Property Management Firm Simplifies Building Management

Transwestern and Metropolis Investment Holdings built fibre-optic network to intelligently connect people, process, data, and things in Pennzoil Place building.

EXECUTIVE SUMMARY

Customer Name: Transwestern and Metropolis Investment Holdings
Industry: Property Management
Location: Pennzoil Place Building in Houston, Texas
Company Size: 16 Employees in Building; 1800 in Company

CHALLENGE
- Increase tenant satisfaction
- Minimize energy costs
- Simplify management of two 36-story building towers

SOLUTION
- Embraced Internet of Everything trend, replacing multiple isolated networks with converged fibre-optic backbone
- Provided connectivity for tenants through Cisco switches with Power-over-Ethernet (PoE)

RESULTS
- Increased responsiveness of mobile employees
- Decreased energy costs by 21 percent in first year and by another 11 percent in next eight months
- Paid for 70 percent of investment by avoiding cost of separate building control and fire-alarm system networks

Challenge

Transwestern is a privately held real estate firm whose many specialties include property and facilities management and sustainability. Among its management properties is Pennzoil Place, two 36-story towers in Houston, Texas, built in 1975. Owned by Metropolis Investment Holdings, the award-winning building, Inc., has 1.4 million square feet of rentable space, currently occupied by 37 tenants.

Metropolis Investment Holdings encourages its property management partners to be innovative, to provide great value for tenants. So, when Transwestern began managing Pennzoil Place in 2009, the company looked for opportunities to reduce energy costs in the glass-walled building and to increase the efficiency of building management without sacrificing tenant comfort. “To compete in the Houston real estate market, we had to keep costs down and differentiate ourselves by providing innovative services,” says Roger Vasquez, director of engineering for Transwestern.
Efficient building management posed a challenge, for two reasons. One was communicating with approximately 35 mobile employees and contractors, including building engineers, cleaning staff, and security officers. The other challenge was the number and diversity of network-connected devices. Pennzoil Place has 95,000 points connected to the network, including fire alarms, wireless access points, video surveillance cameras, temperature sensors, air conditioning units, and monitoring points for British Thermal Unit (BTU) consumption and full-building electric energy consumption. Troubleshooting typically required two engineers who communicated by radio: one engineer to adjust the controls while the other monitored the management console. “We knew there had to be a better way,” Vasquez says. “When our consultant mentioned converged networks, we had our answer.”

**Solution**

After discussions with Zones, a Cisco Gold Certified Partner, Transwestern and Metropolis Investment Holdings decided to install a core IP network to connect all current and future building systems, communications systems, and physical security systems. “Our return-on-investment model showed that Transwestern and Metropolis Investment Holdings would recoup their investment in a Cisco core IP backbone for Pennzoil Place in two years,” says Stephen Lurie, regional director of solutions and services for Zones, Inc. “The secure, high-speed backbone connects all existing endpoints and systems in the building so that they don’t need separate networks, and will also work with any future technology added to the building.” Zones provided design, implementation, and Cisco SMARTnet® support services for the network and the building services that it supports.

Pennzoil Place exemplifies the potential of the Internet of Everything, referring to a new phase of the Internet where people, process, data, and things are connecting at an unprecedented scope and scale.

**Centralized Control of Building Systems**

Transwestern’s building engineers can now monitor and manage building systems from any web browser, for example, adjusting the schedule to automatically turn off lights.

**Communications and Collaboration from Anywhere, on Any Device**

To provide communications and collaboration services for Transwestern employees and contractors who work in the building, Transwestern and Metropolis Investment Holdings implemented Cisco® Business Edition 6000. The all-in-one solution supports voice, Cisco Unity® Connection for voicemail, Cisco TelePresence®, and Cisco Jabber™, which building engineers use on their iPads for presence and instant messaging. “Today we use Cisco Business Edition 6000 for our own employees,” Vasquez says. “Later we’ll use it to offer unified communications and collaboration as a service to tenants, on either a temporary or permanent basis. That’s part of our plan to convert IT from a cost center to a profit center.”
Approximately 90 Cisco Aironet® Wireless Access Points provide coverage through most of the building. With reliable Wi-Fi connectivity, building engineers can use wireless tablets to monitor and troubleshoot equipment from anywhere in the building. In addition, approximately 35 mobile employees, including security officers and custodial staff, use Cisco Unified Wireless IP Phones to reach each other anywhere in the building. “Cisco wireless phones are a cost-effective alternative to the Sprint Nextel service, which was discontinued,” Vasquez says. “Owning the wireless infrastructure saves us approximately $25,000 annually on cellular fees.”

Transwestern and Metropolis Investment Holdings are also implementing Cisco TelePresence EX-90 systems, which on-site property managers will use to join high-definition video and audio conferences with the building owners in Chicago. The two companies are also considering building a Cisco TelePresence room in the building that tenants can reserve, which is yet another way to make the building more attractive to potential tenants.

Safety and Security
To help protect people and property, Transwestern and Metropolis Investment Holdings capture video from approximately 45 analog and digital video surveillance cameras mounted in public areas such as elevators and the building lobby. Security officers can view live or archived video from any camera, using Cisco Video Surveillance Manager. Video Surveillance Manager works with analog as well as newer digital cameras, which made it possible to continue using existing cameras.

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 — Roger Vasquez, Director of Engineering, Transwestern

Security officers use the Cisco Physical Access Control solution to monitor and manage access to street entrances, the parking garage, and underground tunnels. The system provides email alerts, which eliminated the need for an outside security-alarm monitoring company, saving more than US$50,000 annually. Zones, the partner, integrated the Cisco Physical Access Control and Cisco Video Surveillance Manager solutions, so that, if a door opens after hours, the email alert includes a link to the corresponding camera feed.

Results
“The Cisco converged network has simplified our job as property managers, lowered energy costs, and will help us attract and retain tenants,” says Vasquez.

Increased Tenant Satisfaction
The ability to reach building engineers and security officers anywhere in the building, by calling their wireless IP phones or sending an instant message to their tablets, helps Transwestern respond more quickly to tenant requests and building issues.

In addition, new tenants appreciate having the option to not build their own network. “Instead, leasing agents tell tenants that they can connect to a nearby Cisco switch, which enables them to move in faster and at less cost,” Vasquez says. “Our tenants receive network services in days, not the many weeks they would have to wait in most office buildings.” One existing tenant needed to extend its network to newly leased space in another tower. “The service provider was going to charge $25,000 to complete the project in about six weeks, and we were able to provide the same result service in two days, for less than one-tenth the cost,” Vasquez says.
Reduced Energy Costs by More Than 20 Percent

By connecting building systems such as air conditioning units, motors, and pumps to the IP network, Transwestern and Metropolis Investment Holdings can monitor the systems’ energy consumption using third-party software. The company quickly discovered that certain air conditioning units had been operating 24 hours a day, possibly for years. Now the firm can control equipment operation according to a schedule, reducing run-hours.

“Gaining visibility into energy consumption helped us decrease energy costs by 21 percent from 2011 to 2012, and by another 11 percent in the first eight months of 2013,” Vasquez says. One innovation was using a third-party application that determines the latest time that air conditioning units can begin operating to reach the desired temperature by the time a tenant’s office opens. “Starting these systems even a few minutes later saves a significant amount of money because we have hundreds of pieces of equipment,” says Vasquez. “Lower operating costs help us offer attractive leased space in a very competitive market, despite the fact that our building walls are all glass.”

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— Roger Vasquez, Director of Engineering, Transwestern

Paid Back Investment Rapidly

Metropolis Investment Holdings recovered 70 percent of the investment in the Cisco fibre-optic network and Cisco Catalyst® switches by eliminating the cost of separate networks for a new building control system and fire alarm system. “We expect to fully recoup the cost of the network in two years,” Vasquez says. “All savings after that will contribute to the bottom line.”

Vasquez concludes, “Property management is a service-oriented business. Happy tenants are more likely to renew their leases with us and pay their rent and operating charges on time. Embracing the Internet of Everything concept has increased tenant satisfaction while also lowering operating costs.”
Next Steps

Now Transwestern and Metropolis Investment Holdings are thinking of new ways to capitalize on the potential of the Internet of Everything. Ideas include:

- Creating an energy-saving competition for building tenants: Transwestern is collaborating with Constellation Energy on the contest, which will allow tenants to monitor their carbon-reduction progress on the web and digital signage in common areas.

- Increasing the efficiency of work-order management: The idea is that tenants will visit a website to enter requests such as temperature adjustments, fixing leaks, and so on. Building engineers will be able to quickly acknowledge receipt of the requests from their iPads, helping to increase tenant satisfaction.

- Enabling retail tenants in the building’s underground mall to advertise with attention-getting digital signage: Transwestern and Metropolis Investment Holdings plan to later add touchscreens that provide traffic and weather information and broadcast emergency instructions.

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— Stephen Lurie, Regional Director of Solutions and Services, Zones, Inc.

**PRODUCTS AND SERVICES LIST**

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<td>Cisco TelePresence EX-90</td>
<td>The core network at Pennzoil Place is a building-wide fibre-optic backbone. One Cisco Catalyst switch on every two floors provides connectivity to tenants. “Tenants are reassured when I say the building network runs on Cisco gear because they have confidence in the reliability and security,” Vasquez says.</td>
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<td>Cisco TelePresence Video Communication System (VCS) Expressway</td>
<td>To save on data center space, power, and cooling, Transwestern and Metropolis Investment Holdings virtualized Cisco Unified Communications Manager, Cisco Video Surveillance Manager, Cisco Physical Access Manager, and Cisco Digital Media Server. These applications operate as 26 virtual machines on just three Cisco Unified Computing System™ (Cisco UCS®) C220 M3 Rack Servers. The small footprint minimizes capital expense and also lowers operational overhead, because an administrator can manage compute, storage access, virtualization, and networking from one interface.</td>
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| **Data Center**               | **Services**                        |
|                              | Cisco UCS C220 M3 Rack Servers      |
|                              | Cisco SMARTnet®                     |
|                              | Zones Design and Implementation     |