided by the vSRX Virtual Firewall—transform the traditional rigid service delivery model, elevating user satisfaction and forging a stronger partnership between service providers and their enterprise customers.

End-to-End Scalable Solution

- Offers the only scalable virtualized CPE solution to support multi-deployment models
- Delivers the scalability service providers need to expand throughout the cloud with consistent service coherency and feature parity
- Provides an affordable, centralized pay-as-you-go deployment model that can swiftly expand into a distributed model for high availability, performance, and compliance
- Offers extensibility as a hybrid deployment model, enabling enterprise customers to rapidly deploy applications centrally or distribute them to branch offices
- Allows service providers to offer differentiated and tiered services through multiple deployment models, effectively addressing the seasonal and dynamic market requirements of their enterprise customers

Efficient

- Intelligently automates service chaining and manages the service life cycle, including provisioning, maintenance, and delivery across both virtual and physical networks
- Enables subsequent service updates, expansion, or policy changes to be dynamically inserted into existing services
- Leverages automation to eliminate complex manual intervention and replaces truck rolls with a simple mouse roll for enterprise customers, enabling service providers to improve overall operational efficiency and service agility

Business Value

Cloud-based solutions improve top-line revenue growth while helping cable operators better manage their cost and improve overall profitability:

- Services are self-provisioned, reducing manual labor cost.
- Customer-managed services increase satisfaction and reduce churn.
- Providers can quickly introduce new programs, try and buy, without significant infrastructure investment.
- Licensing is based on used capacity as opposed to buying boxes with too many ports.
- Services are consolidated onto a common hardware platform, reducing spare inventory, management, and maintenance costs.

For More Information

To find out more about Juniper Networks products and solutions, please visit www.juniper.net/cable.

About Juniper Networks

Juniper Networks challenges the status quo with products, solutions and services that transform the economics of networking. Our team co-innovates with customers and partners to deliver automated, scalable and secure networks with agility, performance and value. Additional information can be found at Juniper Networks or connect with Juniper on Twitter and Facebook.

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