

Centralised and Virtualised Services Model Enables ROCvA to Deliver Its Vision for Connected Learning

EXECUTIVE SUMMARY

CUSTOMER NAME

- Regionaal Opleidingencentrum van Amsterdam (ROCvA), Netherlands

INDUSTRY

- Education

BUSINESS CHALLENGE

- Develop a connected learning environment based on centralised and virtualised services that reduce costs, improve access—to people, places, information and tools—and deliver the flexibility needed to rapidly respond to change

SOLUTIONS

- A secure Unified Communications Network based on the Cisco Service-Oriented Network Architecture (SONA). Cisco SONA Integrated Network Services include:
 - Security
 - Mobility
 - Voice and Collaboration Services

BUSINESS RESULTS

- Improved communications, collaboration and flow of information
- Optimisation of teaching and learning tools and campus resources
- Better alignment, efficiency and agility of IT to support business growth

In their search for comparative advantage, forward-thinking colleges and universities are increasingly turning towards IT. ROCvA knows this better than most and is developing a future blueprint for connected learning—based on Cisco's Service-Oriented Network Architecture—to deliver teacher tools and digital learning applications to around 3,500 staff and 35,000 students located across some 67 locations. This is enabling the college to drive transformational change and maximise campus facilities and resources—all from a lower cost base.

Business Challenge

Regionaal Opleidingencentrum van Amsterdam (ROCvA) was established under Dutch law at the initiative of local and national government in 1997. It followed the merger of a number of schools and colleges in Amsterdam and the nearby townships of Amstelveen, Hoofddorp and Hilversum. One of the largest colleges in Europe, ROCvA focuses on providing vocational education and training to 12-to-18-year-old and adult students.

The constant challenge for institutions like ROCvA is to find new ways to attract students by increasing academic excellence and efficiency, while simultaneously driving down costs. To make this transition, the college engaged Cisco to first create a standardised and centralised network infrastructure across all its locations and then build on this with voice, wireless and security platforms.

Henk van der Veer, network manager, ROC van Amsterdam, explains: "There were a lot of different infrastructures for voice, data and alarm services. Our goal was to implement a cohesive IT strategy to gain control and efficiency, moving towards voice, data and video services over IP."

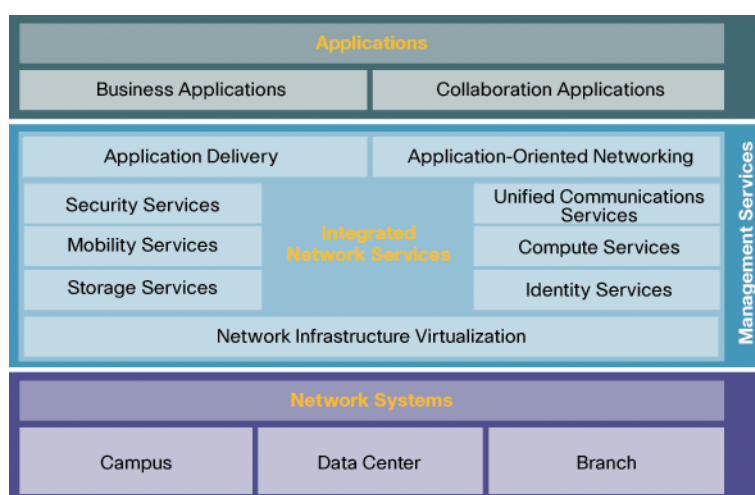
Solutions

Based on a shared vision to develop a student-centric teaching and learning environment—Cisco calls this Connected Learning—ROCvA is creating an integrated global campus. It will ensure physical and virtual secure access to educational research resources and personnel—anywhere, anytime—as well as saving time and money through improved administration.

The foundation for this is a Cisco Service-Oriented Network Architecture (SONA). SONA is an architectural approach to connecting network services to applications to deliver business solutions.

By focusing on the integrated network services layer—the link between the networked infrastructure (of clients, servers and storage) and the applications layer—Cisco SONA allows the college to deliver teacher tools and innovative learning modules from one centralised point to around 3,500 staff and 35,000 students located across some 67 locations.

Figure 1. Cisco Service-Oriented Network Architecture (SONA) Framework



The scalability and open standards provided by the new infrastructure is supporting a campus-wide deployment of Cisco Unified Communications services, including IP telephony, IP Contact Centre and Unity voicemail solutions, across all sites. Henk van der Veer says: “A feature of our end-to-end Cisco network is that the required functionality is combined within the same infrastructure. This means that we can introduce new services without the need to replace lots of components.”

Wireless technology is creating a ‘campus without walls’. Deployed in three of the college’s main locations, including its major new building in Fraijlemaborg Street, the integration of mobility services extends learning beyond the classroom and allows students to stay securely connected to online teaching modules or research resources. Extension mobility means that teachers can use the nearest phone to instantly access their individual voice messages.

ROCvA’s policy to reduce hardware costs through the use of laptops is assisted by the campus network, which helps to ensure better utilisation of these assets and shared resources.

“If a student needs a laptop they can sign one out so long as they stay within the building and take one from an intelligent trolley.” Jacco Voorbij, head of systems management, ROC van Amsterdam, continues: “The trolley is secure and has a built-in alarm system and power supply, so the laptops can be charged while they are being stored. The network connection also allows us to display images or real-time messages on the laptops.”

The introduction of IP access control services has enabled the college to improve physical security at its main campus buildings. Jan Floris, project manager for ROC van Amsterdam, outlines the new process: “Students now come into the building and use a badge to enter through security doors. When they are in, an anti-pass back system prevents the badge from being given to someone else. The benefit is that access is only provided to authorised students and personnel. In addition we can confirm registration in the event of an emergency situation and access reports to account for time spent in the building.”

“We aim to roll out Cisco wireless technologies across all the locations which we will be using for the next three to five years. Our infrastructure is already used widely by teachers to access workplace productivity tools and we are hoping to increase the level of blended learning techniques we offer, as well as gradually integrating video conferencing and connected real estate functions, such as video surveillance, heating, lighting and cooling into the network.”

—Hans Doffegnies CIO/IT director ROC van Amsterdam

Business Results

Reaping the benefits of a converged IP environment, the college has optimised communication and improved the flow of information, while reducing costs through the rationalisation of infrastructure and improved efficiency delivered by a standardised, centralised and simplified IT management model. This extends to the use of virtualised firewalling, which takes advantage of the way in which the buildings are connected to one Internet portal to protect the campus with one firewall and not 67 localised services.

Students can now access all of their learning material online from any location—in the college or from home. The new environment is also helping to promote collaboration. It enables students to work together on projects and teachers to jointly develop online material and e-learning modules. Utilisation of campus facilities and shared resources, such as laptops, has also been improved.

ROCvA is able to complete most network administration and management tasks remotely. The planned integration of voice and wireless services within the college's Cisco network management suite will provide ease of operations and reduce workloads further.

Importantly, the new approach is delivering a more adaptive and agile IT environment that is better aligned to the business. Henk van der Veer expands: “We move around a lot and one of the biggest issues is hooking up all the different infrastructures. This system delivers all the functionality in one go. We can now set up central services, such as voice, Internet access and administration with ease to cope with campus expansion.”

Looking ahead, the converged infrastructure has helped to create many new opportunities. Hans Doffegnies, CIO/IT director for ROC van Amsterdam, explains: "We aim to roll out Cisco wireless technologies across all the locations which we will be using for the next three to five years. Our infrastructure is already used widely by teachers to access workplace productivity tools and we are hoping to increase the level of blended learning techniques we offer, as well as gradually integrating video conferencing and connected real estate functions, such as video surveillance, heating, lighting and cooling into the network."

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Technology Blueprint

The campus network is based on the Cisco Service-Oriented Network Architecture (SONA). This architectural framework offers a path to migration. It allows the enterprise to pragmatically implement the intelligent information network vision to transform an existing infrastructure—with all its interconnected components—into a single, integrated system that unites disparate networks, applications and databases.

The Cisco SONA allows ROCvA to run both their administrative and educational applications over the network since everything is centralised on redundant data centres, which greatly simplifies the deployment of services—such as IP telephony, directory services and educational IP-based video and video communication.

ROCvA's locations are linked on a citywide WAN providing a minimum of 100 Mbps between sites, with 1 Gbps between larger locations. The end-to-end Cisco SONA comprises a

core of Cisco Catalyst 6500 Series switches, with two Internet access nodes, and Cisco Catalyst 6500 Series, 4500 Series, 3560 Series, 2960 Series or 2950 Series switches at each location, depending on the size of the building.

The WAN uses ROCvA's own fibre and supports two McDATA data centres along with teacher access to a standard suite of workplace tools that includes Microsoft Office, PeopleSoft Human Resources and PeopleSoft Enterprise Student Administration.

ROCvA is building on this infrastructure with a range of Cisco wireless products, Cisco Unified CallManager Version 4.1 call processing software and Cisco Unity Unified Messaging, plus a variety of Cisco 7960 and 7940 Series Unified IP Phones. Finally, ROCvA has implemented parts of the Cisco Connected Real Estate solution set, including IP-based access control and building control systems for heating and lighting.

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—Jan Floris project manager ROC van Amsterdam

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