

Consumers at the centre of Smart Grid networks



Engaging the consumer is key to the success of the Smart Grid journey

The proliferation of micro generation, smart metering and the first signs of electric vehicles provide the power retailer with an opportunity to place the consumer at the centre of their activities.

The move towards Smart Grids will expose the power industry to an environment of rapid change within its start-up Information Communication Technology (ICT) infrastructure. This will have far reaching consequences for the power retailers and their regulators.

To exploit ICT to its fullest, the power industry will need to adopt a different approach to ICT technology, one in which the ICT component is deployed and refreshed at a much greater frequency than they are familiar with in their grid components today. The peripheral role of the consumer will change as they are expected to play a greater and more central role as part of the Smart Grid ecosystem, this will have far reaching consequences for the power retailers.

Telecommunication vs power industry

One real example of the differing approaches taken by the two industries can be illustrated by the adoption of software patches. The telecommunication industry readily adopts the latest patch levels to ensure their systems are at the latest build level, free of bugs and continue to be fully supported by the various software suppliers.

In contrast the utility industry is careful in accepting patches, as the unknown implications on safety and the sometimes extensive costs associated with any safety critical regression testing which may be necessary are cited as barriers and leads to longer term support issues.

Despite their differing approaches, one commonality between the two industries are the respective end customers. The "consumer" or the "subscriber" have very high expectations and have been accustomed to the light always switching on when they need it and hearing dial tone when they pick the telephone up to make a call. Indeed achieving this level of expectation during times of change can not be left to chance and is paramount in any evolutionary process.

Employing consumer centric applications

With the use of appropriate ICT technology, already deployed in the telecommunication industry, the consumer can now be engaged much more frequently than the usual billing period, across a range of user centric devices.

Using market forces afforded by real-time tariffing and rating control, financial incentives can be used to modify consumer consumption behaviour during peak periods. This provides a motivating tool for the power retailer to start engaging their consumers and forge a more productive partnership for both parties.

The power industry must also prepare for the mass arrival of electric vehicles, not only in terms of the electrical load these will place on the generation and distribution network, but in the financial charging infrastructure required to support their use.

Think about the usual refuelling scenario today with your car. Market forces allow you to purchase fuel at different service stations at differing prices that fluctuate hourly, how will this be supported for electricity? How can I drive my car to a charge point and have the cost of that charge charged to

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my electrical account? Consumers would also like to see this transaction reconciled immediately in their account in a transparent manner.

Additionally for micro generation, market forces will determine the price for contributed energy based on time-of-day / day-of-week tariffs.

Power retailers must also prepare for a complete overhaul of their billing infrastructure on the scale as seen in the telecommunication industry today.

Engaging the consumer is key to the success of the Smart Grid journey. The consumer is probably the single most important entity, as their support is of paramount importance for its success.

The telecommunication industry has gained significant experience in business transformation, managing obsolescence, change and subsequent migrations. Be it by technical design, advanced migration methodology or by ensuring the communication standards utilised within the industry facilitate this change. This approach has allowed the industry to:

- Ensure interoperability and compatibility between different manufactures and communication networks
- Manage migration to reliable, unified and future-proof infrastructure
- Deal with change in mission critical systems with zero customer impacts
- Deliver, deploy and refresh ICT type systems relatively quickly, therefore realising the benefit of the new technology to the maximum

There is no short cut in acquiring this valuable experience. One has to go through it, learn where appropriate and move on.

Placing the customer at the centre of the network as seen in the telecommunication industry requires a whole host of:

- Consumer centric applications
- Billing infrastructure transformation projects
- Enhanced customer management skills

This engages them in the Smart Grid journey, and makes the Smart Grid work for them. These steps then lead to success.

In the move towards Smart Grids, the transmission and distribution industry communication networks will be very similar to the telecommunication networks we see today. They have the potential to suffer from the effects of change, something which the telecommunication industry has already embraced. It is within this context that Alcatel-Lucent can bring value to the power industry and support them in their quest to move towards Smart Grids in the next 10 years. With its decades of history in building the world's telecommunication networks and engineering operational communications networks for the power industry, Alcatel-Lucent is sure to get the job done.

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