

Company Builds Sustainable, Highly Efficient Headquarters Facility

Panduit used IP-based Physical Security, Connected Real Estate, and Collaboration solutions to reduce costs and energy consumption.

EXECUTIVE SUMMARY
PANDUIT - Developer, Cisco Technology Developer Partner - Tinley Park, Illinois 5000+ Employees
BUSINESS CHALLENGE - Design energy-optimized building - Provide cost-effective physical security for global enterprise - Enable collaboration
NETWORK SOLUTION - Built physical infrastructure using Panduit cabling and communications solutions, which provided foundation for Cisco wired and wireless coverage throughout building - Used network as platform to connect and integrate Cisco solutions for physical security and collaboration - Used Cisco Connected Real Estate framework to integrate all 9000 building systems and sensors onto network
BUSINESS RESULTS - Consumed US\$0.63 less energy per square foot than U.S. average, for expected \$880,000 savings over five years - Accelerated notification and response to security events and building alarms - Enhanced collaboration by using business video



Business Challenge

Founded in 1955, Panduit develops and provides advanced solutions that help customers optimize the physical infrastructure and mitigate risk through simplification, increased agility, and operational efficiency. The company operates in 120 countries and makes its headquarters in Tinley Park, Illinois. Areas of focus include data centers, connected buildings, and industrial automation.

When Panduit began planning a new world headquarters building, executives wanted the facility to showcase the company's unified infrastructure vision, and to be a model of sustainability as measured

by the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. "One of our motivations for constructing a sustainable headquarters building was to minimize our power and cooling costs," says Vineeth Ram, vice president of global strategic marketing, Panduit. "More importantly, we wanted to do the right thing for the environment and society."

An important design criterion was to give Panduit the flexibility to use open standards-based systems from any vendor, for physical security, collaboration, and energy efficiency. "You have the opportunity to build a new headquarters building only once in a career, and we wanted the building to continue meeting our business needs for 30 years," says Darrin Norbut, senior manager for workplace resources, Panduit.

Network Solution

The new Panduit headquarters demonstrates the power of connected real estate for physical security, energy savings, and collaboration. The foundation is Panduit's own physical infrastructure solutions and Cisco® wired and wireless networks, which provide coverage throughout the entire 280,000 square-foot facility. The Cisco network connects all of the company's voice, video, data systems, including 9000 building systems and sensors. Integrating all building systems on the same network not only eliminates redundant network and operational costs, it also

enables automated business processes that reduce costs, accelerate awareness of events, and reduce energy consumption (see “Results”).

“By enabling real-time monitoring of our electrical consumption, the Cisco Connected Real Estate framework contributed to energy costs per square foot that are \$0.63 lower than the average non-connected building, saving US\$176,000 annually and more than \$880,000 over five years.”

—Darryl Benson, Global Solutions Manager, Connected Real Estate, Panduit

Panduit uses the complete suite of Cisco Physical Security solutions in the new world headquarters building and in branch offices. At headquarters, 120 Cisco IP Video Surveillance cameras monitor the building perimeter and restricted areas, and authorized personnel can monitor live and archived video streams from any web browser on a PC or smartphone, through Cisco Video Surveillance Manager. The Cisco Physical Access Control system protects exterior doors, gates, and restricted areas. Cisco IP Interoperability and Collaboration System (IPICS) enables Panduit personnel and fire, police, and emergency medical services personnel to communicate directly, using any type of radio as well as a telephone, mobile phone, or PC with special client software.

The world headquarters building also takes advantage of the Cisco Connected Real Estate framework and Cisco Collaboration solutions, including Cisco TelePresence™ and Cisco Digital Signs. “We chose Cisco solutions for our world headquarters building, because they are best in class, and we are confident that Cisco will be around for the

long term,” says Jeff Woodward, senior manager for Global Environmental Health, Safety, and Security at Panduit.



Business Results

More Efficient Security Operations

Headquarters security personnel can monitor and control video surveillance cameras and building access controls for all global offices over the WAN. “Cisco Physical Security solutions enabled Panduit to centralize security operations, eliminating the need for a full security operation at branch offices and saving \$653,000 annually,” Woodward says. The

investment will pay for itself in 1.5 years.

What’s more, the interoperability between Cisco Physical Security solutions accelerates event detection and automates response. Examples of increased operational efficiency include:

- If a Cisco IP Video Surveillance Camera detects movement in an area where people are not allowed, Cisco Video Surveillance Manager automatically directs a pan-tilt-zoom camera to follow the intruder. At the same time, Cisco Video Surveillance Manager sends a message to the Cisco Physical Access Control system to lock exterior doors, and signals Cisco IPICS to notify nearby security managers by sending a prerecorded voice message.

- An activated fire alarm can trigger a Cisco IPICS policy to instruct Cisco Physical Access Control Manager to open the gates for fire trucks and display evacuation instructions on Cisco LCD Professional Displays deployed throughout the building.
- When visitors arrive in the lobby, the receptionist can quickly find out if the sponsor is in the building because the visitor management system is integrated with the Cisco Physical Access Control system.

Environmental Sustainability and Lower Energy Costs

Panduit used the Cisco Connected Real Estate framework to integrate all 9000 building systems and sensors onto the Cisco IP network. "Every piece of information we can extract from the building is available on the Cisco network, including air temperature, air quality, humidity, energy consumption, lighting output, and lighting needs," says Darryl Benson, global solution manager for connected buildings, Panduit. The lighting system even automatically dims and brightens based on daylight load, which it detects from other network-connected sensors. "By enabling real-time monitoring of our electrical consumption, the Cisco Connected Real Estate framework contributed to energy costs per square foot that are \$0.63 lower than the average non-connected building, saving US\$176,000 annually and more than \$880,000 over five years," says Benson.

Panduit displays the 200 most important metrics from building systems on a web-based dashboard, which facilities personnel consult to monitor progress and spot anomalies. To automate notification about out-of-normal conditions that might waste energy, Panduit is integrating certain sensors with Cisco IPICS. When a sensor transmits an alarm, Cisco IPICS automatically notifies appropriate personnel by sending a prerecorded voice message to their phones.

The new Panduit data center also contributes to the building's energy efficiency. Cisco Nexus® switches provide the 10 Gigabit Ethernet connectivity needed to virtualize applications, reducing the number of servers to power and cool.

More Efficient Staffing, Through Organizational Collaboration

Instead of building a separate security operations center and network operations center, Panduit combined them into a single unified operations center, eliminating redundant servers and networking system and enabling the two teams to collaborate for ongoing operational efficiency. "We are cross-training facilities personnel to recognize data center alarms so that they can take the appropriate actions," says Woodward. "This reduces operational costs because facilities personnel are here on the weekends anyway." Combining the workspace for facilities and IT personnel also reduces time spent investigating false alarms, because IT personnel can quickly find out if an alarm from a building system resulted from a power outage, for example.

Global Collaboration

Panduit uses Cisco Unified Communications and business video solutions to enable collaboration across the global enterprise. Employees in any office can meet face to face, using Cisco Tandberg Videoconferencing and Cisco TelePresence system. And customers only need travel as far as the nearest Public Cisco TelePresence room to interact with Panduit executives. "We expect Cisco TelePresence to reduce travel costs and enable more frequent interactions between customers and our most senior managers, strengthening relationships," Norbut says.

Panduit headquarters also features Cisco Digital Signs, part of the Cisco Digital Media Suite, which the company uses to deliver customer communications and employee news in an eye-catching format. The Cisco Professional Series LCD Displays in public spaces display multimedia presentations about the company and its solutions. Some of these displays have touch capability, and visitors can use them for an interactive experience with Panduit's products. Displays in employee areas, such as cafeterias and elevator lobbies, broadcast internal news. "The Cisco Digital Signs solution enables us to distribute employee communications with less labor than if we put up and took down posters," says Woodward. "We can keep our messages fresh, and play them in our Singapore office as easily as we can here at headquarters."

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Next Steps

Panduit will continue to connect new building systems and energy-monitoring tools to the network as they become available, and add the same Cisco technologies in other global offices. Other plans include:

PRODUCT LIST	
Physical Security	• Cisco Video Surveillance Manager • Cisco IP Video Surveillance Cameras • Cisco Physical Access Control • Cisco IP Interoperability and Collaboration System (IPICS)
Collaboration, Voice and Video	• Cisco Unified Communications Manager • Cisco Unified IP Phones • Cisco TelePresence • Cisco Tandberg Videoconferencing
Digital Media Suite	• Cisco Digital Media Player 4400G • Cisco Digital Media Manager Digital Signage Module
Data Center	• Cisco Nexus Switch 7010 • Cisco Catalyst® Switch 6509
Network Systems	• Cisco Aironet® Wireless Access Points 1231 and 1242 • Cisco Wireless Control System • Cisco 3845 Integrated Services Router

- Integrating the Cisco Physical Access Control system with network access controls, so that an employee who has not swiped a badge to enter the building, for example, cannot log on to a PC.
- Sharing energy-consumption information with employees and visitors on Cisco Professional Series LCD Displays throughout the building, inspiring them to conserve.
- Integrating Cisco Physical Access Control with building systems. When the last person has left the building, the Cisco Physical Access Control system will communicate with building systems to reduce lighting and air conditioning, activate alarm zones, and power down network switches and other electronic devices to reduce power consumption.

Technical Implementation

For the safety of employees and firefighters, local fire department wanted to make sure that firefighters could maintain radio communication from within the five-story headquarters building. Panduit found a creative solution by installing an antenna and police radio in the building and integrating it with Cisco IPICS. “If we ever

need to join our own radio channel with the police channel, we can do it with the click of a button in Cisco IPICS,” Woodward says.

For More Information

To learn more about Cisco Connected Real Estate, visit: <http://www.cisco.com/go/trec>.

To learn more about Cisco Physical Security Systems, visit: <http://www.cisco.com/go/physicalsecurity>.

To learn more about Cisco Data Center 3.0 solutions, visit: <http://www.cisco.com/go/dc>.



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