MICHIGAN CATERPILLAR

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The Asterisk Company

CASE STUDY **ASTERISK**

OVERVIEW

The squeeze was on. The 15-year-old Avaya 8500 Definity G3 telephone system just wasn't doing the job. Michigan Caterpillar (better known as Michigan Cat), had tried to upgrade seven years ago by adding minimal VoIP capability. It wasn't enough. In order to get where they needed to be in terms of functionality and cost savings, they were facing an overhaul of the telephone system and redesign of the IT infrastructure throughout corporate headquarters located in Novi, Michigan, a half hour northwest of Detroit; with a webcentric VoIP system that would include their six additional locations throughout Michigan. Scott McCrea, Michigan Cat's chief information officer (CIO) admits he was a bit at a loss. "I'm a management guy, with a background in sales, leasing, and service; not an IT technician. I had no idea what was out there so I had to do some research." Six months later Michigan Cat had looked into Cisco, ShoreTel, and Siemens telephone systems, as well as considering an upgraded Avaya system. "The newer Avaya had some VoIP capability but there were some problems that were further hampered by our infrastructure," McCrea says. "We needed a good unified network and we just didn't feel Avaya matched our goals for value and flexibility."

The solution came from discussions with Jerry Jung, CEO of Michigan Cat's sister company Oak Adaptive, an innovator in Enterprise Resource Planning (ERP) software for Caterpillar dealerships worldwide. Their CEO was familiar with open source technology, most specifically, with Asterisk. McCrea admits he was skeptical Asterisk could handle the nearly 400 telephones that made up two customer call centers, Power Systems division, corporate headquarters in Novi; as well as locations in Grand Rapids, Mason, Kalkaska, Shelby Township, Saginaw, and Brownstown Township.

The search was on for a programmer who could not only implement the Asterisk open source software, but who could redesign the entire Michigan Cat IT/telecommunications infrastructure and implement SIP trunk technology that would greatly reduce costs. They found that person in John Laffey, who McCrea calls the "cornerstone of the project". Laffey collaborated with a team that included network manager Brad Corey. "It took us a couple of months to lay out the parameters and specs of the project which consisted of an evolving design; but Brad ran with it," Laffey says.

Beginning with the headquarters in Novi, the team worked one location at a time and completed all seven locations in six months, completing the project in mid-December 2010. "It was quite an experience for all of us, but Asterisk has provided Michigan Cat with a seamless, flexible system that is easier to use than we ever expected," says Laffey.

Michigan Caterpillar Implements Asterisk Across Seven Locations and Reduces Call Center Costs By More than 40%

CHALLENGE

Because Michigan Cat designed from scratch, the IT infrastructure to support an entirely new telephony system that consisted of corporate headquarters, two call centers, and six other locations; John Laffey and Brad Corey had their work cut out for them. The Avaya 8500 located at the Novi location consisted of Avaya's proprietary Definity G3 product suite. The other six locations had Centrex lines and additional analog lines connecting them to the other stores and the PSTN, that is, analog lines with a little additional functionality supplied by Sprint so they had 4-digit dialing within the state of Michigan. Originally developed for industrial or large quantity users, many of the locations utilized one or more PRI's (Primary Rate Interfaces) operating within the Integrated Services Digital Network (ISDN) in order to implement multiple Device Software Optimization (DSO). This process enabled them to work faster, at a more reliable rate, and at a lower cost; however, even though the DSO accommodates enterprise-wide development processes and a broad array of hardware and software partners transmitted between two physical locations, it still could not compete in cost savings with SIP trunks. In addition to the availability of technology that would reduce costs even more, the existing infrastructure did not support more than 15 VoIP phones, and there were problems transferring calls into and out of the call center. Furthermore, the call quality was not up to standard for a company grossing $400 million in revenues annually.

Add to the complications an aging AT&T network backbone that had been overhauled already in order to accommodate upgrades in the old Avaya system.

SOLUTION

Laffey and his team started the implementation at Lansing, the company's smallest store, moving on store by store from smallest to largest. Novi made up about 40% of the total phones in production, with the call centers employing roughly 30-35 people.

Michigan Cat was spending an exorbitant amount of money on the old Avaya system, which offered very little value in terms of support. Upon implementing Asterisk, the world's most flexible and widely-used communications platform, providing features that are highly competitive with or exceed the power of proprietary telephone systems, the cost savings were immediate. As an open source concept, Asterisk is free, and turns an ordinary computer into a communications server. Michigan Cat chose Cisco hardware, switches, and routers because it was compatible with the existing hardware infrastructure, but the end-product savings were undeniable. Cisco's complete VoIP telephony system including hardware would have run Michigan Cat about $550,000. They implemented Asterisk with Cisco hardware for just $200,000.

RESULTS

"We have saved forty to fifty percent of our former carrier costs by implementing SIP trunks," McCrea says. SIP (Session Initiation Protocol) is the preferred choice for establishing sessions in an IP network and makes available a number of innovative collaborative multi-media services supported by Asterisk. SIP trunks let Michigan Cat use VoIP outside the enterprise network. A SIP trunk is a virtual phone line that utilizes a broadband (Internet) connection for access, and creates two-party, multiparty, or multicast sessions that include Internet telephone calls, multimedia distribution, and conferences. SIP trunks make multiple simultaneous conversations possible, locally and internationally.

Michigan Cat purchased 360 Polycom phones. Ninety percent of them were Polycom Soundpoint IP 335s for the majority of employees, designed for cubicle workers and call center operators. They have high quality, cost effective, advanced telephony features and HD Voice technology, making voice communications more effective and productive.

For the switchboard operators and receptionists, they purchased Polycom Soundpoint IP 650 PoE SIP telephone modules; and a handful of Polycom Soundpoint IP 450 PoE SIP executive phones. The IVR (Interactive Voice Response) lets the administrator set rules for after hours and sends voice mail to mobile phones and email. Michigan Cat also bought the Flash Operator Panel 2, the first panel developed for Asterisk in 2004, and still the most widely used operator console. "Our operators now sit before a webpage interface rather than a flashing panel of buttons and lights," says Laffey. "It is so much easier for them to see who is available and to look up contact information from a centralized database."

"From a management standpoint, one of the most helpful aspects of the new Asterisk system is the OrderlyStats feature," says McCrea. Orderly Stats, made for Asterisk-based call centers, help managers understand the critical factors that power performance in the call center. The software provides information that enables you to access the call routing capabilities of the call center on a rep-by-rep basis, or as the center as a whole. It gives insight into customer behavior and call trends that can be used for future training. "It is just a web-based toolbar that provides our managers and agents with valuable training data and call efficiency," says McCrea.

"I can't say there were no 'gotchas' along the way because this was a complex project," Laffey says, "But knock-on-wood, there was nothing in the Asterisk implementation that set us back on our heals or left us wringing our hands. We had a great team who worked tirelessly to get seven major locations operable. Asterisk provided us with a seamless, flexible and user-friendly telephony solution."

Digium's vision is a world based upon open communications.

Our mission is to transform the way businesses acquire and operate their communications systems through the application of open source software.

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