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Towards a customer centric network business - lessons from international markets

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There is a growing consensus in the energy sector that network service providers (NSPs) need to become more customer centric. Customers have undoubtedly imposed this realisation on the industry through their uptake of distributed technologies which are interacting with the established supply infrastructure in ways which present both risks and opportunities for NSPs.

But how do network service providers become more customer centric and what, if anything, can we learn from international marketplaces about this challenge?

We look at this challenge across three areas and, for each area, draw on examples from overseas markets. These areas include the NSP's:

1. Technical relationship with customers
2. Commercial relationship with customers, and their
3. Regulatory relationship with customers.

1. Technical relationship with customers

The technical relationship between the networks and the customer covers off much of the direct interaction. It covers things like:

- Where a customer is directly impacted by system security, reliability and safety
- Where customers rely on network service providers to repair damage to the network
- When a customer requires a new grid connection for a new generator (be that large or small scale), a new development or major load.

On the first two points, Australian network service providers generally provide high service-levels for customers - our networks are typically highly reliable, secure and safe with field crews working promptly and effectively to restore power in instances of unplanned outages.

On the last point, some of MHC's recent market analysis work revealed issues including:

- Timeframe delays, excessive costs and poor service levels associated with connecting large-scale generators (generally wind farms) to the transmission network.
- Unnecessary bureaucracy, cost and delay in processing applications for small-scale connections of battery storage. This was mainly because networks were treating the solar and storage unit as an embedded generator with total capacity as the sum of the

solar and storage unit (even though they would not be used in this way) which extends the processing time for their applications unnecessarily.

International perspectives

One example of improving the connection process for larger generators is UK Power Network's Flexible Plug-and-play project, a 3-year project partially funded by Ofgem's Low Carbon Networks Fund, which trialled new innovative ways to offer customers discounted and faster connections to constrained sections of the distribution network.

The customer in turn must agree to having its generation interrupted at the discretion of the NSP in the event of the network being constrained. According to UK Power, these customers saved more than 70% on their connection cost.

UK Power stressed the importance of customer engagement in getting customers to sign up, both in terms of explaining and selling the concept and an ongoing relationship to manage the curtailment and related customer interaction.

We also recognise that Ausgrid have recently announced a fast track process for solar and storage installs less than 30kW, saving customers \$200 on their applications - a great example of a more customer centric approach⁽¹⁾.

2. Commercial Relationship with customers

The current commercial relationship NSPs have with customers could be described as somewhat strained.

One side-effect of good technical relationship with respect to reliability, safety and security has been the significant increase in network costs across most jurisdictions in the last decade. This has not only lead to some backlash from the regulator, but it has also in part contributed to the rapid uptake of solar PV, greater energy efficiency and the emergence of alternative technologies including storage and controllable loads as customers try to regain some control over their costs.

But these distributed energy resources also have the potential to provide additional services to the network, including ancillary services and demand response so there may be a win-win that customers and networks could achieve. But there are problems in extracting that value for the benefit of the network and the customer. These problems include:

- The ability to calculate the value, given that it varies by time and location, and
- The ability to signal that value to customers, given that the networks in Australia don't have a direct commercial relationship with customers.

Additionally, if network service providers were to try enter contestable markets for distributed energy products, they need to establish a ring-fenced entity. This entity would essentially start from a customer base of zero, and compete with established players with millions of retail customers, and nimble start-ups with none of the organisational and cultural baggage of a regulated monopoly.

And what would they be up against? Below is a sample of some of the emerging customer centric electricity business models emerging from international markets.

⁽¹⁾ <http://reneweconomy.com.au/2016/ausgrid-to-fast-track-household-solar-and-battery-installs-cut-costs-by-200-200>

International perspectives

Sonnen Community
(www.sonnenbatterie.de)



A German battery storage manufacturer which has sold over 10,000 storage units to happy customers across Europe, and now offers P2P energy trading for these customers so they can buy and sell energy between each other, cutting out the traditional retailer entirely.

Lichtblick
(www.lichtblick.de)



Germany's largest independent green retailer which has also developed software that connects, analyses and optimises generation, storage and demand to create a solution for customers to aggregate and act as virtual power plants.

Transactive Grid
(www.transactivegrid.net)



A joint venture by LO3 Energy and Consensys to facilitate transactive energy using blockchain technology. The technology has been trialled on the Brooklyn Microgrid in cooperation with the local network provider (ConEdison).

PowerPeers
(www.powerpeers.nl)



A new peer-to-peer energy marketplace and community in the Netherlands set up by utility giant Vattenfall. This service allows customers to buy and sell their electricity from the generators and consumers of their choice; from their family members and neighbours to the local sports club or wind farm.

We believe that Australian NSPs are not well placed to compete toe-to-toe with these sort of business models, in an effort to be more customer centric.

The cultural and capability gap is just too big. Not to mention the regulatory barriers, ring fencing complications and implications for shareholder risk profiles.

What NSPs are well placed to do, is to **enable** and **support** these business models to exist and thrive by working with them and using them as customer facing channels.

By offering price signals and a physical trading platform (i.e. the network) they can stimulate a transactive market place where the full value of these distributed energy resources can be extracted by customers - so their battery storage unit:

- Is cheaper (as it can access network support payments)
- Is easier to connect
- Can be used to trade energy with their neighbour, and
- Contribute to a more reliable, secure and affordable network for all.

That's a happy customer.

So, if being a neutral enabler of these innovations is what a customer centric commercial relationship for networks might be, will it just happen in Australia? We doubt it.

- How can we expect network service providers to take on the role of animating or managing a distributed energy system when there are no rules or regulations to govern how the market might operate?

- Why would a network service provider fully embrace the value of distributed energy resources and demand response technologies and markets to reduce network capital expenditure when it can get better returns on capex than opex?

The reality is that without comprehensive regulatory reforms, truly customer centric network service providers will not just emerge from the fog. NSPs are rules-based organisations. They need business model rules and incentives which align with the customer's new choices - across the full spectrum of customer segments.

Which brings us to our third relationship - the regulatory relationship with customers.

3. Regulatory relationships with customers

The National Electricity Objective is firmly geared towards the long-term interests of customers, but the rules and regulations driving the revenue model for network service providers may not necessarily be aligned with the emerging needs of customers. We can again turn our attention to international markets for some guidance.

International perspectives

Dealing with the CAPEX/OPEX value trade off

In the UK, ofgem's RIIO reforms has introduced the concept of TOTEX, where CAPEX and long-term OPEX contracts are treated equally as "slow money". They also have direct incentives based on customer satisfaction and stakeholder engagement.

A more explicit alignment between network incentives and customer value

New York is currently undergoing significant reforms to its regulatory framework through the Reforming the Energy Vision (REV) program. Under this program, one of the foundational principles for reforms is to align earning opportunities to customer value.

Specifically, the REV's utility business model reforms work to transition from a traditional cost-recovery mechanism to one which includes:

- Earnings Adjustment Mechanisms, which links the utilities' rate-of-return to certain performance metrics, e.g. peak reduction, energy efficiency, customer engagement and information access, affordability and distributed energy resource interconnection. So in effect, the utilities rate of return increases the increase in the amount of distributed energy resources connected to the network.
- Platform Service Revenues, which include regulated transaction-based revenues generated by the utility from operating the Distributed System Platform. So, for example, the more transactions that occur over the network (e.g. peer-to-peer trades between happy customers), the more money the utility may make.

These reforms are intended to balance the reduction in the utilities traditional revenue sources (through the augmentation of the network) with appropriate incentives and earning opportunities to access additional sources of revenue to not only make up the difference, but also provide potential for growth depending on their success at supporting customers to engage in the energy platform.

It further clearly defines the role of the network service provider in the future energy ecosystem, and provides clear commercial incentives to better align the drivers of customers and networks.

It is important to acknowledge that these reforms flow directly from ambitious emissions reduction targets set by the State of New York and the recognition that energy policy must be directly aligned with climate policy - another interesting lesson for Australia.

There is a lot that Australian network service providers can learn from developments in international markets, but there is only so much they can or will do about it without some fundamental regulatory change to properly align their business models and incentives to the changing needs of the customer.