# ZYXEL
## NETWORKS

# Success Story

## Zyxel Nebula Solution Helps Top Thai University Improve Network Performance and Teaching Quality

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| **INDUSTRY** Education | **CUSTOMER** Rajamangala University of Technology Thanyaburi | **COUNTRY** Thailand | **SOLUTION** Zyxel Nebula Solution |

## Overview

### Challenges

- Boost weak and unstable WiFi connectivity
- Increase network coverage to cover entire campus, including outdoor areas
- Integrate the new infrastructure smoothly into the existing system

### Solution

- Zyxel Nebula Solution

### Results

- Stable, high-speed internet services across the business faculty's offices, classrooms, and outdoor areas, ensuring high-quality teaching and user experiences
- Seamless connectivity throughout the school's dormitory and Faculty of Business Administration without a single dead spot
- Centralized, easy-to-manage interface makes cloud networking a cinch for staff

### Summary

With over 20,000 students and 1,000 faculty roaming its expansive, green campus, Rajamangala University of Technology Thanyaburi is one of Thailand's top colleges. Despite its dedication to fostering the next generation of innovators, the university found that its existing wireless infrastructure was hindering this mission when it came to its dormitory and business school. At the heart of the problem was the poor performance and difficult management of its access points. Fortunately, however, this is where Zyxel excels, and our Thailand team knew just what was in order. Read on for the full story.

## Background

Rajamangala University of Technology Thanyaburi, located in central Bangkok, is leading Thailand's push to become a leading innovation hub. Ranked as one of the top four technical universities in the country and one of the top 25 in all of ASEAN, the school has over 20,000 students at its 11 faculties, which are spread across two campuses. The school has received national and global recognition, most recently earning a national teaching academy award and winning a national robotics contest.

## Challenges

In this day and age, internet access – both in the classroom and in student residences – is critical to keeping students engaged and competitive. And it was here that the school was running into problems.

Students living in the school's dorms were far from satisfied with the coverage provided by the existing access points: the signal was spotty and, where it was accessible, it was weak, significantly impacting their study.

The network infrastructure wasn't faltering only at the dorm. The Faculty of Business Administration was also requesting urgent improvements to its coverage. As one of Thailand's top business schools, the faculty needed stable, high-speed connections for its teachers and students alike, for teaching in the classroom and research and communication out of it. The coverage area comprises both the department's classrooms and offices as well as outdoor areas – all of which were being underserved by the existing access points.

## Solutions and Benefits

Given the school's less than favorable experience with the previous vendor's APs, customer support was a top priority when seeking a new supplier to upgrade the infrastructure. Having built a reputation for hands-on, responsive support, Zyxel's Thailand team was the obvious choice.

Putting Zyxel over the top was the demonstrated performance and remote management capabilities of its wireless solutions. Zyxel's access points and switches deliver strong signals that promised to more than meet the school's needs.

In the dorm, 160 **NWA1302-AC 802.11ac Wave2 Dual-Radio PoE Access Points** were installed – one in every room. These APs provide high-quality WiFi connectivity with minimal interference, powered by 802.11ac Wave 2 technology and Multi-User MIMO, ensuring smooth, simultaneous communication with multiple clients.

Making Zyxel's APs particularly suited to such a high-density deployment in a crowded environment are its advanced features. These include transmit beamforming (TxBF), which increases overall network transmission data rates, as well as 3G/4G interference immunity and DCS, which enlarge and enhance the service coverage to serve more clients and provide better quality connections.

Our team also deployed two **XGS1930-28HP 24-port GbE Smart Managed PoE Switch with 4 SFP+ Uplink** and ten **GS1920-24HPv2 24-port GbE Smart Managed PoE Switches** to power the APs and ensure stable connectivity in every room.

Meanwhile, at the Faculty of Business Administration, a mix of indoor and outdoor APs was called for. A GS1920-24HPv2 was used to control two NWA1123-AC HD Access Points and nine **WAC6552D-S 802.11ac Dual-Radio Unified Pro Outdoor Access Points**. The former were installed in the offices and classrooms while the latter were installed around the faculty, providing Gigabit wireless connectivity to hundreds of users.

The **WAC6552D-S 802.11ac Dual-Radio Unified Pro Outdoor Access Points** features Zyxel's smart antenna, which dynamically changes its signal pattern to mitigate interference, extend coverage, and provide greater reliability to mobile clients. It's also futureproof in the most physical sense: designed with IP67 industry-grade weather proofing and built-in surge protection to provide an extra layer of defense against surges caused by lightning and ensure reliable operation in any conditions.

The devices in both the residence and business school can be monitored and managed via Nebula Control Center – an intuitive and user-friendly interface that is accessible anywhere, anytime from any browser.

With the new infrastructure in place and being controlled with ease by the school's IT staff, dorm residents can now walk from one end of the dorm to the other without hitting a dead spot – or even a weak spot. Meanwhile, business teachers and students alike are fully utilizing digital resources and services, delivering on the school's mission of providing Thailand's knowledge-hungry leaders of tomorrow with an enriched learning experience.

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# Products Used

## NWA1302-AC • 802.11ac Wall-Plate PoE Access Point

- Provides wireless, wired and PoE connectivity with 802.11ac as well as a built-in Gigabit switch
- Compact design with a unique cable makes it to fit into all mounting places and saves space
- NebulaFlex™ gives the flexibility to switch between standalone and license-free Nebula cloud management
- Enterprise-class 2x2 802.11ac AP with smart antenna supporting combined data rates of up to 1.2 Gbps

## NWA1123-ACv2 • 802.11ac Dual-Radio Ceiling Mount PoE Access Point

- NebulaFlex™ gives you the flexibility to switch between standalone and Nebula cloud management
- Nebula cloud management allows easy deployment, real-time configurations, and access to all your APs at any time
- Achieve reliable connectivity, support for more connected clients, and better wireless coverage with the latest Wave 2 WiFi standard
- Up to 300% more performance from MU-MIMO technology
- Robust build quality, including solid-state capacitors and advanced heat dissipation design, to ensure long life and operational reliability
- Protect against 3G/4G cellular network interference with Zyxel advanced cellular mitigation design

## WAC6552D-S • 802.11ac Dual-Radio Unified Pro Outdoor Access Point

- NebulaFlex Pro allows users to switch among standalone, on-premises controller managed or intuitive Nebula cloud managed modes as needed
- 802.11ac outdoor access points deliver Gigabit wireless connectivity in crowded public outdoor environments
- Excellence performance with integrated smart antenna or high-gain MIMO antenna options proven to provide better coverage and reliability
- Designed for harsh outdoor environments with up to IP67 industrial-grade weather proofing

# Products Used

## XGS1930-28HP • 24-port GbE Smart Managed PoE Switch with 4 SFP+ Uplink

- Handles the increasing high-bandwidth applications in your office affordably with four built-in 10G SFP+ uplinks
- NebulaFlex gives you the flexibility to switch between standalone and our license-free Nebula cloud management
- Nebula cloud management allows easy deployment, real-time configurations and effortless access to all your cloud devices anytime
- Easy management and setup with web-based interface and intuitive wizard
- User-friendly design includes one-touch "Restore" button and intuitive PoE usage LED
- Smart fan design offers silent operations in both desktop or rack-mount environment

## GS1920-24HPv2 • 24-port GbE Smart Managed PoE Switch

- Up and running in minutes — supports NebulaFlex™ Technology to shift between standalone and License Free Nebula cloud flexibly
- Standalone: Easy management and setup with web-based GUI
- Nebula Cloud: Nebula allows simple deployment with agile network management
- Unique port combinations futureproof the network
- Smart fan design offers silent operations in your office
- Complies with IEEE 802.3at PoE Plus with a large PoE budget of 375W

## Nebula Control Center (NCC)

- Responsive web design and intuitive user interface
- Multi-tenant, multi-site view
- First time setup wizard
- Role-based administration privileges
- Real-time and historical monitoring/reporting
- Rich site-wide management tools
- Powerful organization-wide management tools
- Configuration changing alerts
- Misconfigure protection against disconnecting NCC
- Configure login auditing

### About Zyxel Networks

Focused on innovation and customer-centricity, Zyxel has been connecting people to the Internet for over 30 years. Our ability to adapt and innovate with networking technology places us at the forefront of creating connectivity for business and home users.
We're building the networks of tomorrow, unlocking potential, and meeting the needs of the modern workplace — powering people at work, life, and play.
Zyxel, Your Networking Ally.