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CASE STUDY

SWITZERLAND

HIGHER EDUCATION

SECURE, MOBILE LEARNING ENVIRONMENT POWERS NEXT GENERATION OF SWISS TEACHING TALENT

PÄDAGOGISCHE
HOCHSCHULE
ZÜRICH

PH ZH

Create a mobile-first university campus to enable the use of latest digital teaching methods

Zurich University of Teacher Education (PHZH) is Switzerland's largest and most influential teaching training facility. It is home to 4,000 full-time students, with more than 12,000 teachers on-site at some point in the year, continuing their professional development. It is an internationally recognised centre of teaching expertise.

"We need to teach the best teaching methods, not only for today but also looking ahead to the industry's future requirements," says John Wilhelm, Head of IT, PHZH. "And for that we need a digital campus, capable of replicating digital teaching."

SIMPLIFYING A COMPLEX NETWORK ARCHITECTURE

The network infrastructure of the Zurich campus has been rebuilt on HPE Aruba Networking technology.

"We are a laptop-first university, wanting to adopt SaaS wherever possible," says Wilhelm. "All infrastructure elements are connected to the network. The network is absolutely critical."

The Aruba architecture is built on Aruba CX 6300 series switches and 500-series Wi-Fi 6 access points, and managed via the cloud-based Aruba Central platform. Policy-based Network Access Control is managed and automated through Aruba ClearPass Policy Manager. The solution was designed and implemented by Softec, a local Aruba partner and network specialist.

"The biggest impact was that there was no impact," says Wilhelm. "We've achieved a major transformation away from a very complex network without any major issues. The Aruba architecture has enabled us to simplify the design and increase the performance.

REQUIREMENTS
- Establish a reliable, scalable network to support growth in use of digital tools
- Ensure robust security policies to govern network access for diverse user groups
- Simplify the integration of new devices, users and applications

SOLUTION
- Aruba Indoor & Outdoor Access Points
- Aruba 7200 - series Mobility Controllers
- Aruba Switches (Core to Access)
- ClearPass Policy Manager
- Aruba Central Cloud-based Management Platform
- Zero Trust NAC with Aruba Dynamic Segmentation

OUTCOMES
- Enables seamless mobile-first connectivity for students, teachers, researchers and guests across the campus
- Supports an 'at-home' network experience for students
- Strengthens security with clarity around network access
- Provides roadmap towards continuous network innovation

"Our chief of security is happy with the security architecture. Research employees can easily manage their own IoT networks. The WLAN performance is beyond our expectations and the guest Wi-Fi portal and self-service possibilities are great. We have security, scale and flexibility."

Providing seamless integration

The comprehensive HPE Aruba Networking ESP architecture simplifies integration and establishes a central, consistent view of network operations.

"One objective was to reduce the complexity of the network infrastructure to be more transparent," says Rich-

> **"** The balance between HPE Aruba's innovation and its ability to provide a stable and solid network platform is crucial. Users want to make the most of their digital tools and not give a moment's thought to the network. And that's how it should be. **"**

JOHN WILHELM
Head of IT, PHZH

ard Schmidli, Network Engineer, PHZH. "We knew that a simpler network would mean lower management costs. But it was also important to recognise that the network will grow and adapt. We need to be able to integrate new users, devices and applications."

The greatest challenge, he continues, was the integration of voice/video and IoT devices into the network:

"Since Covid, we've been using many new and varied products that have very different needs for network integration. The systems are often not yet mature enough in terms of management and security. Users want an infrastructure 'like at home' where all devices can be easily integrated. We want to allow them that flexibility but without compromising security."

Strengthening the security posture

With the university holding so much personal data and conducting sensitive research projects, security is a huge concern. "One key objective of the network upgrade was to achieve strong security and separation between end

devices," says Schmidli. "Targeted communication must be possible at any time."

Overall, the HPE Aruba approach to the network upgrade was very comprehensive, he says, but the most important feature was the zero-trust approach with Aruba Dynamic Segmentation: "This enables maximum flexibility and automation, with a high level of security. To date, we have created 50 roles, all of which are defined through ClearPass, controlled via the Mobility Controllers and integrated with our Firewall. The possibility of integrating the Checkpoint Firewall rules with the network access policies and roles completes the system perfectly."

Enabling a modern teaching environment

The network overhaul establishes a robust digital platform on which to deliver the latest teaching methodologies. It allows students complete mobility across the four campus buildings and for them to make use of the latest industry tools.

"The most important element for students is a powerful and stable WLAN throughout the campus," says Schmidli. "This must also be efficient for online exams in the lecture halls with a very high user density."

Aruba ClearPass simplifies network access, particularly for visiting students and teachers. Visitors from other Swiss universities are also automatically recognised, authenticated and onboarded.

"In teaching and research, network segments are needed that enable targeted communication between devices in real time. For example, in musical training, different devices may be used where the tempo and beat needs to be synchronised between them in real time. These devices need to be operated in a discrete and secure network segment," Schmidli adds.

UNDERPINNING THE UNIVERSITY OF THE FUTURE

Schmidli says the project has upskilled the entire network team. Working alongside Softec helped the in-house team build confidence in network design and operations.

"Softec created concepts for design, construction, testing and migration," he explains. "We worked very closely
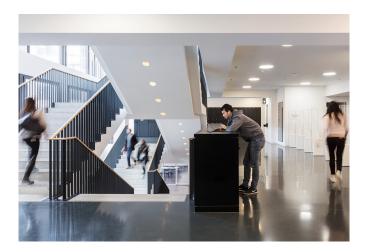
together to build a lot of knowledge on the new infra-structure. Our goal is to be able to operate the entire network on a day-to-day basis. It is important for us to have a strong partner like Softec at our side in the event of innovations, new projects or disruptions."

The result, adds Wilhelm, is a technology platform that enables students, teachers, researchers and partners to thrive: "We are not primarily technology-driven but technology is always important to take a leading position in the education market. I think the balance between HPE Aruba's innovation and its ability to provide a stable and solid daily platform is crucial.

"Users want to make the most of their digital tools and not give a moment's thought to the network. And that's how it should be."

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