Service Provider Offers Managed Video Network Services

Level 3 Communications, Inc. deployed Digital Content Manager MPEG Processors on customers' premises.

EXECUTIVE SUMMARY

LEVEL 3 COMMUNICATIONS, INC.

- Service Provider
- Broomfield, Colorado
- 5000 employees

CHALLENGE

- Launch a new managed service for broadcast contribution applications
- Improve broadcast customers' workflow processes and reduce access costs
- Deliver a differentiated customer experience

SOLUTION

- Introduced Vyvx Managed Video Network Services (MVNS), which combines live video contribution with Level 3 Internet and VPN products
- Deployed Cisco Digital Content Manager (DCM) D9900 Series MPEG Processors on customer premises and in the Level 3 network

RESULTS

- Opened up new market opportunities and attracted new customers
- Improved reliability and scalability for high-definition (HD) video delivery
- Improved customers' experience by managing services all the way to customer edge

Business Challenge

Level 3 Communications, Inc. is a leading international provider of fiber-based communications services for enterprise, content, wholesale, and government customers. Television broadcasters use Level 3's Vyvx Services video transmission solutions for breaking news, sports, entertainment, and special events.

Until recently, most of Level 3's customers used a combination of video local-loop access and satellite uplink and downlink services. Now two new trends are transforming the industry. First, HD video is becoming increasingly popular, and IP offers compelling advantages for HD content contribution. Second, as broadcasters adopt digital workflows, they need a cost-effective way to share digital video files with other stations, affiliates, and partners. "The local video loops that broadcasters use for video transmission are unidirectional, costly to scale, and usually do not support data services," says Derek Anderson, senior product director, Level 3. "Therefore, most of our customers paid for a separate IP or data service for digital video file exchange and their other data requirements."

To address these new trends, Level 3 decided to develop a managed service offering that would combine live video distribution and data services on the same IP circuit. "We envisioned combining the flexibility of IP, the reliability of fiber for transmitting HD content, and the multipoint distribution capabilities of satellite," Anderson says.

> "By deploying the Cisco DCM D9900 on the customer premise, we can monitor the transmission system from end to end. Better visibility helps us be much more proactive and deliver a better customer experience."
>
> **—Derek Anderson, Senior Product Director, Level 3 Communications, Inc.**

As part of the managed service, Level 3 needed a contribution solution to accept compressed video feeds from customers and convert them to IP. This would enable Level 3 to distribute video over its fiber-optic network to the customer's other studios, points of presence, and events facilities. The solution had to be highly scalable. "We deliver more than 17,000 video feeds on behalf of customers each month," Anderson says. "Our customers can't predict news events, so we often need to take a reservation in near real-time. This requires high levels of automation."

Solution

In April 2009, Level 3 announced the Vyvx Managed Video Network Services (MVNS). Customers receive a Cisco® Digital Content Manager (DCM) Series D9900 Series MPEG Processor, deployed on their premises. The Cisco DCM

device converts the customer's asynchronous serial interface (ASI) video streams to IP video that travels over Level 3's fiber-optic network. Other Cisco DCM D9900 devices on Level 3's network ingest the IP video feeds and replicate them to the customer's other locations that have subscribed to the feed, for point-to-point or point-to-multipoint delivery. Customers can publish or subscribe to video feeds captured at any of their locations with a few clicks in a web portal. For more details, see "Technical Implementation."

"We selected the Cisco DCM platform because of its reliability, scalability, physical form factor, and system features," says Ryan Korte, principal network architect, Level 3 Media Services. "We also appreciate that the Cisco organization is responsive and listens to our needs and input for future requirements."

PRODUCT LIST

- Cisco DCM Series D9900 MPEG Processors
- Cisco 2811 Integrated Services RouterBroadband Cable

The first announced MVNS customer was Fox Entertainment Group, Inc., which helped Level 3 design the service. Level 3 provides direct fiber connections among 35 Fox locations, including the Fox News headquarters in New York City. If a local news story attracts regional or national interest, the station covering the story simply clicks in a web portal to publish the live video on Level 3's network. Then any other affiliated Fox station can subscribe to the live video feed. Fox saves itself the time and expense of maintaining video loops at each location. "With Level 3's solution, Fox can deliver news, both live broadcast video and prerecorded content, to stations throughout the country with just a few mouse clicks," says Andrew G. Setos, president of engineering, Fox Group.

Results

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Benefits for Level 3's Customers

Level 3's new Vyvx MVNS service has attracted new broadcast customers interested in a single managed service that combines video distribution and IP access. The service is especially appealing to broadcasters that are transitioning from live playout to file-based playout. "The Vyvx MVNS service allows broadcasters to efficiently migrate from full live video feeds to file-based video distribution, which the industry is moving toward for cost and efficiency purposes," says Mark Taylor, senior vice president of Level 3's Content Markets Group.

**Major advantages of the service for Level 3's customers include:**

- **Faster news delivery:** Once a video is published, stations and affiliates can subscribe to it immediately, eliminating the delays sometimes associated with establishing satellite links. "In broadcast news, five minutes is an eternity," Anderson says. What's more, broadcasters no longer need a highly skilled video technician to manage publishing and subscribing, because any authorized employee can use the simple point-and-click interface. And producers do not have to concern themselves with network capacity, enabling them to focus on reporting the news.

- **Reduced costs:** Customers reduce their network costs by consolidating their video contribution and IP VPN networks. One smaller broadcast customer previously had two DS-3 access lines, one each for a compressed ASI feed and Internet access. Subscribing to Vyvx MVNS enabled the customer to consolidate to one DS-3, reducing access costs by 50 percent.

- **Proactive support:** When broadcasters connect to a service provider's network over an unmanaged video loop, the service provider becomes aware of failures only after the customer reports them. "By deploying the Cisco DCM 9900 on the customer premises, we can monitor the transmission system from end to end," says Anderson. "Better visibility helps us be much more proactive and deliver a better customer experience."

- **Better support for HD video:** Terrestrial fiber is the most reliable service for delivering HD content. And unlike satellite transmission, fiber transmission is not affected by weather conditions and scales well for higher bit-rate feeds.

- **Fast provisioning of new sites:** Cisco added new Simple Network Management Protocol (SNMP) features to enable Level 3 to remotely provision new services. This enables automated set up and tear down of sessions in collaboration with Level 3's reservation and scheduling systems.

Technical Implementation

Level 3's Vyvx MVNS consolidates customers' multiple video loops into a single managed Ethernet access layer (Figure 1). Customers can logically connect to any service using VLANs. Level 3 configures the on-premise Cisco D9900 for each ASI video stream between 3 and 213 Mbps, depending on the customer's video application (Figure 2). Level 3 operations personnel use a Cisco 2811 Integrated Services Router for management.

Figure 1.   Vyvx MVNS Service
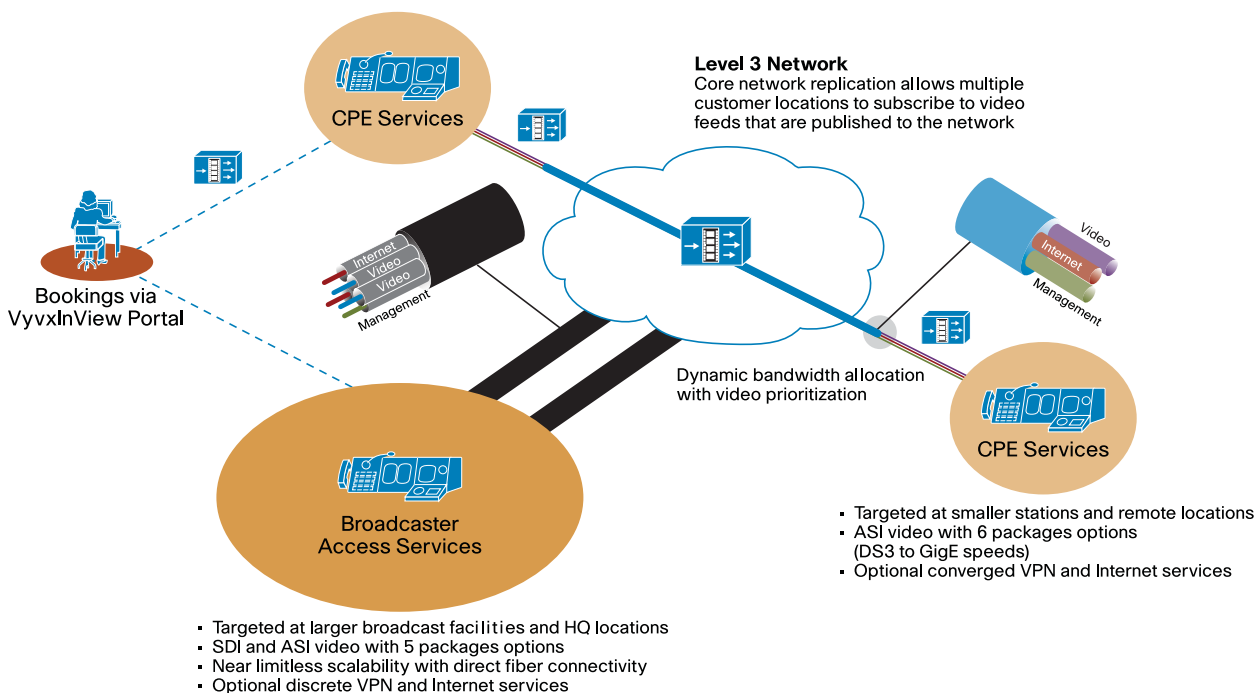
Figure 2.   Customer Premises Deployment

Customer Video Equipment

ASI Video

Network
Adapter Unit

Management
Router

Managed
Ethernet Device

Other Level 3
Internet and VPN/
Data Services

Level 3 Network
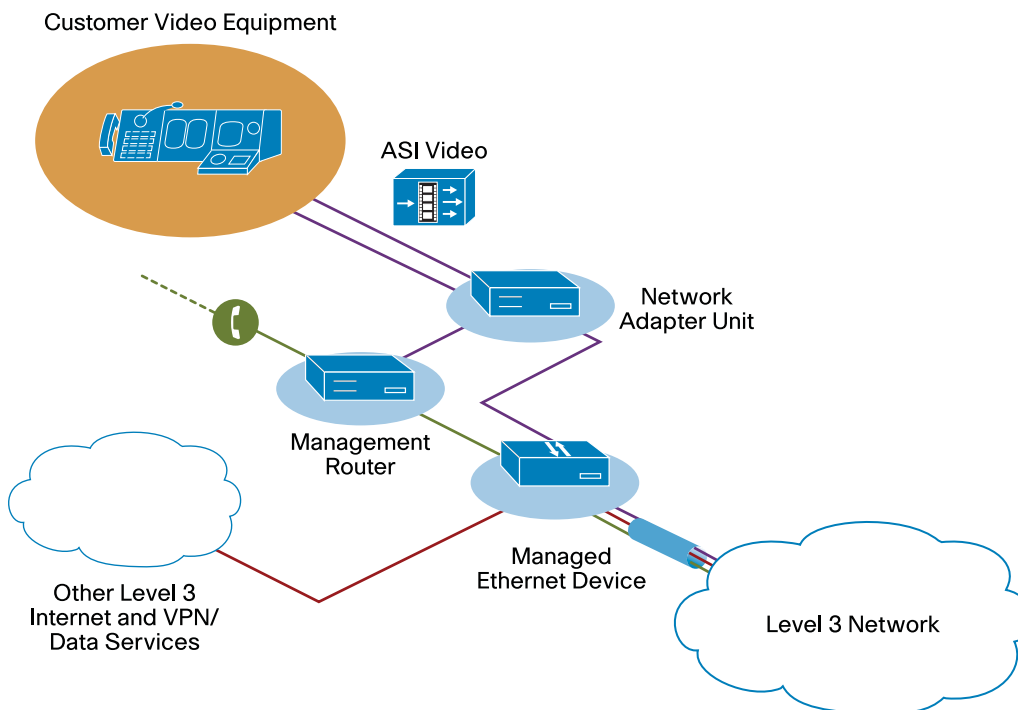
For More Information

To read about Cisco solutions for the broadcast industry, visit http://www.cisco.com/go/msb.