

Searching for Meaning in the Electricity Space

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No matter how many times I hear Garrison Keillor talk about all the kids in Lake Wobegon being "above average," I always find the line to be humorous. But is that where we are headed in our use of "smart" in the electricity space? What happens when everything in our space has crossed the threshold to become smart? Is smart grid a new state of existence, functionality and capability such that you either are or you aren't? Or are we going to have to come up with a sliding scale with some sort of superlative for the highest state of smartness?

Let's look at meters as an example. I have been involved with smart meters since they came on the scene and I know that in the beginning there was a pretty bright line between old AMR meters and the new smart meters. But very soon, every meter in the U.S. is going to be a smart one (70 million and counting!) and then these devices will continually be updated and improved and in many ways made *more* smart.

Smart grid and smart meters are of course not the only smart appellations in our space. There are smart appliances, smart homes and buildings, smart cities, and smart power.

Smart power is used by some, but it is hard for me to understand its meaning. I guess it could mean an efficient, highly dispatchable generation facility or a supply-side portfolio of such facilities. But then I quickly jump to the thought that an electricity provider portfolio that only includes power and not things like storage and DR cannot really be a smart one.

An adjacent space that has a smart "thing" (that not inconsequentially may increasingly be a communications and control option used by customers in our space) may provide a key to how we use the word smart. I am referring to the smart phone.

Smart phones seem to be continuously evolving. New versions come out every few months and they are getting smarter and smarter. But yet they are all still lumped together and called smart phones. I think they will still be called smart phones in the years to come. This represents an example of creating a threshold of smartness, i.e. once a phone has specific characteristics, then it is a smart phone. Smart meters and smart appliances seem to be other examples of this.

Smart grid is different. A grid is a complex, dynamic system of technologies that all work together while each of them may independently provide something different. It is possible for some of the components to be smart and some to not be. Smart cities are also like this in that they are multi-component systems. And the term smart city is being used to refer to an even an even greater diversity of components, i.e. energy, transportation, information technology, etc. As with a grid, some components of a city may be smart but others may not meet that threshold.

So you can perhaps see how I am going on this one. I think "smart" works for devices and independent technologies. I think it works less well for systems like grids and cities, and I believe you will see that usage wane. I think the fact that you are already seeing the US Department of Energy use terms like grid modernization instead of smart grid is a sign of that.

But here is the hybrid or outlier - smart homes/buildings. A home is a place where a lot of individual devices and technology components currently operate individually, and not as a

system. A home can have a smart meter, a smart thermostat, and a bunch of smart phones in it. That would seem to say that it should be viewed as a system and therefore according to my (loose) criteria the term smart should not be used. But I think the fact that a home or building is such a *small* system may make it different and that they may be more like a smart "thing" than they are like a smart grid or city.

So there you have my take on the word smart and how it is and will be used in our sector. You may agree or disagree with me, and I would love to hear from you on that. I will also be looking at other words in future columns. I think microgrids, alternative energy, time-based prices, energy efficiency, sustainability, and resiliency might all be good ones to tackle. Maybe you want to suggest others?

But the key thing I want to say in closing is that words matter and the more we think about how we use them the higher the likelihood is that we all know what everyone else is talking about. That would seem like a good thing for all of us as we buckle our seatbelts for a fast ride in the rapidly evolving electricity space. A space that may in many ways be a new frontier. But we don't have Tricorders to translate Klingon. It would be good to know what the other person is saying and meaning since we don't have that particular "smart" device.