An Irreverent Take on Customer Research in Our Industry

PRESENTED TO

EPRI Workshop: *Understanding Customer Preferences for and Adoption of New Services and Technology*

PRESENTED BY

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What role has the customer played in utility strategy?

The industry has always been dominated by an engineering mindset, focusing on generation, transmission and distribution

- The customer has been at various times called a load, a meter, and a ratepayer
- Would any retail business survive if they had such a mindset toward their primary revenue producing asset?

Thus, customer research has been underfunded, often carried out in a desultory manner and relegated to a secondary role

Activities inside the customer's premises have been unglamorously dubbed "behind-the meter"

- Imagine Nordstrom saying what the customer does with their fashionable merchandise is "beyond-the-cash register"

Customers are beginning to meet their own needs

This has caught us off guard; in our panic, we have begun to wonder if "distributed generation" may spell doom and gloom for the industry

- We have begun to worry about developments at the "distribution edge"

The self-generation phenomenon has been around for a long time in other industries and it should not have surprised us

- The futurist Alvin Toffler coined the term *prosumers* back in 1980 in his book, *The Third Wave*

In our own industry, co-generation or combined heat and power (CHP) has been around for almost a century among large customers

We have finally realized that we have to change the pricing of electricity

But we don't know whether customers (and thus the regulators) will accept the new methods of pricing

We also don't know how to speak in a language the customers will understand

- Which is ironic since all of us are customers as well in our private lives

We thrust products (and services) on customers without knowing whether they want them or not

- Energy efficiency, demand response, time-varying rates …

We don't understand customers unmet needs or competitors' offerings

We are very slow in tracking the changing needs of customers

We miss out on the ways in which customer research can be used to develop business strategy

Change is happening at lightening speed inside our customers' homes, businesses and factories

- The change is not just in the energy-using hardware inside their homes, such as digital appliances, Wi-Fi thermostats and home energy controllers, or whether they put PV panels on their roofs, or in what car they park on their driveway
- It is equally present in customer attitudes toward the consumption of energy

  – The millennials are very green and organic in every aspect of their life

It is instructive to study how our competitors talk to our customers

Instead of calling it time-of-use pricing, one retailer in Texas calls it "free nights and weekends," Uber calls it surge pricing, and some others call it Matinee pricing

A company in Great Britain shows a toaster popping out a toast with a chunk missing, a man's face, and a sign that says: "Take a bite out of your electricity bill"

One solar company entices customers by saying: "Are you still paying for electricity?"

- Another one makes the following pitch: "Ahmad: What do you have to lose? You put no money down and lock in a simple bill that will forever be lower than your utility bill."

We should rethink how we use the standard tools of market research

Focus groups, customer interviews and pilots are very useful in determining customer satisfaction with current service offerings, identifying unmet needs, germinating new ideas, and road testing them through pilots

But there is a danger that we will succumb to *researchitis* and keep on piloting or over-engineering the product

Steve Jobs famously told the Wall Street Journal that he rarely used focus groups to design his products

“Learning by doing” is as important as learning by studying

Begin deploying discrete choice modeling

This technique was made popular by Dan McFadden and applied to forecast appliance choices by the CEC in 1976

It was used in the early 1980s by EPRI to forecast the demand for electric vehicles

- Car owners would suffer from range anxiety and EVs would be bought as third cars

Discrete choice models can answer a number of other questions

- Which rate design will garner the largest market share?
- How many households will install rooftop solar?
- Which high rise buildings in NYC will install boilers and produce their own steam?

Add qualitative insights to guide "load" forecasting

Sales growth has slowed down since the Great Recession

- In just about all recessions since the Second World War, load growth has resumed its normal trajectory within a year

Utilities are stumped

- Econometric models are consistently over-forecasting
- Price and income elasticities assume that tastes are constant
- End-use models combined with econometric models are doing a better job but they have no way to deal with changing tastes

We need to understand how consumers attitudes toward electricity are changing

- Counting the number of light bulbs and their efficiency levels is not sufficient

And find ways of dealing with the unique challenges that define our industry

We are still a regulated industry and cannot do all the things that competitive industries can do

While we can learn from how other industries (such as Wi-Fi Networks) use consumer research, our industry's technology is very different from theirs and slavish imitation should be resisted

Electricity is an invisible service and don't understand how it is made and delivered to them through the "electronic highway"

- We have to find a way of connecting with them in a language they understand

Presenter Information

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Dr. Faruqui's areas of expertise include rate design, demand response, energy efficiency, distributed energy resources, advanced metering infrastructure, plug-in electric vehicles, energy storage, inter-fuel substitution, combined heat and power, microgrids, and demand forecasting. Ahmad has worked for more than 125 clients on five continents. These include electric and gas utilities, state and federal commissions, independent system operators, government agencies, trade associations, research institutes, and manufacturing companies. He has testified or appeared before commissions in Alberta (Canada), Arizona, Arkansas, California, Colorado, Connecticut, Delaware, the District of Columbia, FERC, Illinois, Indiana, Kansas, Maryland, Minnesota, Nevada, Ohio, Oklahoma, Ontario (Canada), Pennsylvania, ECRA (Saudi Arabia), and Texas. He has presented to the governments of Australia, Egypt, Ireland, Philippines, Thailand and the United Kingdom and given energy seminars on all six continents. His research has been cited in Business Week, The Economist, Forbes, National Geographic, The New York Times, the San Francisco Chronicle, San Jose Mercury News, Wall Street Journal, Washington Post and USA Today. He has appeared on Fox Business News, National Public Radio and Voice of America. He has contributed more than 150 articles, papers and reports to the literature and published in peer-reviewed journals such as Energy Economics, Energy Journal, Energy Efficiency, and the Journal of Regulatory Economics and trade journals such as The Electricity Journal and the Public Utilities Fortnightly. He holds bachelors and masters degrees from the University of Karachi and a doctorate in economics from The University of California at Davis.