

The GIS Platform vs Mother Nature

When I ran electric operations for a power company in New England, I had the most hardworking, dedicated crews working for me. That was the good news. The bad news was they were incredibly competitive. Why is being competitive bad news? New England as you probably know is famous for three things (at least). One is the most competitive sport teams around. Two, trees. The other is for the wicked bad weather (note the regional slang term), particularly in the winter. The problem with the weather was not just the volume of snow, but the moisture content. While Chicago has the reputation for being the windy city, New England is no slouch when it comes to wind. Wind, heavy wet snow, lots of trees and overhead power lines adds up to power failures.

I was in charge of power restoration. The trick with power restoration was to get a good assessment of the damage caused by Mother Nature. Since trees were everywhere, you never really knew if a power failure on a circuit was caused by one tree taking out the circuit or a hundred trees taking out parts of the circuit. The process is to do a rapid damage assessment to determine two things. How many jobs the crews have to do to put fix the damage and based on the number of jobs how long it will take to get everyone's lights back on.

The way the company was organized was by district – north, south, central, etc. We had service centers in each district. Here where the competitiveness came in. You would think each district was a sports team. During big storms, each district would battle to see which group could restore the customers the fastest. That was fine. The problem was each district would hoard their crews. So while the north would be doing smaller service drop jobs, the south might have been struggling to still repair main line jobs. This meant that there were a lot more people out of power in the south than in the north. Had I had a better handle on the types of work going on in each of the districts, I would have immediately dispatched crews from the north to the south to optimize the restoration across the entire company. The reason why this was difficult is because I didn't have a solid situational awareness of the entire restoration effort. I knew customer outage numbers and the number of crews assigned and the number of jobs, but it was tough to determine the overall impact of the restoration effort.

The competitiveness of the crews was noble. Yet it didn't provide the optimal restoration for the whole company.

What I needed then was the ArcGIS platform. It would have allowed me to see the entire restoration effort from the beginning to the end. I would have been able to speed up the damage assessment, since back in those days (and for many utilities today), damage assessment is a slow manual and arduous process. It often starts with lots of people with forms, pencils and paper maps traipsing through the snow. They would spend several hours in gathering all this information. Then they would head back to the service centers where people would organize the forms, then eventually input the information into spreadsheets trying to make sense of the data. With the ArcGIS platform, field workers gather damage and immediately transmitted the damage information (along with photos) to the Emergency Operations Center where a dashboard shows where the damage has occurred. By doing rapid damage assessment, dispatches can see the extent of the damage quickly and make crew staffing decisions in an optimal way.

Had I had that simple ability, the battle between the north and the south would never have occurred. The immediate situational awareness of the damage would have quickly indicated that there were not

enough crews in the south from the beginning of restoration efforts rather than halfway or three quarter way through the process.

The platform gives me an earlier alert that maybe I didn't have enough crews to handle the outage. I can then arrange to have contract crews, or foreign crews (from neighboring utilities) to supplement the workforce, instead of waiting to see the progress of restoration drag on for too long. I see the progress of the restoration effort in much more dynamic way. I can incorporate data from the Outage Management System, the Automated Vehicle Locator (AVL) system, and the SCADA system to get a real time view of the situation at every step along the way.

Restoration involves more than just getting crews out into the field, cutting away dangled wires from downed trees. It involves communication, collaboration and sharing of information with the media, first responders, shelters, politicians and frenzied customers. It also involves getting a constant stream of information about flooding, blocked streets, bridges out, traffic and hazardous situations. I would routinely be on the phone madly writing down information from the police or fire departments about the situation on the ground. With the platform that information streams into my GIS to view right now.

What better way to share information about a storm situation than with a map that captures all that data as its happening.

That's what a modern GIS location platform does best. It brings disparate information together to make decisions – decisions that lower costs, gets the lights back on faster and gives people the right information to do their jobs at the earliest possible time.

So the game isn't which district can get the most customer lights on sooner, the game is to get all of the customers lights back the fastest possible way.

Learn more about how the ArcGIS Platform can improve your storm response at [XXXXXXXXXX](#).