

## Global Manufacturing Company Saves More than \$700 Thousand Yearly by Optimizing Branch IT Infrastructure

Cisco WAAS accelerates applications and minimizes branch IT expenses

EXECUTIVE SUMMARY
<b>NANOMETRICS</b> <ul style="list-style-type: none"> <li>• <b>Industry:</b> Semiconductor Test Equipment</li> <li>• <b>Headquarters:</b> Milpitas, California</li> <li>• <b>Number of Employees:</b> 600</li> </ul>
<b>BUSINESS CHALLENGE</b> <ul style="list-style-type: none"> <li>• Server and data storage sprawl across remote offices in UK, Korea, Japan and China</li> <li>• WAN limitations prevented server, data and application centralization</li> <li>• High WAN circuit expenses</li> <li>• Aging WAN network equipments</li> <li>• Poor application performance across the WAN</li> </ul>
<b>NETWORK SOLUTION</b> <ul style="list-style-type: none"> <li>• Branch server and storage centralization</li> <li>• Application acceleration</li> <li>• WAN bandwidth optimization</li> <li>• Centralized data protection and compliance</li> </ul>
<b>BUSINESS RESULTS</b> <ul style="list-style-type: none"> <li>• Saves \$260,000 OpEx/year by centralizing server, storage and applications</li> <li>• Saves \$500,000 phone bills/year by using company-wide VoIP</li> <li>• LAN-like data applications everywhere</li> </ul>

### Business Challenge

Nanometrics is a leader in the design, manufacture and marketing of high-performance process control metrology systems used in semiconductor manufacturing. The company maintains its headquarters in Milpitas, California, with sales and service offices worldwide.

In July 2006, Nanometrics acquired Accent Optical Technologies, a supplier of advanced overlay and thin film metrology and process control systems to the global semiconductor manufacturing industry.

One of the company's goals was consolidating the two companies' IT systems to help improve global employee collaboration efficiency at lower costs. Dave Kizer, Director of Information Technologies, who was the mastermind behind Accent Optical's state-of-the-art infrastructure, decided to standardize and centralize IT operations into one co-location in California headquarters.

"We identified three major opportunities for cost cutting and efficiency improvement: Expand Accent Optical's existing VoIP infrastructure to worldwide offices, centralize branch IT infrastructure, and accelerate business applications across the WAN," says Kizer.

"We started using VoIP technologies to reduce costs back in year 2000 when I was at Accent Optical," says T.J. Hettick, VoIP architect. "Nanometrics on the other hand, was still using PBX throughout the company and paying about \$50,000 per month on phone bills. This was clearly a cost cutting opportunity for us."

Nanometrics has sales and services offices in UK, South Korea, Japan, Taiwan and China. Most of these offices have single (2.448Mbps) or fractional E1 WAN connections. Latency ranges from 100 milliseconds to 300 milliseconds. Microsoft Dynamics CRM, Windows file servers, Exchange servers, and SolidWorks® CAD file servers were deployed in each remote office, and Citrix was used, in order to provide fast access to frequently used files. "We knew we needed worldwide LAN-like access to these applications," says Kizer,. "Yet centralized applications means we will lose that objective unless we can do something about the WAN."

Data sprawl was also beginning to make data protection cycles much longer. “In short, we needed to centralize branch servers, storage and data protection into the main data center while still maintaining LAN-like access for all the remote employees,” says Kizer.

### **Network Solution**

VoIP architect T.J.Hettick directed the voice network upgrade, selecting Cisco integrated services router (ISR) 2800 and 3800 series embedded with VoIP blades. “Moving from the old PBX switches to the new Cisco ISR was pretty straightforward,” says Hettick. “And we expected the new system to work perfectly, with zero downtime.” The new ISR with integrated VoIP gives Nanometrics a single high performance, low cost, and easy-to-manage WAN system compared to multiple hardware and software systems from alternative solutions. “We knew VoIP would save us a lot of money,” says Hettick. “But Cisco ISR’s tight integration between routing and VoIP, and even security functions offered even more savings, by simplifying our initial configuration, equipment shipping, installation, staff training, and ongoing management efforts. This allowed us to free up our limited IT staff to work on much higher value-added initiatives - application acceleration and overall branch IT consolidation.”

Kizer and Hettick immediately saw the synergy between VoIP and application acceleration. “VoIP required certain QoS parameters and sufficient bandwidth to ensure business-class communications among our employees,” says Kizer. Because Nanometrics’ WAN circuits were mostly single or fractional E1s, they must be used most effectively for both voice and data communications. While evaluating VoIP, Kizer and Hettick’s team came across a small vendor’s WAN optimization appliance that can compress and accelerate data traffic going across the WAN. So they immediately purchased a few units for pilot deployment. “While the data application acceleration performance was impressive, we noticed a major problem,” says Kizer. “Because the WAN appliances use IP tunnels to connect each other, our QoS policy can no longer apply granular prioritization and bandwidth allocation on each individual VoIP call. Based on my extensive VoIP experience at Accent Optical, I immediately knew this would mean degraded and less reliable VoIP.”

After discussions with Cisco on the architecture synergy among routing, QoS, VoIP, application acceleration and overall branch IT equipment consolidation, Kizer’s team decided to standardize WAN network equipment on Cisco ISR embedded with VoIP, security and Cisco Wide Area Application Services (WAAS). “The Cisco WAAS accelerated all of our applications transparently, without requiring us to overhaul the VoIP policies that we had tuned perfectly at Accent Optical,” says Kizer. “In addition to advanced performance and rich application support, we are getting three unique values from Cisco: (1) About 67% lower overall Total Cost of Ownership for the entire solution compared to the previous WAN appliances, due to the fact that the ISR with Cisco WAAS are integrated and require less rack space, power and cooling, cabling and management efforts; (2) One stop award winning global services and support; and (3) Cisco financing at below market interest rate funded the entire WAN refresh in one shot holistically rather than in piece-meal fashion, allowing us to lower OpEx immediately.

### **Business Results**

Kizer credits the Cisco WAAS as maintaining LAN-like experience for remote office employees using Microsoft Dynamics CRM, Windows file servers, Exchange servers, and SolidWorks® CAD file servers. “Our team went to each remote site, replaced local servers with the Cisco WAAS and redirected the traffic, nobody noticed any application performance degradation. They thought those servers were still there. Even Citrix runs faster with Cisco WAAS,” says Kizer. “And now our CAD

file version control is much improved, compliance is easier and I estimated our OpEx savings will be around \$260,000 simply by consolidating server, storage and IT support resources.”

Besides the \$260,000 savings, the VoIP infrastructure enabled by Cisco WAAS will save Nanometrics \$500,000 a year on telephone bills. “Our VoIP project won’t be successful without the Cisco WAAS making room on WAN bandwidth for sufficient quality and bandwidth, and allowing our QoS policy to work as is,” says Hettick.

### Next Steps

As Nanometrics looks in the direction of next steps for their infrastructure, the organization is heading towards faster data replication for disaster recovery purposes. Cisco WAAS and MDS storage solutions are being considered.

#### PRODUCT LIST

##### Cisco Application Networking Services:

- Cisco WAAS for WAN optimization
- Cisco Integrated Services Routers (ISR) 2800 and 3800 series with WAAS Network Modules (NME-WAE-502)
- Cisco WAE 512 Appliances
- Cisco WAAS Central Manager
- Cisco WAE 7326 Appliances

### For More Information

Find out more about Cisco WAE and Cisco WAAS solutions, please visit <http://www.cisco.com/go/waas>.



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