

Location Platform Brings Simplicity and Execution

A brilliant electrical engineer approached me at a conference. He asked if we could model a complex control system in electric substations with a Geographic Information System (GIS). I asked him what the problem he was trying to solve. He described several scenarios in which the control system took incorrect action when faced with a failure in the power system. The control system tripped out a larger section of the grid than was necessary. He thought that modeling the control system in GIS could help diagnose and ultimately correct this problem. I told him it was possible, but it would be complicated.

Trying to change the subject, I asked him what was the biggest problem facing his company? He then asked me what I meant. Did I mean from an engineering perspective or something else? I followed up that I was asking in general, taking the electric company as a whole. What your company's biggest problem? He came up with a several things, such as bad data, poor engineering standards, budget cuts and they had a variety of inconsistent operating practices. I continued to press, asking for something more dramatic. He finally asked me, well you don't mean like 60% of our customers don't pay their electric bills? Is that what you meant?

Exactly.

He was trying to solve a very complex technical problem using GIS, when the big problem was people not paying their electric bills. It was a tough problem, but not a complex technical one. A simple mapping of the intensity of this problem could help the company attack this problem in a much more deliberate and systematic way. The company had never done this. This simple use of a location platform could have an order of magnitude more impact on the company than modeling something as complex as a substation control system.

What is a location platform? It is an enterprise IT system that gives every employee and contractor in the company access to authoritative and location information in the form of digital maps at any time on any device.

It is often the simple problems, the non-elegant ones, that are the toughest to solve. In 2009, Esri did a survey called: "Is Your GIS Smart Grid Ready" One of the questions was this: "After the completion of construction/maintenance, how long does it usually take to get the new construction/maintenance information into the GIS?" The majority of responses were between 30 and 90 days. What? Why is that? I'm going to modify this tired old cliché, "If we can put a man on the moon, why can't we move data from the field into the GIS in less than a month?" Why is that so tough? If we can figure out how collect millions of pieces of data from all kinds of sensors in the field to the SCADA systems in real time, why does it so hard to move a few bytes of information from one place to another?

My view is that as an industry we haven't recognized the value of timely access of location data. That's the bad news. The good news is that the technology is in place to solve that problem with today's modern GIS or as we at Esri like to call it, the location platform. Stated simply, a location platform gives every employee and contractor access to authoritative information (assets, paying and nonpaying customers, oil spills, location of trucks, measurements, tweets, you name it) at any time, on any advice from anywhere. It also gives those same employees, contractors and even customers the ability to create and share information too. If utilities built a location platform and we asked that same question

that we did back in 09, the answer would be seconds, not hours, days, weeks, months (and I hate to tell you some utilities told us over a year). Simple. Just getting information to everyone is such a simple solution, but it's been tough and elusive for many companies.

Some utilities have figured it out. See National Grid article in T&D magazine and Fort Hill Video.

The electric utility business is sort of a blend of very high tech processes. Think of Advanced Metering Infrastructure, (AMI), phasor measurement units (PMU), substation automation systems, SCADA, even GIS. And ancient rituals. Some of those rituals are okay, but we need to rethink many of them. That's the tough part.

By applying the concept of a location platform, utilities can kill some of those old rituals and simplify what they do. That just improves execution. Better execution means taking less time to do maintenance. It can be getting people their services faster. Or simply by avoiding confusion (which often results in accidents) to meeting regulations. These aren't complex problems. They are just tough ones.

It's more important today than ever to improve execution, not just in operations, but everywhere in the company. The pressures just keep mounting: tougher access to capital, competition from solar panels, stuff wearing out, and people retiring faster than ever.

So in addition to coming up with new algorithms or some advanced analytics, we can use the location platform to just make things work better. In the process, we make better decisions: decisions about how to collect more money from our customers to reducing theft to improving customer experiences to figuring out where to invest in the infrastructure.

A location platform brings simplicity and better execution.