Impact of smart meters on IT infrastructure

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Advanced Metering Infrastructure (AMI) is all set to replace traditional electric meters with new smart meters for residential and small business consumers. That means anyone who consumes less than 200KW is about to have access to a variety of pricing plans, real time information on usage patterns and better control of consumption in general.

The consumer angle of this story has been covered extensively. But the impact on utility companies and more importantly what it will mean in terms of technology is sort of a gray area at the moment. While the actual process of implementing and integrating these meters unfolds, companies need to think ahead to how this will impact their IT requirements in the near future.

Let's start by looking at your Operation Center. This will function as your single point for all integrated support of operations and meter data management. Your IT team will need to be able to monitor this 24x7. In terms of support we are talking about Level 1 and Level 2 support round the clock every single day of the year. System stability will be crucial as any sort of downtime will cause major disruptions. Get ready to live and breathe by uptime reports.

The Network Management Center is going to come under intense scrutiny to ensure viability of communication among digital meters, communication networks (RF LAN, WAN) and management of remote capabilities at home (HAN) including meter reads. IT teams will need to ensure that devices are always connected to the communications network as they won't be able to manage much otherwise.

Having your systems properly connected and up and running round the clock is going to be a major challenge. But what's going to make things even more interesting, is that for the first time consumers are going to actually be able to tell when your back-end goes down. How is that possible? Well that's where your consumer portal comes in. Customers will have real-time access and control of devices within their homes such as smart thermostats, appliances and solar panels. Expectations of what they will see on a portal will be very different from today. More importantly, customers are going to be logging in more often and not just when they have to pay a bill or check on the status of a service request. Portals will have to be more user friendly and be able to support a multitude of devices from smartphones to tablets or computers using a number of different browsers.

So what does this mean for your more traditional customer support systems? Service levels will remain the same, but the AMI will continue to build on your system's capabilities. Expect to add more functions such as remote disconnection and activation, summer peak discounts, dynamic pricing based on time of day etc. Demand for these services will grow based on customer preferences and the need for operational efficiency.

All this activity is going to generate huge volumes of data. It will no longer be viable to have separate systems for Enterprise Resource Planning, Enterprise Asset Management and Customer Relationship Management. Integration is the key and this means having a plan that covers legacy modernization, master data management, system integration and business intelligence and data warehousing on a level never seen before. Companies will eventually need to build a technology platform for 'actionable' business analytics and data intelligence that supports both historical and real-time analysis.

AMI is going to enable consumers make smarter choices on energy consumption. But to succeed, it will need utility companies to make some very drastic technology decisions. ■

About the author

Harsha Bhat leads Collabera's Utility domain and is responsible for developing solutions, effective customer engagement in utility sector for Collabera. He has more than 15 years of experience in developing business strategy, IT strategy and consulting, technology and software development working with large companies across US and UK. Harsha has a Bachelor of Engineering degree in Computer Science and is an MBA from London Business School.