

Beyond the meter: Six questions that will determine whether Smart Grids create any value for customers

Background

In October 2009 the Federal Government will seek bids for an electricity 'Smart Grid' demonstration project. The objective is to find a Smart Grid framework that can be replicated nationally, to the end of achieving widespread societal benefits such as greenhouse gas reduction.

Smart Grids essentially involve pairing traditional network assets with new communication and information technologies. The promise of Smart Grids is that they will generate benefits for customers, for network businesses and society, paving the way for widespread distributed generation, increased consumer participation and eventually for uptake of plug-in electric vehicles and other leading-edge energy technologies.

For all the discussion they have generated, Smart Grids are still only an idea. The most tangible part of the Smart Grid picture to date is the Advanced Metering Infrastructure (AMI) that will be rolled out in Victoria from September 2009. While, as the Victorian AMI business case indicated, there are significant benefits for network businesses in AMI deployment (and by extension, probably will be with Smart Grids), we contend that the dimensions of Smart Grids with the potential to be truly revolutionary lie with the customer, and in particular in the management of devices downstream of the meter. Whether that potential is met will depend on the model chosen for Smart Grid deployment, and a number of factors in particular.

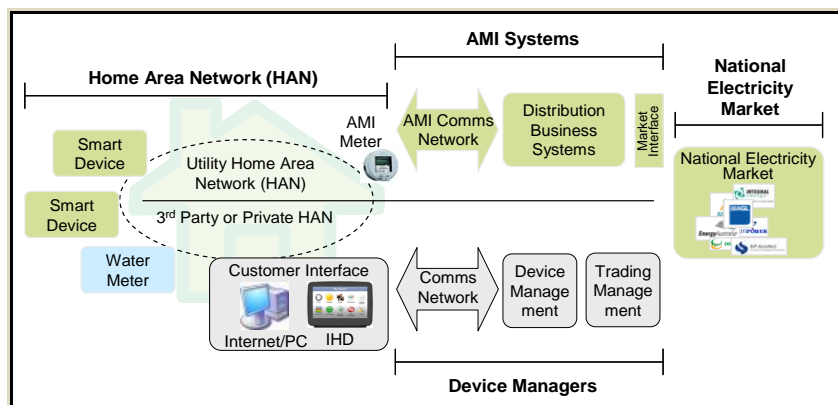


Figure 1: Conceptual View of Smart Device Management

1. Access to data

Customer interval consumption (and potentially generation) data is the single most significant informational addition that stands to be provided by the Smart Grid but in and of itself the data provides no value – it must be used for something. Clearly this information is useful to (and will be available to) network planners and incumbent retailers, but the group that really needs access to it – and the right to assign it – is customers. Without the ability for customers to examine their own data and to direct it to parties that may be able to use it to offer products and services, innovation will be stifled.
2. Access to infrastructure

Actual delivery of services is hard to conceive of without service providers having a means to control smart devices within the home. The smart grid communications infrastructure itself does not necessarily need to provide the communications layer, but the framework for technical regulation should allow flexibility as to who can manage devices downstream of the meter.
3. Whether standards exist that allow for interoperability

To be meaningfully integrated, the ‘smart’ devices that sit downstream of the meter must be able to speak to each other or to a central hub. A single standard messaging protocol will hugely simplify the task for vendors of smart devices to bring them to market. The protocol must be broad, flexible and preferably extensible however, as it may eventually need to handle devices and applications that have yet to be conceived.
4. Whether customer participation reflects customer choice

There need to be meaningful mechanisms for customers to participate at a time and in a way that makes sense to them. Not all customers care enough or have enough at stake to invest the time to understand the opportunities presented by the Smart Grid. Just as in any other market the onus will be on businesses to offer value propositions that customers willingly take up. Compelling participation will not create value for customers and imposes costs on everyone.
5. Who is allowed to manage the operation of smart devices, and to what end

Consumer participation in the markets for energy and network support services (based on distributed micro-generation and demand response, for example) will in most cases need to be managed by third parties, both in terms of aggregation for dispatch and real-time device management. Space should be made for new-entrant aggregators – it should not be pre-supposed that existing industry players will be the most efficient, or will even have an incentive, to offer these services.

6. The role the
Government chooses
to play

Governments have a patchy history of encouraging innovation and creating value at the leading edges of technology. There is a clear imperative for Federal and State Governments to remove barriers to innovative product and service offerings based around the Smart Grid idea and to provide the regulatory standards for safe operation, but how much more they should do is contentious. Knowing where to set standards, and where to allow them to emerge, is a key policy challenge.

Marchment Hill Consulting has offices in three locations which serve Australia and New Zealand, Asia and the Middle East.

Melbourne

Level 4
530 Lonsdale Street
Melbourne Vic 3000, Australia
Phone: +61 3 9602 5604
Fax: +61 3 9642 5626

Brisbane

Level 24, AMP Place
10 Eagle Street
Brisbane Qld 4000, Australia
Phone: +61 7 3303 0264
Fax: +61 7 3303 8445

Hong Kong

Level 39
One Exchange Square
Central Hong Kong
Phone: +85 2 3101 7948
Fax: +85 2 3101 7949

marchmenthill.com