CASE STUDY

Smalltalk
CONSULTING LTD.

ABOUT NODAK ELECTRIC COOPERATIVE

Nodak Electric Cooperative is a Rural Electrical Cooperative whose primary objective is to provide the high quality electricity distribution at a low cost to its 18,000 residential, commercial and industrial customers.

THE CHALLENGE

Nodak Electric's expansive service area covers 8,200 square miles in the northeast corner of North Dakota. Due to the size of the service area, many employees are stationed far from the corporate office and often did not have convenient access to ongoing and recent changes to the electrical infrastructure.

A critical component in a field employee's role is to understand how the electrical infrastructure is architected, as well as diagnosing and solve problems as they arise. Workers often refer to "wall maps" – complex maps that represent Nodak's electrical system – when outages occur, equipment is inspected, distribution is modified, and maintenance is performed. These maps document the company's complex network of power lines, transformers, poles, underground equipment and substations. Because the wall maps are large and are difficult documents to generate, they were printed very infrequently.

FAR FROM STATIC

Nodak Electric's distribution system is very fluid - changes are made on a continuous basis –and that meant that maps were outdated almost the very day they were printed. As a result, field workers continuously relied on out- of-date information to perform their jobs. And while the linemen reported changes to the home office daily, they had to hand draw changes on their physical maps. Nodak sought to replace this inefficient system with a digital mobile solution.

"We wanted a model and a mechanism to distribute up-to-date information out to our work crews, and we wanted to be able to manage that system in a streamlined fashion," explained Lucas Kindseth, Information Systems Coordinator, for Nodak.

THE SOLUTION

The first step for Nodak was to digitize its wall maps and provide mobile devices to its crews so they could access the documents in the field.

The next step was to provide to its work crews the right tool to display wall maps. Nodak initially considered ruggedized laptops, but "At $4,000 a piece, it wasn't economically feasible for us. There was no way we could have rolled out the initiative," said Mr. Kindseth. Moreover, "Early tests of the laptops showed disappointing results. Feedback indicated that operating a laptop in working conditions was overly cumbersome."

Finally Nodak evaluated iPads. The form factor was right for linemen out in the field, and the $500 price per unit fit within Nodak's budget. To render the maps, Mr. Kindseth tested Corporate Smalltalk Consulting's Large Viewer™ App.

Large Viewer allows users to view documents with large, non-standard pages, such as blueprints, electrical grids, design schemes and extremely large photos on their iOS devices. The app supports 55 file types; opening up the world of mobility to technicians such as Nodak's work crews who depend on non-standard large format documents to perform their jobs. Large Viewer features a

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Mr. Kindseth, Information Systems Coordinator, Nodak Electric Cooperative
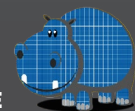
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proprietary approach to document rendering that promotes both instantaneous page loads and natural scrolling. Initial tests showed that Large Viewer could easily render Nodak's 450 mega-pixel maps – a huge breakthrough for the initiative. And because Large Viewer integrates with cloud based file storage systems such as Dropbox, it provided a streamlined way to distribute up-to-date wall maps out to Nodak's work crews.

"With Large Viewer we were able to scale down these massive documents and display them on an iPad. And leveraging the cloud, which is built into Large Viewer, we could distribute updated information to our crews wherever they are," said Mr. Kindseth. "The App really met our needs."

And thanks to Large Viewer's caching feature, the crews can still access and zoom in and out of the maps when they travel outside of their wireless access service areas. "Corporate Smalltalk specifically built this feature for us. They've been very willing to meet our requirements, which is great."

TANGIBLE RESULTS

The crews at Nodak are extremely happy with the entire iPad initiative, and with the Large Viewer app. Nodak uses Dropbox and Large Viewer to distribute up-to-date information to its linemen, eliminating the need for the company to generate these complex documents, and sparing workers the burden of driving to the warehouses to review them.

The linemen are also thrilled with Large Viewer's scrolling. "Large Viewer lets us scroll across an entire work area without any limitations of individual pages that we were running into using the laptops. Users can go to the north end of our service area to the south end of our service area in a seamless fashion," said Mr. Kindseth.

He continued: "Large Viewer answers one of the things that we didn't think was possible, which is viewing these very complex, very detailed maps on something like an iPad. The speed, when you're using Large Viewer is superior to viewing a similar file on a PC, which is surprising since laptops have more horsepower and memory than an iPad. I'm not sure what kind of magic Smalltalk worked into the app, but it has been great for our needs."

ABOUT CORPORATE SMALLTALK CONSULTING

Since 2008, Corporate Smalltalk Consulting (Corporate Smalltalk) has helped large multinational corporations, professionals and government organizations overcome the last remaining challenges to mobility: Viewing and accessing large and non-standard documents on iOS mobile devices. We offer a number of applications that enable engineers, architects, design firms, minerals, law firms and a host of other professionals to access, view, print, email and convert-to-PDF their non-Microsoft Office documents while they're away from their computers. Additionally Corporate Smalltalk's proprietary approach to viewing provides for instantaneous rendering of documents, delivering a MacBook Pro™-like experience on iOS mobile devices

Corporate Smalltalk was founded in 1994 and initially focused on Smalltalk Virtual Machines and provided services to such clients as Disney, MIT, and the governments of Canada and Germany. In the spring of 2008, Corporate Smalltalk Consulting was one of the first companies in Canada to be granted a license to write iPhone apps for the Apple Store. Today we offer numerous apps to promote mobility, Large Viewer™, PDF, PDF Viewer, Tiff Fax Viewer+™, Fax Reader™, Tiff, LargeMaps ™, USB Stick™, Can Opener™, Aeronautical Charts™, and others, and are available in the iTunes App store.
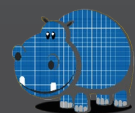
Corporate Smalltalk Consulting's Large Viewer™ App.

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Mr. Kindseth, Information Systems Coordinator, Nodak Electric Cooperative

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