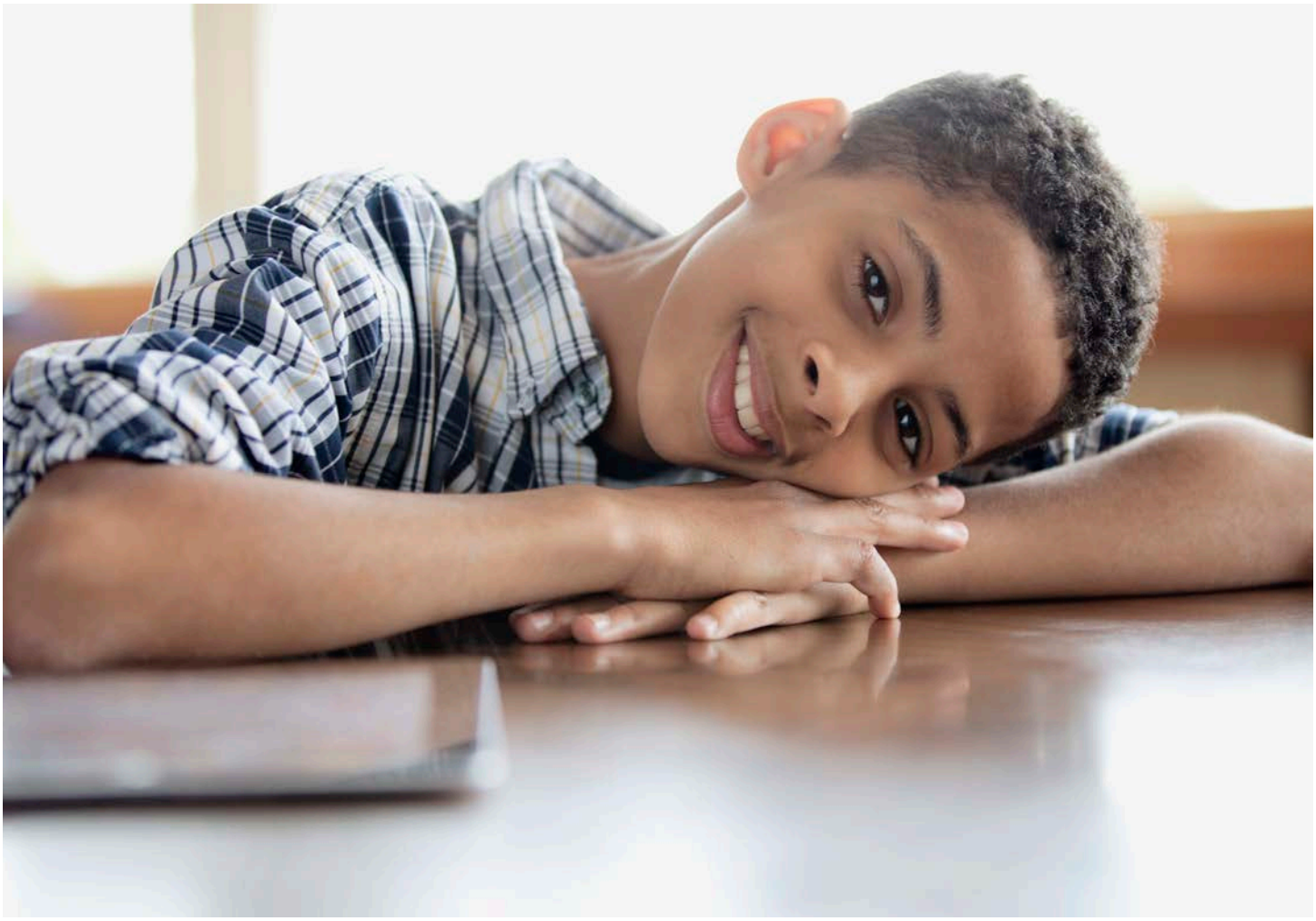
Customer Case Study

SOLUTION
Ednetics Network

CUSTOMER
Sunnyside School District



Cutting Edge Network Infrastructure to Support Next Generation Education

Challenges

- Increased demand from wireless devices
- Large district, small staff
- Year-to-year funding variability

Solution

- Distributed routing topology
- Cisco Catalyst 4500-X switches
- Cisco 2960-X switches at access layer
- Cisco Aironet WAP's
- Ednetics Network Managed Service

Results

- Increased network speed
- Future-proofed infrastructure
- Simplified administration and maintenance

Edison Ave in Sunnyside, WA

"Ednetics is willing to go the extra mile if we need additional help with something. We don't get that with anyone else."

Sunnyside School District serves the town of Sunnyside, Washington, and outlying rural communities. It is a mid-sized district, covering 180 square miles. Its 6,500 students are enrolled in five elementary schools, two middle schools, and one high school. It has some of the highest school completion rates in Washington and has made access to education technology one of the central elements of its mission to foster the "social, emotional, physical, and intellectual development of each child." To create the foundation for long-term IT capacity and to ensure that its infrastructure would meet and exceed projected demand for access, Sunnyside has partnered with Ednetics to put in place a powerful, purpose-built managed network.

Challenges

Sunnyside's curriculum strategy stresses an increasing role for technology, including greater use of video content, online assessment testing, support for Common Core, and a move towards 1:1. That strategy requires a robust network infrastructure capable of supporting those initiatives: "We know that we have to have that infrastructure in place to support our strategy for 1:1 and ubiquitous wireless access," said Nic Olinsky, Director of Technology. "If the foundation isn't there, it is difficult to support that kind of curriculum."

6,500
K12 Students

5
Elementary Schools

2
Middle Schools

1
High School

400+
Teachers and Staff

The network infrastructure before the update was based on a "collapsed core" topology in which the network's core and distribution layers are "collapsed" into a single layer. The design was cost effective and was performing well under its current load, but the IT Department anticipated that the design would approach the margin of its capacity as the number of networked devices increased. Given the rapid proliferation of iPads, Chromebooks, and smartphones, an increase in bandwidth demand was inevitable.

The IT department also faced staffing constraints. The staff was responsible for service delivery and performance at eight schools, and with more devices coming on line the scope of their responsibilities and users' performance expectations would grow at a faster rate than the number of personnel. Like other districts across the country, Sunnyside faced fluctuations in funding that added another layer of complexity to long-term technology planning

Solution

The Sunnyside IT department consulted with Ednetics to design network architecture to support district initiatives. To take advantage of funding opportunities offered by the E-rate

program, Sunnyside obtained this advanced upgrade as a managed service through the Ednetics Network plan. Ednetics Network provides infrastructure, maintenance, and support based on a cost-per-user model. The service includes proactive performance monitoring that addresses traffi and usage issues before they become problems, which increases the level of service available to users.

Ednetics worked closely with the customer from the start of the project to audit every network-related piece of equipment and all cabling to ensure that it was compatible with the upgraded network. The new design would use a distributed routing topology based on multiple Cisco Catalyst 4500-X 10G switches that would serve as "mini-cores" at each school. The architecture would be able to support the heavier device load and bandwidth demands that were fast approaching while providing greater resilience and availability. The design took into account the projected increases in workload and bandwidth consumption, so all switches in the network – the 4500-X and the Cisco 2960-X access layer switches – came with PoE+ (Power over Ethernet Plus) and SFP+ to accommodate future demand. The upgrade included new data cabling and fiber between buildings.

Ednetics designed and implemented WLAN infrastructure at all schools, deploying nearly 400 Cisco Aironet 2702 wireless access points. The Aironet APs are designed for heavy-density environments such as classrooms and deliver secure high speed to users who might be using two or three devices simultaneously. 13 Cisco Aironet 1532 APs were installed for outdoor use.

Results

Careful attention to high-level design and network architecture delivered an infrastructure that fully supports the district's long-term curriculum development strategy. Installation was smooth and trouble-free – Sunnyside's Network Operations Manager, Dave Peterson described the upgrade as fast and unobtrusive. The longest downtime, Peterson said, took place when the UCS chassis was taken offline, an outage lasting barely ten minutes. Because cut-overs were scheduled during off hours, end users experienced no disruption.

> "I don't know anyplace else where you can do a speed test on an iPad over wireless and still pull close to a gig up and down. I've never seen that before."

The upgrade has already begun to yield dividends. "We added nearly 400 laptops, 300 Chromebooks, and over 500 iPads over the summer, and we've already noticed a dramatic increase in performance across the network," Peterson said. "We've got people who've worked outside of education in other environments who are in awe of what we've been able to accomplish here. For example, I don't know anyplace else where you can do a speed test on an iPad over wireless and still pull close to a gig up and down. I've never seen that before."

Being an Ednetics Network customer offered several key advantages. The network is delivered as a service rather than as a capital expenditure and is billed on a per-user basis. Monthly charges are predictable and stable. Since maintenance and monitoring are included as part of the service, the risk of budget "surprises" is

low. The managed service model insulates the customer from equipment obsolescence since the hardware is leased rather than owned. The district can take advantage of enterprise-grade network performance and on-demand access to Ednetics support for a lower total cost of ownership than they would have incurred with a traditional, customer-owned system. Peterson compares the new managed service support environment to "working with a net" – while the daily tasks are similar, the additional support from Ednetics lets him accomplish more tasks in less time.

What sets Ednetics apart from other providers, Peterson said, is the degree of integration between its account management, engineering, and contracting teams. The level of communication and coordination between the teams ensures that projects are well-designed, executed quickly, and installed correctly: "It's attention to detail, from planning stages, to project management, to implementation … and Ednetics is willing to go the extra mile if we need additional help with something. We don't get that with anyone else."

Conclusion

Sunnyside School District's upgraded network stands out for several reasons. It illustrates the importance of anticipating changing IT requirements over the next five years and designing the network with those needs in mind, rather than simply reacting to those changes as they occur. Ednetics Network gives the district complete access to whatever technical assistance is necessary. It takes advantage of enterprise-grade hardware and Ednetics network expertise to accommodate current requirements and support long-term education strategy. As Sunnyside brings initiatives like 1:1 on line, the network will already be in place to serve those programs. ◊

Ednetics was founded in 1997 to bring IT services and solutions to education and public sector communities. Opportunities to improve education and government settings through the use of advanced technologies continue to be our focus. Network based services and solutions with our customer's needs informing our approach has led to an impressive portfolio. Understanding our customer's needs through the eyes of hundreds of tech directors and administrators has informed our products and services every step of the way. Our diverse team includes contractors, specialized engineers, dedicated support, project managers and specialists with an affinity for technology and a desire to be the best at what we do. We are inspired by how technology can help and we love making a difference.