

## Cybera, Inc.

**Challenge:**

Provide private IP networks to multisite enterprise customers using the lowest-cost access technologies that can meet the company's requirements for reliability, security, and performance.

**Objectives:**

- Achieve five-9s core reliability to deliver 99.9% uptime including the local loop
- Fully replicate customer networks using all dynamic routing protocols
- Guarantee performance and quality to support latency-sensitive applications
- Expand managed security services
- Integrate emerging low-cost access technologies
- Provide exceptionally responsive customer service
- Lower capital and operational costs

**Solution:**

Replace Cosine switches with Juniper Networks E-series platforms and NetScreen NS-5200 firewall appliances interconnected with M-series core routers.

**Benefits:**

- Continuously available core enables Cybera to deliver 99.9% uptime including the local loop – beating the standard two-9s reliability of Internet VPNs
- Cybera now *confidently* supports all dynamic routing protocols including MPLS and IP multicast
- Assured performance and QoS enable customers to run VoIP and digital video
- Security services now include options for strictly firewalled Internet access
- Ability to integrate emerging access technologies enables Cybera to reduce average monthly cost per site
- 24/7 proactive network monitoring with average customer response time of less than 3 minutes
- Ability to run hundreds of virtual routers on a single platform reduces capex and opex

Cybera delivers fully managed broadband private network services that never touch the public Internet to multisite enterprise customers. By purchasing local access to each site through wholesale arrangements with a variety of broadband service providers and telephone companies, Cybera backhauls those circuits and integrates them through its all-Juniper network.

### About Cybera

Named one of the Hot 100 companies by Entrepreneur magazine in 2005 and recognized as one of the fastest-growing companies in the southeastern US by Emory University, Cybera is a privately held company with headquarters in Nashville, Tennessee. Growing 80 to 100 percent each year since its inception in 2001, Cybera has recently begun generating positive EBITDA and free cash flow.

Cybera delivers fully managed networks that include onsite installation and maintenance, round-the-clock monitoring, and a comprehensive SLA. The company consolidates all network services for a fixed monthly fee that can be 70% less than Frame Relay and half the total cost of Internet VPN services. The combination of low-cost, high-value networks backed with uncommon support is a compelling value proposition across vertical markets, particularly for franchise groups, convenience stores, and specialty retail chains. Security safeguards now required for healthcare and financial services companies are also accelerating their use of Cybera services.

### Capitalizing on the value of private networks

Cybera chairman and CEO Cliff Duffey explains that by avoiding the public Internet, his company can guarantee the security, performance, and reliability of its network to a level that Internet VPNs cannot deliver. "We try to make sure customers understand the security risks of having their data go over the Internet, and the high equipment and support costs required to improve the security of Internet VPNs," Duffey says. He adds that Internet VPNs cannot deliver on reliability and performance guarantees because no single carrier controls the bandwidth. Cybera, however, is able to assure the quality and performance of the networks it manages by purchasing last-mile circuits to its customers and integrating them with private routers.

"Building a nationwide network for an enterprise customer inevitably means stitching together pieces from multiple carriers," Duffey says. "If you take 50 random locations of a national customer, Bell South might serve eight of them, SBC might cover 15, Verizon might handle 20 – with independent phone carriers serving the rest. It would be difficult for a customer to buy circuits from each carrier and backhaul them to their corporate data center. This is what we do. We fill a large gap because even IXCs like AT&T and MCI don't interconnect very well with the RBOCs and IOCs – these major carriers focus on selling their own services and connections where they have facilities."

Cybera uses Juniper Networks E-series platforms to tie each customer's circuits together at the lowest possible price. "Flexibility is the key to our success," according to Duffey. "Customers can give us a list of 100 sites and we'll find the lowest-cost access technology for each one that will meet their requirements for security, performance, and reliability. At any given address, there might be six different choices for the amount of bandwidth the customer needs, and we get to pick the most cost-effective option. That's a big difference from satellite carriers or telcos that have a limited set of available technologies."

Since Cybera's SmartNetwork does not hold customers hostage to any particular technology, low-cost/high-bandwidth services such as DSL are rapidly displacing older access methods. "Using DSL, we can be just as reliable as Frame Relay or any legacy technology. We can get a lot more bandwidth for a much lower price and still be able to provide the performance guarantees customers need to confidently run VoIP or digital video," continues Duffey. As new options such as Wi-Max exert downward pressure on prices for last-mile connectivity, Cybera's ability to negotiate lower wholesale prices translates into lower bills for its customers. "Our value is the integration and management," says Duffey. "We're 'network-agnostic' regarding the access technology."

### ROI measured in revenue and cost per virtual router

While the average cost to connect each site continues to drop, Cybera's revenue per customer continues to grow as the company adds customers with increasingly large numbers of sites that often require significant bandwidth. Average revenue per customer climbed past \$5,000 per month in 2004 and is projected to reach \$10,000 by the end of 2006. Since each customer network is managed using at least one virtual router (VR) on the Juniper E-series platform, Duffey ascribed the success of his business to being able to maximize revenue and minimize cost per virtual router.

"Routers from Nortel, Shasta, and Redback have most of the advanced routing features that we use on the Juniper E-series, but those other platforms are not as scalable because of limits on the number of VRs that they can support," according to Duffey. "Redback can handle about 64 VRs, making its cost per virtual router more expensive than the E-series. The E-series allows for up to 1,000 VRs, but we typically limit each E-series to about 200 customers. While it is important for us to run multiple VRs on a single device, there is no need for us to push the capacity limits, considering the amount of revenue generated by each VR. With an average one-time capital cost of about \$500 per VR, the E-series provides a very capital-efficient solution, considering that each VR is expected to yield roughly \$60K per year in recurring revenue."

### Virtual firewalls support managed security services

Duffey says that virtualization is also the key to providing scalable managed security services. "We set up virtual firewalls on the NetScreen-5200 platform much like we run VRs on the E-series routers. Just as a single VR can serve as the hub of a customer's multisite network, we can also enable a single virtual firewall to be their secure gateway to the public Internet. The NetScreen devices make it possible for us to deliver all types of advanced firewall and intrusion prevention services centrally, so customers do not have to purchase any security-related hardware."

Virtualization enables Cybera to maintain strict isolation between each customer's network. "It is impossible for one customer to see another customer's network," says Duffey. "That is a cornerstone of the Juniper architecture, and it gives us the ability to host many customers on

a single platform. Imagine if every customer had to have their own dedicated hardware router – we'd have to allocate dozens of racks and dedicate a lot of manpower just to manage all the individual devices. Hosting multiple customers on a single E-series platform is a huge cost savings to us operationally. That's how we can offer turnkey private networks at a fraction of the cost our competitors charge."

### **Reliability and stability are foundation for advanced services**

Duffey reports that his company's Juniper routers have never caused an outage. "When five 9's of reliability is our target for core network devices, to have not had any Juniper failures in 18 months of usage has us off to a great start on the E-series. Since the VRs on the E-series act as the hub for each customer's spoke and hub network, absolute, complete reliability is essential."

During Cybera's vendor evaluation, Duffey reports that his engineers got a big confidence boost when they toured Juniper's development center in Westford, Massachusetts. "What we saw was an order of magnitude more development on the E-series than for any of the other platforms we investigated. Seeing first-hand all the effort that Juniper is investing in this product made us confident that Juniper is committed to keeping it at the forefront of technology."

Duffey says that it was important that the platform Cybera chose meet their needs without special modification. "I have heard of certain Redback customers that are using a custom version of code that supports more VRs than the standard platform allows. But we don't want the success of our business model to depend on a one-of-a-kind patch. We wanted a solution that lets us use mainstream features, where our needs aren't accommodated as an afterthought. This is what we get with the Juniper platforms."

### **Smooth operation increases business opportunity**

When Cybera engineers began work with their new Juniper equipment, Duffey says that what impressed him most was the easy training curve and the confidence his team gained implementing all routing protocols. "On other platforms, there are certain features that are available on the command line but you run a big risk if you use them. On the E-series, we gained 100 percent confidence that all the features work. When we ran our first Juniper routers in parallel with the Cosine IPSX, we put all of the complex configurations on the E-series because we were more confident of its dynamic routing support," Duffey explained.

That confidence enabled Cybera to begin serving customers with more complex networks. "Knowing that all the protocols are going to run smoothly across every VR lets us pursue business we had not been able to serve in the past," Duffey says. "For example, we now go much more aggressively after customers that want to run native BGP, MPLS, or IP multicast, since we have much stronger solutions than most of our competitors. Our ability to support the most advanced customer routing environments is a significant differentiator between us and our competitors. With the E-series, there's nothing that we are afraid of. If they want OSPF and BGP, we can do that. If they want IP multicast or MPLS, that's not a problem at all."

### **Cybera builds customer confidence in head-to-head pilots**

Cybera estimates that 80 percent of their large multisite customer networks are built after Cybera suggests a head-to-head comparison with a competitor. "Everyone talks about being good at customer service and network integration," Duffey remarks. "We say to IT managers, give each of us five sites and then see for yourself. Typically we're done building our network and have all the features working before our competitor gets its first site up."

Duffey says that the advantages of conducting a vendor network comparison go beyond simply demonstrating that Cybera can provide better support than other, often larger rivals. "For example, if a customer is comparing us with VSAT, we want them to experience first-hand how much better a broadband private network can be. We've also worked with customers who had built Internet VPNs only to find that their performance wasn't sufficient to run VoIP. If we come in saying, 'We're different, we guarantee performance,' it's not easy to accept that. But when we convince them to do a pilot they try VoIP or digital video on our performance-guaranteed network, they say, 'I really can buy a managed network to support all of my applications including voice and video, and at a price I can afford.'"

Duffey believes pilots help customers learn what application benefits they will get from a Cybera network – such as faster POS processing time and the ability to use digital video for security. "Pilots give customers opportunities to collect data needed to calculate ROI, which helps justify their costs," Duffey says. "That's why we encourage pilot customers to test as many ROI-driving applications as possible – it only quickens the pace of their decision."

### **Cybera customers speak for themselves**

Cybera has a number of high-profile customers including Chick-fil-A, one of the largest privately held restaurant chains in the U.S., with more than 1,200 restaurants across 38 states and Krispy Kreme Doughnuts, with more than 150 corporate stores within its nationwide, 350-store retail footprint.

Chick-fil-A rated the proactive management, included in every SmartNetwork solution, as excellent. "Cybera provides a status for ongoing issues, a problem resolution plan and closure. We see a real value in the management service," said Tony Letts, Chick-fil-A's Senior Supervisor of Information Security and Networks.

Cybera's SmartNetwork delivered

- A seamless roll-out of continuous geographical areas to meet corporate consistency objectives
- Support for special on-site requests during installation process
- 24/7 monitoring and notification of all network elements, including customer premise equipment
- An ongoing willingness to get problems resolved

Sam Gray, Director of Technical Services, also turned to Cybera when he needed a new broadband wide-area network for Krispy Kreme's corporate retail stores. His requirements were fully managed services with a single point of contact, affordable cost and security that was not a liability for Sarbanes-Oxley. Gray and his team thought briefly about managing the network in-house. They quickly nixed that option after realizing somebody would have to work with 50 or more telecommunication companies across the country to troubleshoot problems and deal with billing issues. Gray wanted one point of contact for ordering, provisioning, and customer service for the entire network. Cybera's SmartNetwork satisfied all of Krispy Kreme's needs and delivered the following results.

- Half the cost of competing circuits from major carriers
- Average speeds exceeding 144K of broadband capacity
- Bandwidth to maximize the use of Krispy Kreme's company-wide application portal
- Faster, more reliable credit card transactions
- Support for gift card programs

**A shared vision for the future of IP networking**

As Cybera expands its footprint using M-series core routers and MPLS to ensure application-appropriate QoS, the company is able to support customers who need more than spoke-hub networks. Duffey says that Juniper platforms provide a smooth growth path and help Cybera stay ahead of its competitors. "When we chose a Juniper solution, we chose much more than a pallet of electronics – we adopted a network architecture and a path to the future."

"With its vision of the Infranet, Juniper has taken the lead in helping the industry work toward combining the reach of the public Internet with the reliability, security, and QoS of private networks," Duffey adds. "Our SmartNetwork services prove that IP networks can meet those goals in private networks. Considerable work lies ahead to be able to fulfill those goals over the public Internet, but there is no doubt that this is where the industry is going. We are delighted that Juniper wants to be at the center of those efforts, and happy to be a Juniper customer."



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