Digital Transformation for German Schools with Allied Telesis

Customer: Gemeinde Pullach

Market: Government/Education

Location: Pullach im Isartal, Germany

The schools of the municipality Pullach im Isartal modernize their IT infrastructure with Allied Telesis Networking

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The new technology infrastructure in our schools is state-of-the-art, with the ability to support our educational needs for many years to come.

André Schneider

Head of the Treasury for Pullach

Education in the 21st Century Relies on a Modern IT Infrastructure

The Digitalpakt Schule funding program is helping schools across Germany upgrade and modernize their information technology (IT) infrastructure. Taking advantage of this program, the municipality of Pullach im Isartal recently underwent a project to digitalize its elementary and middle schools as well as improve the IT infrastructure for the high school. The new networking equipment was sorely needed to bring the schools to a state-of-the-art level to support opportunities for online learning.

The municipality's three schools had very different levels of existing digital infrastructure. The elementary school was most in need of IT modernization. Some of the classrooms were only equipped with a network socket and a small 5-port switch to connect the various end devices to the IT infrastructure. The Internet connection was narrowband and could not meet the requirements of today's modern data throughputs. There was no wireless local area network (WLAN) infrastructure in the building. The lack of modern technology put teachers, students, and staff members at a great disadvantage in today's era of computer-assisted learning.

Challenge

▶ **The municipality of Pullach im Isartal needed to upgrade the IT infrastructure for its elementary, middle, and high schools. While the high schools had some modern technology, the lower schools were in desperate need of digital modernization.**

Solution

▶ **Robust, highly secure family of Allied Telesis core and edge switches throughout the buildings**
▶ **Wireless access points in the classrooms and common courtyard**
▶ **Unified network management covering both wired and wireless networks**

Result

▶ **The network supports all manner of uses for students, faculty, and administrative and government staff without limitations.**
▶ **New location-independent teaching and learning methods are now possible.**
▶ **Students are better prepared for technical challenges in the working world.**

Likewise, the middle school campus, which consists of three main buildings and another building shared with the elementary school, lacked any sort of modern technology. Again, there was no comprehensive WLAN coverage on the campus, making it difficult for students and faculty to access the Internet for meaningful educational experiences.

Previous modernization projects gave the Otfried Preußler High School Pullach a good baseline of equipment and network connectivity. However, the existing WLAN couldn't support the large number of simultaneous connections needed by the school, and some of the networking components were outdated and needed to be replaced.

The plan was to modernize the IT infrastructure of all the schools, giving them a state-of-the-art network to meet the requirements of capacity, performance, security, reliability, and simplicity of operation.

Allied Telesis Was Chosen for Its High Performance Network and Superior Network Management Platform

The municipality tendered the technology contract to the computer services company Inducio GmbH. Headquartered in nearby Traunstein, Inducio has an excellent reputation and strong history of helping its clients achieve their goals. In this case, Inducio was charged with helping to architect a networking solution; selecting the right technology vendor; installing, testing, and documenting the equipment; providing ongoing maintenance for the equipment; and monitoring and managing the solution long-term.

Inducio considered the offerings of several leading network technology providers and recommended Allied Telesis. The primary differentiator among the networking vendors is Allied Telesis' scalable network management platform known as Autonomous Management Framework (AMF). AMF's automated services, including firmware upgrades, backup recovery, and zero-touch provisioning, minimize the resources and skills required to manage a complex network. In addition to helping ensure network uptime, AMF's centralized management enables administration of one, many or all devices at once, thus reducing the time, effort, and cost of network management. A particularly useful feature for the schools' IT team is the management interface for authorizing network devices, which enables a simplified way to integrate new devices into the existing infrastructure.

Siegmund Gromotka, Managing Director of Inducio, states: "Allied Telesis has excellent quality network equipment, which is what our education customers need. We recommend Allied Telesis most often to our customers because of their simple but clever network management tool, AMF, that provides centralized management of the switches and built-in automation that further reduces administration time and effort. Allied Telesis really delivers when it comes to reliability and high performance, but with simple network management."

Modernization with New Networking Equipment and Management Tools

The network architects established two distinct physical networks due to the distance between the locations of the school buildings. The elementary and middle school buildings as well as the server

room located in the municipality's town hall are in close proximity and easily can be connected to each other via fiber optic lines. The high school is quite a distance from the other two schools, making it more practical to have its own network.

Network 1, which includes the Training/IT/server room in the municipality of Pullach and the elementary and middle schools, is configured with two Allied Telesis x950 core switches in the IT room. They are redundantly networked with OS2 single mode optic fiber cable. Network 2 is standalone and covers the high school. It, too, has two x950 core switches for redundancy.

Before

After
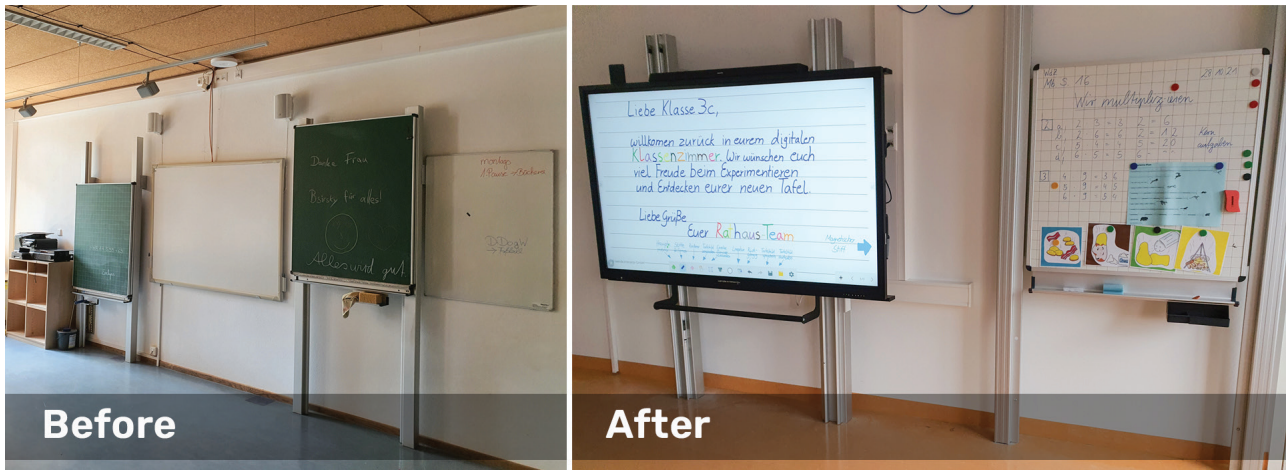
Wired access is provided in both networks using Allied Telesis x530L high port density switches. These switches vastly expanded the capacity for device connectivity over what previously existed. Wireless access is provided through Allied Telesis TQ5403 access points. Even the outdoor break yard that is part of the middle school campus is now saturated with wireless connectivity.

Management of these two networks is centralized by site using Autonomous Management Framework, Autonomous Wave Control (AWC) for the wireless access points, and Vista Manager EX. AMF is primarily used for device configuration, setup, and management. AWC is an intelligent wireless controller that is used to analyze radio coverage and interference to deliver better wireless connectivity that automatically adapts to environmental changes and users' dynamic bandwidth demands.

Vista Manager EX from Allied Telesis provides a single-pane-of-glass interface for monitoring and managing the entire network. The support staff at Inducio use this management platform to monitor the network to get a complete overview as well as drill-down detailed information. "We can remotely monitor and control the entire network with Vista Manager EX," says Gromotka. "The straight-forward user interface makes it easy to see everything that's happening on the network. It's a very powerful tool that lets us do everything we need to do to keep this network running optimally."

One of the biggest advantages of Vista Manager EX and the AWC plug-in is that they enable each wireless access point to operate on the optimal channel and at the optimum power, so that maximum coverage and bandwidth availability is obtained across the whole network.

Related

Autonomous Management Framework (AMF)

Vista Manager EX

Autonomous Wave Control (AWC)

The State-of-the-Art Network Delivers Myriad Benefits

The benefits of having the new Allied Telesis networking infrastructure in place are myriad. Most importantly, teachers and students now have reliable and pervasive access to the Internet for virtual textbooks with interactive content such as audio files in foreign language classes and explainer videos in biology class. Students and teachers use tablet devices to access an interactive whiteboard in each classroom to present content. All end user devices, including personal devices brought from home, easily connect to the WLAN with continuous and secure connectivity.

There are numerous technical benefits to the network as well. For example, the redundancy designed into the network ensures there is no downtime. The resiliency of the individual switches and access points allows the network to continue operations even if there is a single node disruption. The WLAN coverage is fully guaranteed and managed through AWC, giving students, faculty, and staff a superior experience, both inside the buildings and outside in the break yard.

Network capacity has been greatly expanded, allowing entire classrooms to access the Internet at once for online learning. What's more, access times and performance have been improved, giving everyone a much better user experience.

The network infrastructure is continuously monitored so that even small incidents can be addressed promptly. The centralized management console enables support professionals at Inducio to keep the network operating at top performance.

It's not difficult to imagine how time- and money-consuming it would be without the provisioning, easy error recovery, and central management capabilities of AMF and Vista Manager EX. The Inducio team very well knows that providing a "total autonomous solution" to the municipality can cover its investment cost in a short period of time by reducing support and maintenance costs for manual operations.

André Schneider, Head of the Treasury for Pullach, is pleased with the results of the IT modernization. "The new technology infrastructure in our schools is state-of-the-art, with the ability to support our educational needs for many years to come," says Schneider. "The new online educational capabilities in our classrooms will help give our students the edge they need to succeed in a highly competitive world. We greatly appreciate the work done by our partner Inducio GmbH in bringing the modernization to life. The new network exceeds all our expectations."

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