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Industry Spotlight: Tantalus Systems - Very Smart Metering

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Tantalus Systems is a Canadian smart grid company I've been meaning to write about for some time. The company caught my eye recently with a series of industry awards, especially the one from PowerGrid International magazine, which was presented at Distributech, the industry's leading T&D event. This award was for Tantalus' smart meter deployment with Pulaski Electric System, a Tennessee-based municipal utility.

To get a better perspective on the company's work with PES as well as what they bring to smart grid, I spoke with Tantalus President and CEO Eric Murray. In many ways, PES really showcases their vision, and Murray provided some insight on this. Before continuing, I should note that Tantalus is more than just a smart meter vendor. As with leading telecom vendors, Tantalus provides a solution, not a product. In this case, the solution integrates smart metering with the communications network, focusing on intelligent data that flows two ways in real time.

PES has its own FTTH network, and along with providing consumer-based broadband services, Tantalus helps the utility deploy smart grid applications. This on its own isn't that exciting, but things get more interesting with wireless support. PES uses FTTH for most of its 15,000 subscribers, but for more remote sites, it uses 220 MHz RF to deliver connectivity. By supporting both wireline and wireless on a single platform, Tantalus enables PES to provide smart metering to its full subscriber base.

This is a strong story on its own, but there's more. By setting the foundation across all subscribers, Tantalus is giving PES great flexibility for future applications. In fact, that's already happening. PES's governing body, the Tennessee Valley Authority, has given the go-ahead to participate in a Generation Partners program. This is a distributed generation program, and Tantalus provides the requisite metering and demand response infrastructure to let subscribers sell power back to PES. Not only does this tighten the relationship between PES and its subscribers, but it strengthens the business case and ROI for investing in smart grid.

Murray further explained the benefits on a broader scale. First, for Tantalus, AMI is not just about data collection. In his view, it's more about command and control and event-driven management of real time data. For metering to really help smart grid, the network need to interface with a variety of devices, and be able to respond to a wide range of situations. A power outage requires one type of response, detecting power theft requires another, and consumption of energy during a peak usage time triggers yet a different type of response.

When the network can effectively manage these different situations, smart grid deployments become good investments. Operational costs are reduced because utilities can isolate and troubleshoot problems more

precisely than before. Energy usage can be more accurately tracked, which leads to more accurate billing and forecasting to better manage overall requirements.

With PES, Tantalus demonstrated important capability in two areas. First is deploying smart metering across both wireline and wireless networks, and second is deploying across urban and rural settings. This combination presents many challenges, especially connecting with a wide variety of devices in disparate locations. Most AMI deployments are only with wireline networks, and it stands to reason that if Tantalus can be this effective with PES, they should be able to have success with most any utility environment, especially those in larger urban markets.

It's also worth noting that connectivity diversity extends to HANs, with support for the leading operating standards such as Zigbee or Z Wave. This is another important smart grid differentiator because it allows utilities to extend new applications into the home without concerns about compatibility issues that might give rise to data loss or security breaches.

Finally, Tantalus allows utilities to migrate from various WAN platforms, which is especially important where wireless options are still being evaluated. Most utilities are undecided about which technology to embrace, whether it be WiFi, WiMAX (News - Alert) or 4G. They all have pros and cons and in terms of future planning, many utilities are still in wait-and-see mode. There are important capital decisions at stake here, and Tantalus provides a lot of flexibility.

The company's wireless WAN is based on 220 MHz, which provides broad coverage at a reasonable cost. This can be more economical than partnering with a telco to use their public network, plus the utility has more control to ensure uptime as well as security. Not only does Tantalus allow utilities to migrate to and from either type of network scenario, but the company can also use both at once to mix and match according to the varying needs of subscribers. Again, this flexibility across wireless and wireline options gives utilities the best of all worlds when planning future network build-outs to support smart grid deployments.

Tantalus is just one of many vendors addressing these challenges, but given its string of recent accolades, the company is clearly doing many things right. I've always felt that there's much more to smart grid than AMI, and maybe that's why I find Tantalus so interesting. We're hoping they can join us in Los Angeles for the next Smart Grid Summit, and if they do, you'll have a chance to learn first-hand what makes them a leading example in this space.

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