Looking for high margins on the grid's edge—Perry Sioshansi's Letter from America

The universal pattern in other businesses is hard to apply in electricity.

The fancy French bakery on the street corner enjoys exceptionally high margins for every loaf of bread sold; we are talking about the retail price of the loaf relative to what was paid for the ingredients. In other words, the farmer that grows the wheat makes very little. The same principle applies to the gourmet coffee shop where the margins for frothy lattes are excessively high; the coffee grower is poor.

Likewise, the online enterprise that processes flower orders on Valentine's Day keeps roughly a third of the money; the local flower shop that arranges and delivers the roses barely covers costs; the flower growers in Colombia or Kenya get next to nothing for all the hard labour.

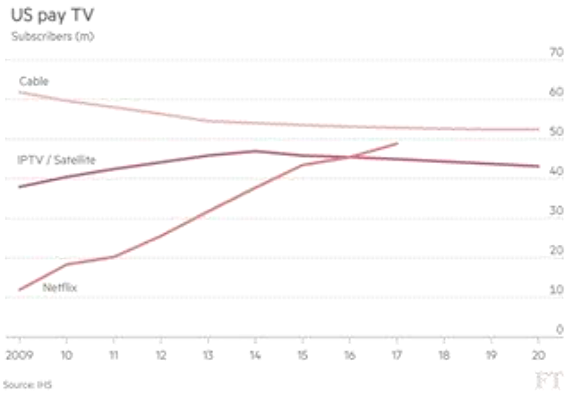
The same is true of many businesses. The margins are typically high at the last leg of the value chain—and in the age of the Internet—this translates to where orders are received, data is collected and processed and ultimately where money is exchanged from the customer's valet or increasingly credit card to the party that culminates the transaction. Everyone upstream of the final point of transaction is left with thankless chores and razor thin margins, if that.

What does that have to do with electricity, you might ask? That is precisely what lots of smart entrepreneurs are trying to answer. How can a similar business model be applied to electricity retailing? Can a portal or platform attract and process orders from countless customers keeping a decent margin before passing on the thankless chores to others upstream or downstream, as the case may be?

Many who are thinking about such matters are convinced that electricity business is gradually evolving from one where customers historically bought lots of undifferentiated kWhrs from their monopoly distribution company and paid for it volumetrically at regulated tariffs.

The future may be one where individuals buy a customised package of services, including a set fee for being connected to the grid plus a charge for certain amount of network capacity, a number of monthly kWhrs, perhaps from renewable and/or locally produced sources, combined with a bundled set of services that includes the usual suspects: reliability, storage, back-up, balancing, energy management, demand response and possibly other customized services.

Netflix's gain is someone else's loss



Source: FT

Other businesses, Netflix, mobile phones, cable and satellite TV, for example, offer different bundled packages of services with different prices, allowing customers to select combinations of features that best meet their needs and their budget as described in the following article. While an imperfect analogy with electricity business, there are useful lessons to learn as customer habits and preferences change with the arrival of new technologies and new means of service delivery.

Examining the plight of old fashioned TV networks (*see graph above*), who are gradually losing their historic customer base, strategists in the power business have decided that future customers want better control of their energy use and consumption pattern, more efficient use of energy, better management of how and when it is used – and for some – a more proactive role in all these areas.

And since they are used to ordering and managing their bank account, credit cards and everything else online, they expect to be able to interface with their energy company the same way—remotely, electronically, seamlessly and effortlessly.

Moreover, as options to self-generate and store energy become more common—it is called prosumage—many customers may wish to transact with other customers, neighbours across the street or across the city or country. Since all customers are already connected to the same network, the grid, the concept of transactive energy has gained some traction.

How will such ideas materialize and how practical or profitable they may be is the subject of intense speculation. The trade press is full of buzzwords including digital utility. Grid's edge—whatever that entails—is also attracting increased attention as are concepts such as the Internet of things (IOT).

As reported in the March 2016 issue of *EEnergy Informer*, there are start-ups who offer platforms allowing peer-to-peer transactions to take place in a limited number of narrow niches. For example, an apartment dweller in city centre may transact with another in a suburb who has a big sunny roof.

Companies such as Yeloha in Boston and Local Volts in Sydney, Australia allow the latter, the "solar host," to transact with the former, the "recipient" whereby some of the juice generated on the roof is virtually transferred to the apartment dweller. The intermediary will bring the parties together while taking care of the legwork – installing and maintaining solar panels—and the paperwork—which includes complicated adjustments in electric bills of both parties, taking advantage of prevailing net energy metering laws, solar investment tax credits, and other details.

Both parties, in theory, will enjoy modest bill savings without investing or raising a finger, aside from a few clicks on the platform maintained by the intermediary. Among the many unresolved issues is the fact that electrons generated on the solar host's roof do not follow the contract path between the generator and buyer.

They are injected into the distribution network and get mixed up with all other electrons following laws of physics. If too many customers sign up, the distribution network will be stretched beyond its designed capability—originally to deliver juice one-way to customers, not the other way around.

Will such schemes work? Probably. Will many customers be interested? Probably not. Will the intermediaries be hugely profitable? Probably not. Will many start-ups attempt to make a go of such opportunities? Probably. Will venture capitalists support them? Some already have.

The key point is that the industry is undergoing dramatic changes and no one can say for sure who will be the ultimate winners and losers—perhaps until it is too late. Two things, however, appear likely:

- first, the distribution network offers connectivity, reliability and balancing of distributed generation and load – critical services that are currently under-appreciated and provided essentially for free to anyone connected to the grid. That will change; and
- second, utilities are belatedly waking up to confront the reality that their traditional customer base and "sloppy" business model, in the words of Buffet, are ill suited for a future where new technologies offers customers new choices and new bargaining power they never had.

Perry Sioshansi is a specialist in electricity sector restructuring. He is founder and president of Menlo Energy Economics and is the editor and publisher of *EEnergy Informer*, from which we have sourced this article, and which we commend.

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