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OMNETRIC

A Siemens Company

Developing and delivering software solutions and services resulting in industry-leading data intelligence

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Utility
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Special report

YOUR 2018 RESOLUTIONS FOR IOT

It's the same for many of us. Early January is a time when we consider our goals and how we might achieve them. According to industry analysts IDC Energy Insights, digital transformation is a goal that many utilities around the world are pursuing. The analyst firm predicts worldwide spending on digital transformation technology will expand at a CAGR of 17.9% through 2021 to more than US\$21 trillion. Already in 2017, the Internet of Things (IoT) has been the focus of much discussion about digital transformation in utilities. For many, it encompasses data, analytics, AI and cloud, rolled into a concept with the potential to bring to life a truly intelligent energy system.

What might be utilities' five resolutions for 2018 on the voyage towards destination digital? In this, Metering and Smart Energy International's IoT special edition, we challenge you to prioritise and deliver what's needed to evolve towards a business-relevant and successful IoT.

1. Be increasingly open for business

At OMNETRIC we advocate a more "open" operating environment for utilities: open ecosystems that enable the digitalisation of processes from end to end; open collaboration where expertise and data

IoT applications are rapidly developing with new uses and benefits being discovered and created.

can be pooled for a richer outcome – open architectures that enable intelligence at the edge of the grid, as well as the ability to multiply the number of devices added and the quantity of data exchanged.

Smart grid networks are now being built using open, globally recognised IP standards: in contrast to early proprietary networks that ended up with isolated, stranded assets. Open systems and greater interoperability present a tremendous opportunity to go beyond the capabilities of the present installed base, boosting performance, lowering integration costs and improving risk mitigation. In order to realise the technical and economic advantage offered by such open architectures, the industry needs to adopt an IoT operating system that reflects this philosophy.

2. Stop thinking it won't happen to you

Openness is progress, but it brings its risks. Placing essential equipment and assets under lock and key used to provide adequate protection. Digitalisation brings unprecedented connectivity between the grid and other systems but disperses influence and control and increases risk.

According to a recent Accenture study, distribution utilities confirm that they see the energy system increasingly exposed with 77% of utility executives suggesting IoT as a potential threat to cybersecurity.² Nonetheless, as we move towards an IoT future, cybersecurity still remains hard to prioritise.

In 2018, we need to change mindsets, so that security programs are seen as a "value-add", and not just an insurance policy. Utility cybersecurity strategies need to be holistic and defined by practitioners with an understanding of security and experience of the specificities of critical utility infrastructure and services. This work should also be done with informed, senior leaders who have visibility of the complete business picture and are able to balance digitalisation benefits with potential risks. These

executives also need to assure the potential mobilisation and focus of the right people in times of crisis. Jeremy Meara, Smart Metering Compliance Manager at UK DNO Northern Powergrid, said on the topic at European Utility Week: "Cybersecurity requirements are clearly best addressed while solutions are architected, rather than later when the solution is in operation. If security is not integral to the solution from the outset, the remedial efforts to manage a security breach at a technology, people and process level, are going to be less effective."

3. Remember content is king

While the word "internet" has a distinctly last century ring to it, the word "things" sounds pedestrian, even dumb. As such, perhaps we could argue that IoT does little to convey the power behind connecting any object with some intelligence and an IP address to any other object over the communications network. And yet, when domain knowledge of the connected grid assets is applied – be those power grid assets, electrification assets or grid edge devices – it is here that the magic begins.

In order to devise and successfully deploy powerful energy applications, the most significant challenge is not technological, but human, and is about getting your operations and IT teams speaking the same language. Bridging the two worlds requires cooperation across the culturally diverse domains of engineering, data, IT consulting and security. The need for such cross-cultural collaboration prompted Siemens and Accenture to create OMNETRIC, and specifically combine diverse talent and IP under one roof. With our roots in OT, we approach integration from a different angle to the majority of systems integrators, who come from the IT world: we understand how to generate and interrogate the data, but we have the operations expertise to interpret what the data means and how to feed that back into the solution.

In October, 2017, OMNETRIC announced its partnership with KELAG, a leading energy service provider in Austria. Together, we have developed the first application for grid operators running on MindSphere – Siemens' cloud-based, open IoT operating system. OMNETRIC Planning and Outage Intelligence App helps utilities use data insight to improve reliability and efficiency of the electricity grid. Development required the close collaboration of data scientists, electrical engineers and IT experts to identify the measures required to develop different outage prediction statistical models for KELAG with a 90% accuracy rate. Today the value of that operations insight is baked into a commercial application that can be leveraged by others.

4. Collaborate as part of the new IoT model

If everything is connected and more open, there is far greater potential to exchange, as the KELAG example above demonstrates. While the industry has traditionally been conservative about such activities, some are embracing the opportunities as a means of building experience in a step-by-step fashion with IoT, data analytics and distributed intelligence. Heinz Sitter, Managing Director IT & Telecommunications at KELAG Group, said: "Accessing applications built on Siemens' MindSphere enables us to benefit from global cloud developments while still deploying applications on-premise in our own data center. This allows us to meet the precise needs of a distribution company today, as well as better manage systems integration and security considerations".

Also, collaboration with other entities in your ecosystem, such as smart cities, will enable data to be gathered and analysed end-to-end across processes. You can proactively help city decision-makers leverage their existing network infrastructure to modernise aging city assets. This could include services such as electric vehicle chargers or smart street lights. Every city has challenges that can be solved by working in partnership with its utility; and by opening these platforms to other enterprises, innovation will expand this value even further. OMNETRIC, with Siemens, announced in October 2017 that we are helping Consolidated Edison, Inc. begin smart meter operations in New York. By automatically querying the smart meters every 15 minutes to retrieve consumption data, the utility is prepared for billing its power and gas customers. Additionally, the Siemens EnergyIP platform uses complex data analyses and sophisticated algorithms to provide data to the energy market in real-time to optimise the integration and regulation of renewable energy sources. As such Consolidated Edison's smart grid project also supports New York's REV strategy. The goal is to reorient the city's power supply industry to increase grid efficiency, minimise the power supply system's susceptibility to environmental disasters, and improve its CO₂ footprint.

5. Don't get lost in the data

For some time, utilities hesitated to get going with data analytics because they believed they did not have enough data or that the data integration was too time intensive. With recent reports giving forecasts of more than 12 billion smart devices connected to IoT networks over the next decade, utilities could be forgiven the fear of now drowning in data. Utilities should not lose themselves in their big data. What's important is starting small and scaling, constantly reviewing results for patterns and correlations with a

OMNETRIC PARTNERING WITH SIEMENS AROUND MINDSPHERE

MindSphere is Siemens' cloud-based, open IoT operating system that connects machines and physical infrastructure to the digital world, and enables powerful industry applications and digital services to drive business success.

MindSphere's open Platform as a Service (PaaS) enables a rich partner ecosystem, managed by Siemens, to develop and deliver new applications. OMNETRIC is a Siemens joint venture dedicated to helping energy providers reap the benefits of the digital energy system by integrating their energy operations with IT to support their business goals.

MindSphere offers a foundation from which to innovate, enabling OMNETRIC to deliver an integrated view of data, systems and operations, real time. Energy providers benefit from an IoT operating system from Siemens, a leading industrial technology provider, which offers open interfaces and secure communications, as well as a clear roadmap for success in an increasingly connected world without the complexity of building own infrastructure or managing complex software stacks.

Visit OMNETRIC at the Siemens booth at DistribuTECH 2018.

Learn more about MindSphere: www.omnetric.com/mindsphere

view to narrowing in on what's of interest. At OMNETRIC, we call it value-verification. For example, for wind power forecasting, our data scientists have worked with utilities to assess the results of multiple forecasting tools – from four to forty – in order to determine their accuracy over short- or long-term horizons, and/or according to different scenarios, such as high-wind conditions. This approach results in a smarter combination and higher accuracy. It is no longer about data processing, but rather about understanding data. Moreover, over time, by continuing to apply analytics techniques, the outcome is tweaked to deliver still better results.

A resolution to start

Following the proliferation of the internet, mobile networks and automation with Industry 4.0, the IoT took the stage around 2010. Eight years on, as an industry we have yet to make serious progress on the promise of IoT. And yet technology breakthroughs – in storage or DER generation – could compel operators to build a next generation to cater to a new energy landscape, in years rather than the decades previously required. The uptake of IoT-driven solutions can help ensure that utilities are better equipped to manage such transformation. ■■

¹ IDC FutureScape: Worldwide Utilities 2018 Predictions, October 2017, IDC #EMEA41791517

² "Outsmarting Grid Security Threats", part of Accenture Digitally Enabled Grid Research, 2017



ABOUT THE AUTHORS

Franz Winterauer is vice president at OMNETRIC and expert in big data in the smart grid space. Since 2014 Franz has been Head of Energy Insight for Europe, Middle East and Africa (EMEA) and Asia Pacific (APAC).

Edward Benning is vice president also, leading OMNETRIC's Smart Grid Integration and Security team.



ABOUT OMNETRIC

OMNETRIC is dedicated to helping energy providers reap the benefits of the digital energy system by integrating their energy operations with IT to support their business goals. Helping customers since 2014, we are an inventive, technology services company.

For more, visit www.omnetric.com