United International University Case Study

About United International University

Approved by the people's Republic of Bangladesh and the University Grants Commission (UGC) in 2003, United International University (UIU) is a private university located in Dhaka, Bangladesh. With an initial student population of 76, the university has grown tremendously to over 6,000 students and has become one of the country's leading educational institutions.

Dedicated to becoming the centre of excellence in teaching, learning, and research in South Asia, UIU strives to create a campus environment conducive to quality academic experiences. This involves developing integrated, interactive, and caring relationships among teachers, students, guardians, and employers. It also includes creating excellent human resources with intellectual, creative, technical, moral, and practical skills to serve the community, industry, and region.

PANDUIT™

infrastructure for a connected world

Company
United International University

Country
Dhaka, Bangladesh

Industry
Education

Business Challenges
To provide a future-proof, reliable, and scalable network infrastructure within a tight timeframe to accommodate projected growth.

Panduit Solution
Panduit Enterprise and Data Centre Solutions
- Net-Verse™ Cabinet System and Racks
- FiberRunner™ Overhead Cable Routing System
- Wyr-Grid™ Overhead Cable Tray Routing System
- High Speed Data Transport copper and fibre optic cabling systems
- Cool Boot™ Raised Floor Air Sealing Grommet

Business Benefits
A reliable, manageable network infrastructure that enables UIU to sustain its reputation as a leading educational institution while providing first-rate technology resources for its top scholars and educators today and well into the future.

Using Innovative Technology to Expand Educational Opportunities

Panduit's Enterprise and Data Centre Infrastructure Solutions help United International University support quality education while positioning itself for future growth

Business Challenges

As the demand for quality education grew in Bangladesh, UIU envisioned a planned growth spread on a yearly basis. From the time it was established, the university grew tremendously to about 18,000 sq. ft. of floor space. With this capacity, UIU was supporting state-of-the-art IT and computer labs, a language lab, engineering labs, and other essential campus facilities.

To support additional growth and solidify Bangladesh as an internationally known resource for quality education, the university needed to sustain the increasing demands for faster speeds and higher bandwidths within campus buildings. This meant construction of a new permanent 12-acre campus. The enhancement would allow UIU to accommodate upcoming demands on its current system while keeping pace with student growth and technology advances.

Achieving this goal would involve upgrading the data centre and the enterprise facilities to support all logical and physical systems such as CCTV cameras, access control systems, and Wi-Fi device coverage.

UIU had a targeted timeframe of five months to move into its sprawling new campus. During this period, the project had to be delivered, designed, installed, and tested across six floors in a building that covers 13 floors, each with a floor area of approximately 55,000 sq. ft. per floor.

"With tight deadlines and large floor areas to cover, UIU needed a proven end-to-end solution with effective network integrity across the entire campus," said Prof. Dr. Chowdhury Mofizur Rahman, vice chancellor, United International University.

Strategic Objectives

With its five to ten-year plan, the university estimated a strategic growth in the number of students, university staff, educational disciplines, faculties, educational facilities, and research & development. Sustaining this growth required both applications and a reliable, robust network infrastructure to be in place today to handle tomorrow's anticipated expansion.

Building a future-proof network infrastructure would position UIU to easily accommodate current and upcoming demands on its network. The new infrastructure would confirm the university's position as a major player in the development and dissemination of knowledge, research, and technology in Bangladesh.
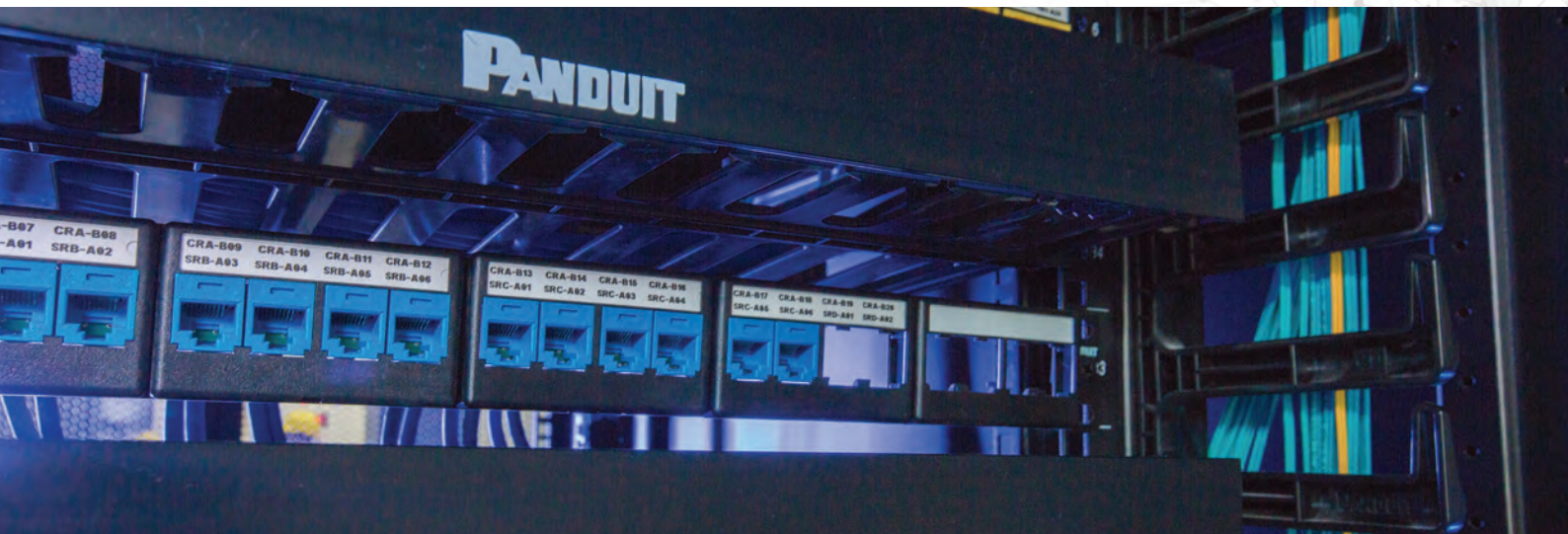
Part of the university's strategic plan is to eventually migrate into a University Application Management System that smoothly integrates all university functions, rather than having them siloed. This migration would allow UIU to seamlessly manage the entire academic and administrative processes and facilities of the campus, adding value to the services provided to both staff and students.

Panduit Solution

Netcom Technologies (PVT.) Ltd., a Panduit certified integration partner, recommended Panduit's expertise for UIU's project. Upon visiting other Panduit certified sites, the university witnessed the quality of service and workmanship that Panduit provides. Panduit's extensive experience with implementing large networks as per international standards along with lower cost of ownership, consistent high performance, maximum up time, and end-to-end modularity of its solutions made it an easy choice. Also, because Panduit's strong partner ecosystem with Cisco directly contributes to agility and increased operational efficiency, UIU can easily manage its key network and data centre infrastructure components.

The first phase of the project involved the design, supply, installation, testing, and commissioning of the enterprise and data centre physical network infrastructure. This involved the first six floors of the 13-floor building. Each floor space occupies approximately 55,000 sq. ft. The project was divided into two components with the first component covering the enterprise network infrastructure and the second component covering the data centre.

Given the size of each floor, the designs were completed on a floor-by-floor basis. Each floor had its own set of telecommunication rooms to terminate the horizontal cabling. The backbone cabling design merged each floor design into the data centre, where the backbone cabling terminated. The data centre designs showed the positions of the communications, cabinets, UPS, and precision air conditioning units. Although the designs were drawn up during the proposal phase of the project, they were modified to reflect change in requirements during the implementation phase of the project.

At the time of publication, the network infrastructure implementation of the remaining seven floors is underway. Over the next two years, the campus will be extended to include two additional academic buildings, an auditorium, a library building, and a hostel.

Enterprise Network Infrastructure

UIU deployed Panduit Category 6 copper cabling to each floor of the enterprise network infrastructure, terminating into designated telecommunication rooms. OM4 multimode 10G fibre optic backbone cabling and components for the inter floor connectivity linked each telecommunication room to the data centre. Delivering maximum bandwidth, system reliability, and scalability, the copper and fibre optic connectivity also provides a migration path for future applications in the university's data centre.

In addition, the following systems were deployed:

- CCTV Cameras – located at exterior access doors, hallways, and classrooms; All cameras are PoE based and connected with Panduit Copper Category 6 cabling
- Access Control Systems – Cover main entrances and office entrances; PoE based and connected with Panduit Category 6 cabling
- Wi-Fi Device Coverage – Total of 90 devices from the ground floor to the 5th floor; All devices are Cisco PoE based on Panduit Category 6 Copper cabling

Wi-Fi network Category 6 copper cabling was deployed for the first six floors and the Cisco Wi-Fi devices will eventually expand to include the entire campus. Also, UIU plans to adopt a BMS System to integrate HVAC and lighting.

Data Centre

Panduit Net-Verse™ D-Type server and network cabinets and racks are paired with Category 6A small diameter copper cabling and components. These cabinets house Cisco* switches, routers, and firewalls and provide maximum flexibility and the capacity to manage high cable density in UIU's data centre network. The PatchLink™ Horizontal Cable Manager was used for managing cable in the telecommunications room in a reliable, consistent manner. The Panduit Cool Boot™ Raised Floor Air Sealing Grommet reduces bypass airflow which improves the cooling of network equipment and prevents debris from falling below the raised floor.

Part of the fibre installation was completed with Panduit's pre-terminated MPO cassettes. This allowed for a faster implementation time frame and reduced testing time. The data centre was designed according to Tier III Standards. The UIU enterprise network and data centre infrastructure were designed, implemented, tested, and commissioned according to TIA/EIA Standards for Commercial Buildings and the TIA-942 Standard for data centres.

Additional components include the FiberRunner™ Routing System and the Wyr-Grid™ Overhead Cable Tray Routing System to improve capacity management, accessibility, and mitigate risk within the university's data centre. Labeling and identification systems ensure that UIU can quickly and accurately identify fibre optic and copper cabling, patch panels, and faceplates.

In addition to Panduit's solution, UIU chose Netcom Technologies (Pvt.) Ltd, a local certified integration partner for the following reasons:

- Strong dedicated 17-year relationship with Panduit in specifying and delivering its end-to-end infrastructure solutions, according to international standards best practices

- The highest number of approved site certified infrastructures implemented as per TIA/EIA Standards

- Emphasis on continuous learning and importance on team training and certifications on Panduit's infrastructure solutions

Business Benefits

The Panduit Data Centre and Enterprise solutions enabled improvements that increased system availability and reliability across the entire UIU campus. These scalable and flexible solutions allow for better operational efficiency and the agility to sustain new systems for future growth. For example, UIU now experiences ease of deployment and improved network performance for its high-speed and bandwidth applications while exceeding the latest industry standards. As a result, the campus is positioned to meet existing and emerging technology needs well into the future. Also, the exclusive use of Panduit copper and fibre across the campus made changes easier to perform. Panduit delivered the project on time, which allowed UIU to seamlessly continue its business operations. The new network infrastructure establishes the basis for ongoing improvements in campus operations, so the university can now optimize technology while improving the educational experience for staff and students.

"The Panduit solution delivered our complete infrastructure to TIA/EIA Standards and the entire infrastructure is certified under Panduit's 25-year Certification Plus^{SM} System Warranty,"** said Prof. Rahman. "That gives us confidence that the system will meet our demanding network requirements. Also, Panduit's relationship with Netcom Technologies (Pvt.) Ltd and its close interaction and partnership with its customers provided the assurance that our newly installed network infrastructure will exceed our performance expectations and future networking needs."

*All trademarks, service marks, trade names, product names, and logos appearing in this document are the property of their respective owners.

**Restrictions apply. Please review the Certification Plus^{SM} System Warranty terms and conditions at www.panduit.com to learn more.

PANDUIT™

Panduit Corp.
World Headquarters
Tinley Park, IL 60487

cs@panduit.com
US and Canada: 800.777.3300
Europe, Middle East, and Africa: 44.20.8601.7200
Latin America: 52.33.3777.6000
Asia Pacific: 65.6305.7575

www.panduit.com