County Upgrades Infrastructure to Drive Municipal Services

Muskegon County upgrades to end-to-end infrastructure to maintain reputation as leader in service provision.

Executive Summary

Muskegon County

- **Industry:** State and Local Government
- **Location:** Muskegon County, Western Michigan
- **Number of Employees:** 1300

CHALLENGE

- Virtualize data center to improve opportunities for collaboration between neighboring municipalities
- Improve county employees' capabilities
- Reduce security risks of existing network infrastructure

SOLUTION

- Utilize fiber optic network to eliminate existing network management inefficiencies
- Transition servers to virtualized data center to enhance data management capabilities
- ·Upgrade existing VoIP phone system to improve inter-agency collaboration within Muskegon County

RESULTS

- Helped enable county to connect to majority of its municipalities through fiber optic network
- Facilitated county's ability to regionalize constituent programs and services, such as accounting
- Improved security and manageability of network, thereby improving employee productivity and effectiveness in delivering municipality-focused services

Challenge

Muskegon County in western Michigan, bordering the shores of Lake Michigan, is the twelfth-most populous county in the state. Muskegon has approximately 1,300 employees who work to maintain exceptional services to county constituents.

What makes Muskegon County unique as a government is that it offers a wide range of diverse programs to its local municipalities and the residents therein. In terms of service to its constituents, Muskegon is a leader in the state. For example, it has operated the wastewater collection treatment site for the entire surrounding community since 1973, a task usually delegated to individual municipalities. In addition, Muskegon has an established nursing home to serve the municipalities' elderly residents, and it is the only county in the state of Michigan with a dedicated millage to support veterans' affairs.

Muskegon County wanted to continue to provide exceptional services to residents, but was held back by its aging technological infrastructure. Specifically, Muskegon was running on an aging network with a prohibitively slow connection speed. Security was also a problem; all 35 of its network servers were housed in an unsecured room, which overheated so frequently that oscillating fans had to be installed. Operational security was also compromised by the county's cabling and switching infrastructure; its' switching and cabling closets shared space with maintenance closets, sometimes putting water in close contact with the equipment. This posed tremendous risks to the safety of the county's technological foundation, which in turn compromised the operations of county employees.

Furthermore, Muskegon County employees were using aging software to conduct their day-to-day work. For example, county accountants were still using the very first accounting software packages offered by Windows dating back to 1995. The outdated software had limited functionality, which decreased employee productivity and hindered the quality of the services provided to constituents. Even if Muskegon County wanted to upgrade operational software, their aging data center simply did not have the capacity to host the complex enterprise resource planning (ERP) capabilities of more updated software packages. Heath Kaplan, finance and management services director of Muskegon County, says: "Technologically speaking, we just hadn't progressed, and our outdated systems were slowing employees down."

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Solution

To support improved employee productivity, specifically in Muskegon's finance and accounting sectors, and continue delivering quality services to residents, the county needed to catch up and become a leader with regard to technology architectures and tools. Muskegon decided to begin an initiative to thoroughly replace and enhance its technological infrastructure.

The county decided that any technology initiative would need to encompass all components of Muskegon County's technological web: the data center, the phone system, application software, and the network. Kaplan says, "We engaged in reverse engineering during our planning stages for the rollout, first imagining our employee and constituents' needs, and building out the various technology solutions from there."

Fiber Optic Network

Muskegon County's first step was to utilize the capability of the existing fiber optic network, integrating Cisco 45000 Catalyst® Core Switches and Cisco® 2960S Power over Ethernet Access Switches. By utilizing its fiber optic network, the county was able to stretch its network, meaning more coverage, while retaining high percentage availability. The upgraded system also facilitates the design of a highly available, multiservice network. Ultimately, Muskegon County consolidated its network from multiple technologies to one, immediately eliminating inefficiencies in the system and changing the network management to a much more holistic approach.

Virtualized Desktops

Muskegon County also replaced its 35 disparate, unsecured servers with a two virtualized data centers. Virtualized data center architectures make it easier to respond to business demands and simplify IT operations, ultimately consolidating large amounts of data and providing easy, virtual access to the data at any time. To enhance this transformation, Muskegon County deployed Cisco's Virtualization Experience Client (VXC) 6000 Series, which allowed the county to unify voice, video, and virtual desktops. This unification was crucial for Muskegon, because its cross-municipality services often require intense collaboration and data-sharing/housing.

Phones

Muskegon County also replaced the aging phone system that county employees were using in their day-to-day work. Today, the county has updated and consolidated its phone system into a singular voice over IP (VoIP) solution, leveraging Cisco Unity® Connection 8.5, a powerful unified messaging system that allowed the county to personalize its communications options. Muskegon County also deployed the Cisco Unified Communications Manager 8.5, which provides signaling and call control services, facilitating signaling and device control, dial plan administration, call processing, among other capabilities. The entire county, City of Muskegon, and Central Dispatch (911) now benefit from being on the same voice system, using the same carrier, thereby simplifying collaboration and communications.

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In addition, high-definition Cisco 9951 Video Phones were integrated into the new updated phones to enable video conferencing and rapid real-time, face-to-face interaction between employees throughout the county.

Muskegon County's project represents a true comprehensive technology initiative undertaken by a local government: the various architectures are designed to work together to maximize collaboration across municipalities, and improve county processes. Kaplan comments on the gains stemming from the new technology deployment: "Most people see us as a sleepy little county, but we've become a model for years to come when it comes to information technology in local governments."

Results

Muskegon County's technology transformation has resulted in increased data security, cost savings, and enhanced collaboration between the county and its municipalities.

Security

The first new data center was positioned at the county's government headquarters, and the second data center will reside at a separate location a few miles away. This arrangement is to help ensure the safety of the data storage of the central unit, in the event of a manmade or natural disaster. The replicable nature of this backup unit with redundant fiber optic connections will help ensure that Muskegon County continues to deliver exceptional services to constituents under any circumstance.

Likewise, the Cisco Catalyst Core Switches and Power over Ethernet Access Switches resolved Muskegon County's critical security concerns that existed with the previous network infrastructure by offering critical updates to the previous high-risk switching and cabling closets.

Cost Savings

As a result of implementing the VoIP phone system, phone bills were reduced from US$75,000 to $20,000 per month in 2005. The latest installment in 2011 resulted in a further reduction of the cost of employee phone usage and management to approximately $1200 a month. In all, this technological upgrade has resulted in savings of more than $200,000 per year.

Enhanced Collaboration

Muskegon County's newly upgraded fiber optic network has enabled its government to connect to all the municipalities within the county that are connected to the fiber optic network, including their respective public sector agencies. For example, today the fiber optic network connects everyone, from the County of Muskegon, to local municipalities, to the central dispatch (emergency 911 services to all municipalities), to the local intermediate school in the district (MAISD). All relevant departments and agencies are interconnected with the fiber optic network, streamlining employees' abilities to share data and resources.

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Product List

ROUTING AND SWITCHING

- Cisco 4500 Catalyst Core Switches
- Cisco 2960S Power over Ethernet Access Switches

NETWORK MANAGEMENT

- Cisco Virtualization Experience Client (VXC) 6000 Series

VIDEO

- Cisco 9951 Video Phones

VOICE AND IP COMMUNICATIONS

- Cisco Unity Connection 8.5
- Cisco Unified Communications Manager 8.5

One example of the enhanced data-sharing capabilities can be seen in the collection of taxes. Most municipalities' treasurers use separate software to collect taxes. Muskegon County's new data center centrally houses large amounts of data from individual municipalities, allowing those municipalities to access their data virtually on an ongoing basis and receive IT support anytime that they need it.

Furthermore, the fiber optic network and data center has reinforced Muskegon County's reputation as a unique provider of cross-municipality service provisioning. With the county's complete technology upgrade, municipalities no longer have to outsource information technology or security support. Instead, Muskegon County has created an all-encompassing service to handle municipalities' finance, treasury, equalization, and accounting services. In effect, the technology has allowed the county to regionalize all of those needed programs and services.

Technical Implementation

Muskegon County's end-to-end infrastructure upgrade was facilitated through the strategic partnership of Cisco with ISI Telemanagement Solutions, Inc, a Cisco Premier Certified Partner.

For More Information

To learn more about Cisco VXC solutions, go to http://www.cisco.com/go/VXC.

To learn more about Cisco Catalyst Core Switches, go to http://www.cisco.com/go/catalyst.

To learn more about Cisco Desktop Virtualization for Government, go to www.cisco.com/go/govdc