

**Industry Host:** Electric Research Power Institute (EPRI)

**Title:** Unlock the Value of the Connected Home

**Challenge:**

How to unlock the value that Home Automation (connected home) technologies represent to the grid beyond simple energy savings for homeowners.

**Background:**

Home Automation solutions offer consumers the ability to optimize energy usage, and minimize their home energy costs. The amount of savings, however, is limited by the existing cost of electricity. Are there higher-value energy management services that could be made available (i.e. demand response, energy efficiency suggestions (i.e. load disaggregation and comparison against neighbors, state of art, utility efficiency rebate programs), or newer concepts like ‘consumption’ response (being paid to consume energy), or demand scheduling (perhaps an aggregator can negotiate more favorable supply contracts), if the infrastructure, both in the home as well as on the grid, were to exist? An industry example may help illustrate the point: GE Aircraft Engines began using remote monitoring to improve maintenance on specific assets in the field. However, they quickly realized that aggregation and analysis of data enabled them to look for trends and patterns that produced efficiency and savings across the entire fleet.

It is difficult for key stakeholders (i.e. utilities/grid operators/regulators/etc...) to pursue investments in infrastructure (i.e. hardware, monitoring, control), services, and market development without having a viable path to unlock and realize the value. Similarly, home dwellers lack services needed to compensate them for installing and managing a home automation system. Part of the challenge within this space is that the pace of innovation, especially in the consumer electronics (CE) industry which is driving the home automation space, continues to increase. This drives product life cycles shorter, while at the same time energy infrastructure stakeholders make their investments based on 15-30 year time horizons. How can the risks of product obsolescence be managed within the time frame of large, infrastructure investments?

**Boundaries and Considerations:**

- Upgradability of home automation technologies is important to compensate for shortened product lifecycles in order to reduce obsolescence or reduce the cost of incorporating the latest technology
- Ability to participate in demand response programs
- Consider the advantages of open, interoperable standards versus proprietary solutions