

The Smart Home: Applications for Home Energy Management

Wednesday, September 29th, 2010, 8:30am – 11:30am @ the Garden Court Hotel in Palo Alto, CA

In this seminar we address the developing market of home energy management systems and solutions. Home energy management takes varied forms, from adding energy efficiency upgrades and energy monitoring software to home appliances and electronics, to integrating software applications on top of the home energy system. On the utility-side, these smart applications exist to manage/monitor smart meters deployed in homes. We address herein the spectrum of new applications, from end-to-end solutions to point solution software and hardware.

After assessing these applications and varying strategies/models for market entry, we ask: is the goal of these products a cut-and-dry reduction in home energy consumption or the more unquantifiable goal of consumer education of home energy habits, and, does the latter hold value in itself? What is the long-term impact of the former vs. the latter? Can they be mutually-exclusive? And lastly, should control of such applications be consumer-oriented or utility-oriented?

1. Applications: (Utility- Independent) Software and Network Systems

- ▶ Web interfaces/online dashboards etc.
- ▶ Cloud computing networks
- ▶ Mobile applications
- ▶ Smart controls

2. Applications: Smart Meter Management

- ▶ Home Area Networks (HANS): as demand-side management for load-shedding; as communication devices
- ▶ The softgrid layer for smart meters (MDM systems)

3. Applications: Energy Efficient Electronics and Appliances

- ▶ Power-saving devices (smart plugs)
- ▶ Power measuring devices
- ▶ Automated and connected appliances (refrigerator, lighting, etc.)

4. How are these applications being presented into the market?

- ▶ Piloting technologies via Utilities: where has this occurred? Has it been successful (too early to tell?).
- ▶ Direct to consumer, to retailers
- ▶ Coupled with other products/services (energy auditors, home security, PV installers, home builders, etc.)

5. Consumer Behavior

- ▶ Aligning consumers' values with home energy management
- ▶ Hands-off applications vs. interactive applications
- ▶ Who are the early adopters and how to attract them?
- ▶ *Does Knowledge Spur Change?*: The impact of educative/monitoring applications vs. energy reducing applications

6. The Cost Factor

- ▶ What is the price range for such applications?
- ▶ What is the ROI?
- ▶ Strategies for cost-reduction
- ▶ Impact of government stimulus and initiatives

7. Intra and Inter Industry Partnerships and Collaboration

- ▶ Start-up companies and large electronics and software companies: in competition? in collaboration?
- ▶ Partnerships with telecom, broadband providers, home security companies: Who is linking arms with who? What does this look like?
- ▶ Touch points between utilities, manufacturers, installers, and service providers

Panelists: **OPOWER**, Nadeem Sheikh, Director, Client Solutions • **Enphase Energy**, Raghu Belur, Co-founder/VP of Marketing • **iControl Networks**, Letha McLaren, VP Energy Products • **Control4**, Eric Smith, Chief Evangelist • **4Home**, Jim Hunter, Founder and CTO

Moderator: **PRTM**, Tom Solazzo, Director