

# ICT for Sustainable Homes



**Innovative Products and  
Services for the Home**

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President & CEO  
Continental Automated Buildings  
Association (CABA)

# CABA Vision

“The knowledge-based forum for industry leaders who advance the use of technology and integrated systems in the global home and building industry.”



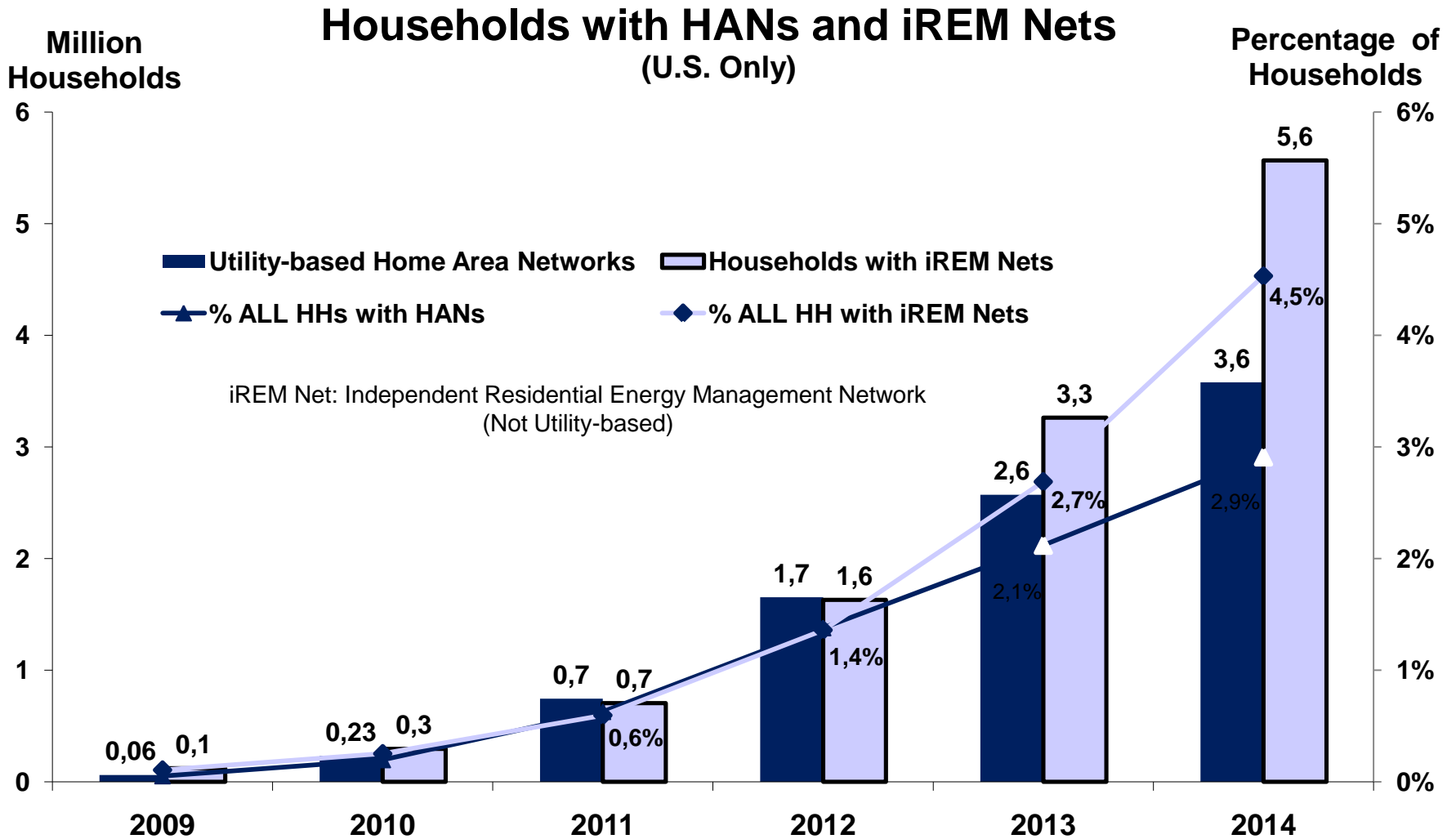
# BRE Innovation Park – Innovation in Systems



# The HAN is here.



# U.S. Households with HANS and iREM Nets



The  
opportunity is  
huge

TV

Cell



**Billions of  
devices**

Telephone

PC/Data

Electric

Alarm

# What are the digital home applications?

Energy  
Management



Home  
Healthcare

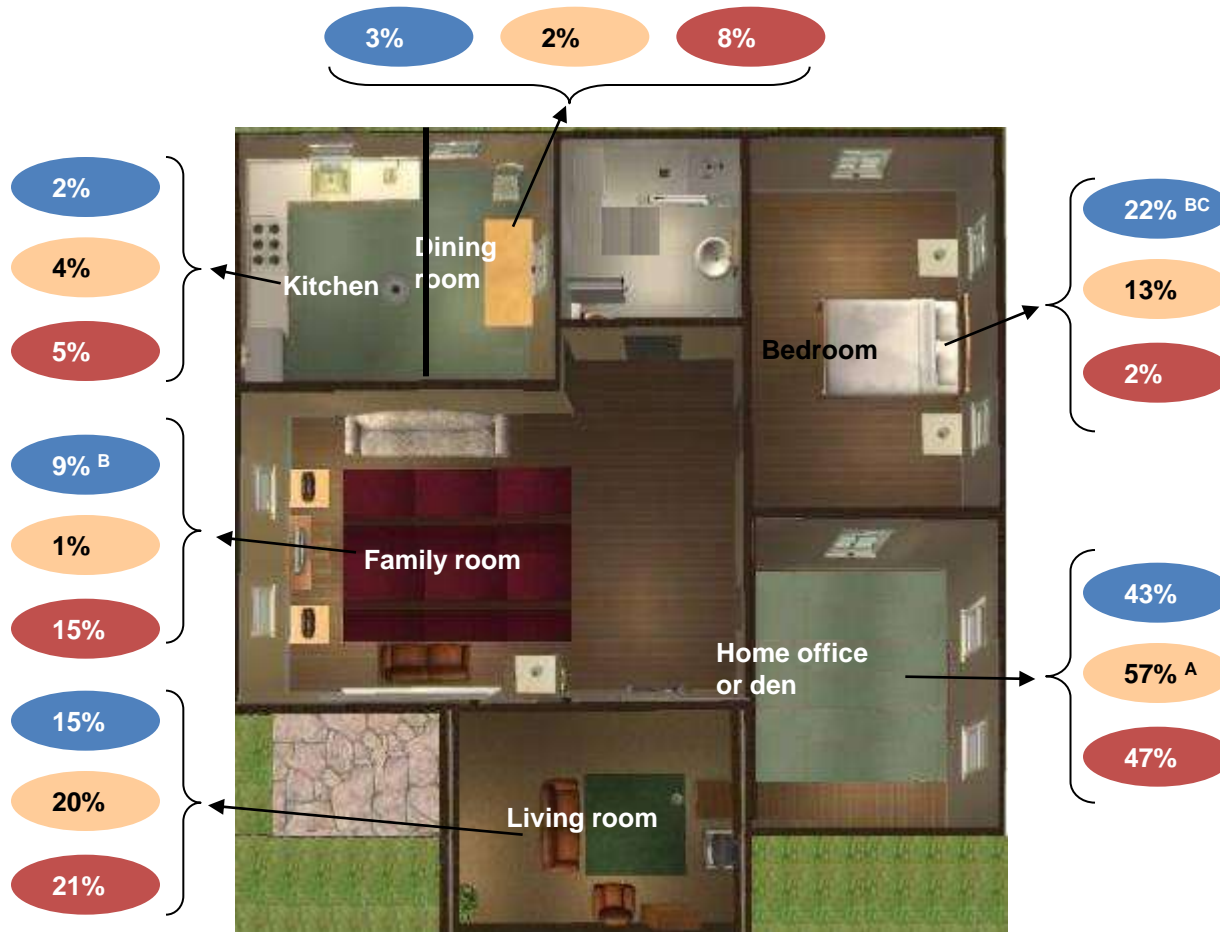
Home  
Entertainment

Communications

Home Control

# Career Ecosystem-Work at Home

When working from home, in which room of the house do you typically work?



U.S. 2008 Total Online HHs (n=346; A)

U.S. 2005 Total Online HHs (n=310; B)

Canada 2008 Total Online HHs (n=97; C)

Source: CABA State of the Connected Home

# What are the killer new apps?

Video Conferencing



Home Healthcare

Home Monitoring

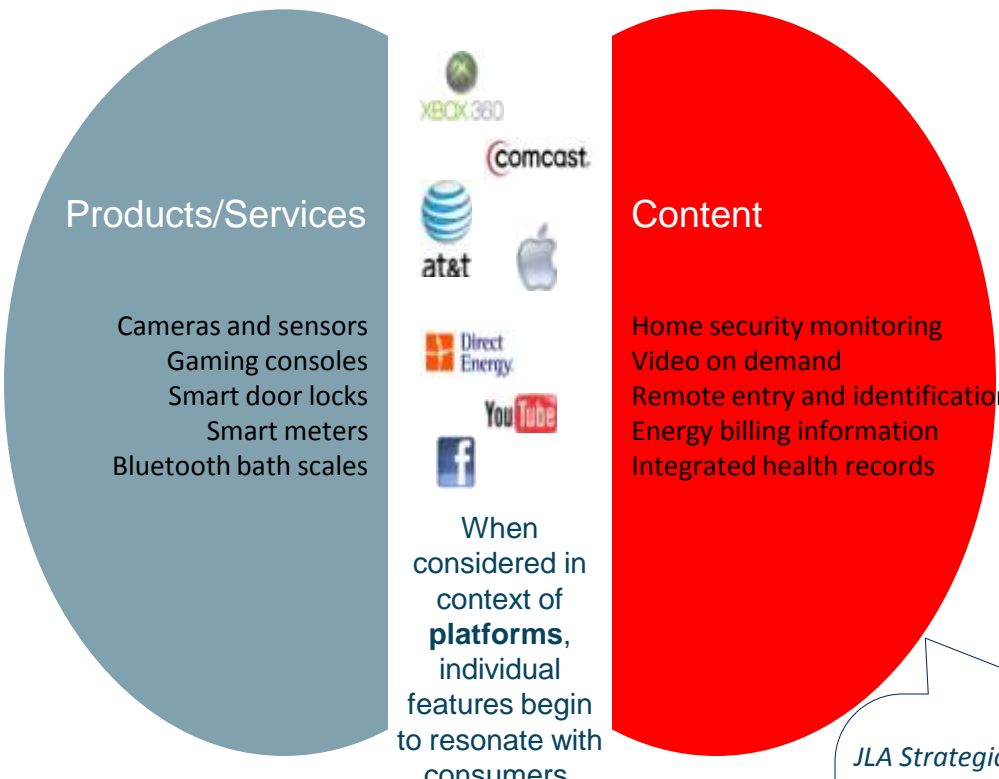
Smart grid

Immersive gaming

# CABA Connected Home Roadmap 2010

## Ecosystem Development

The ecosystem for connected home solutions has evolved beyond feature development, and requires new thinking around how to bundle products, services and content .



*JLA Strategic Research "...Opportunities tend to be greater among those younger...demand for remote, one touch control of home security capabilities increase as age decreases..."*

- monitoring/tracking electricity consumption
- One touch alarm control
- Remote notification of power loss and basement flooding
- Connection of lighting to security systems





# The Home and Beyond from a Telecom perspective

Courtesy: ZigBee Alliance

Handset is the hub of the interaction between user and objects

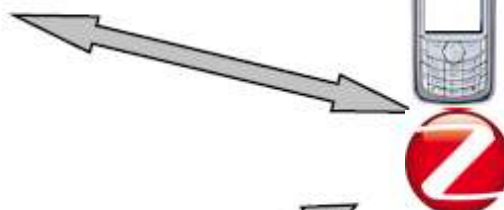
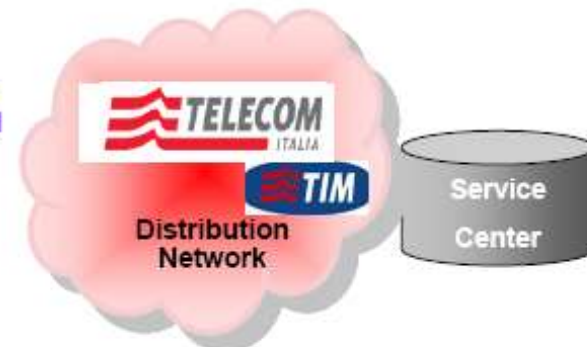


## Home

### Automation & Control

- Lights, HVAC, Domestic appliances
- Entertainment (e.g. DTT)
- Healthcare, Tele-assistance
- Monitoring & Security (e.g. temperature, gas)

## Mobile Terminal



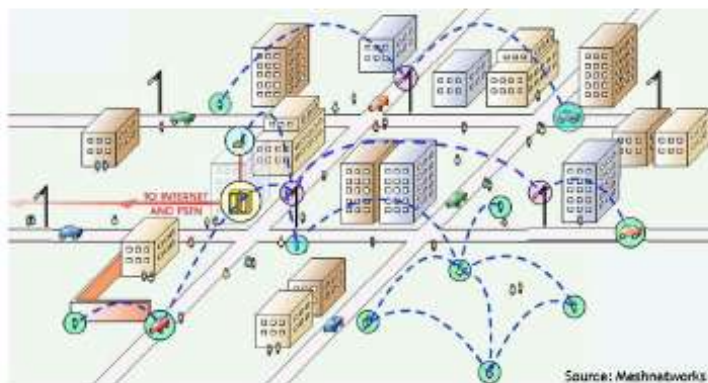
## M-Commerce Services

- m-payments (bar, shops, supermarkets)
- m-ticketing (cinema, train, bus)



## Digital Smart City

- Access Control
- Parking payment system
- Infomobility services (e.g. traffic control)
- Environmental Monitoring
- Localization



Source: Meshnetworks

# Case Example: Schlage LiNK



Source : Z-Wave Alliance

# The Schlage LiNK Solution



# Schlage LiNK Delivers Solutions

## Security



## Home Control



## Home Energy Management

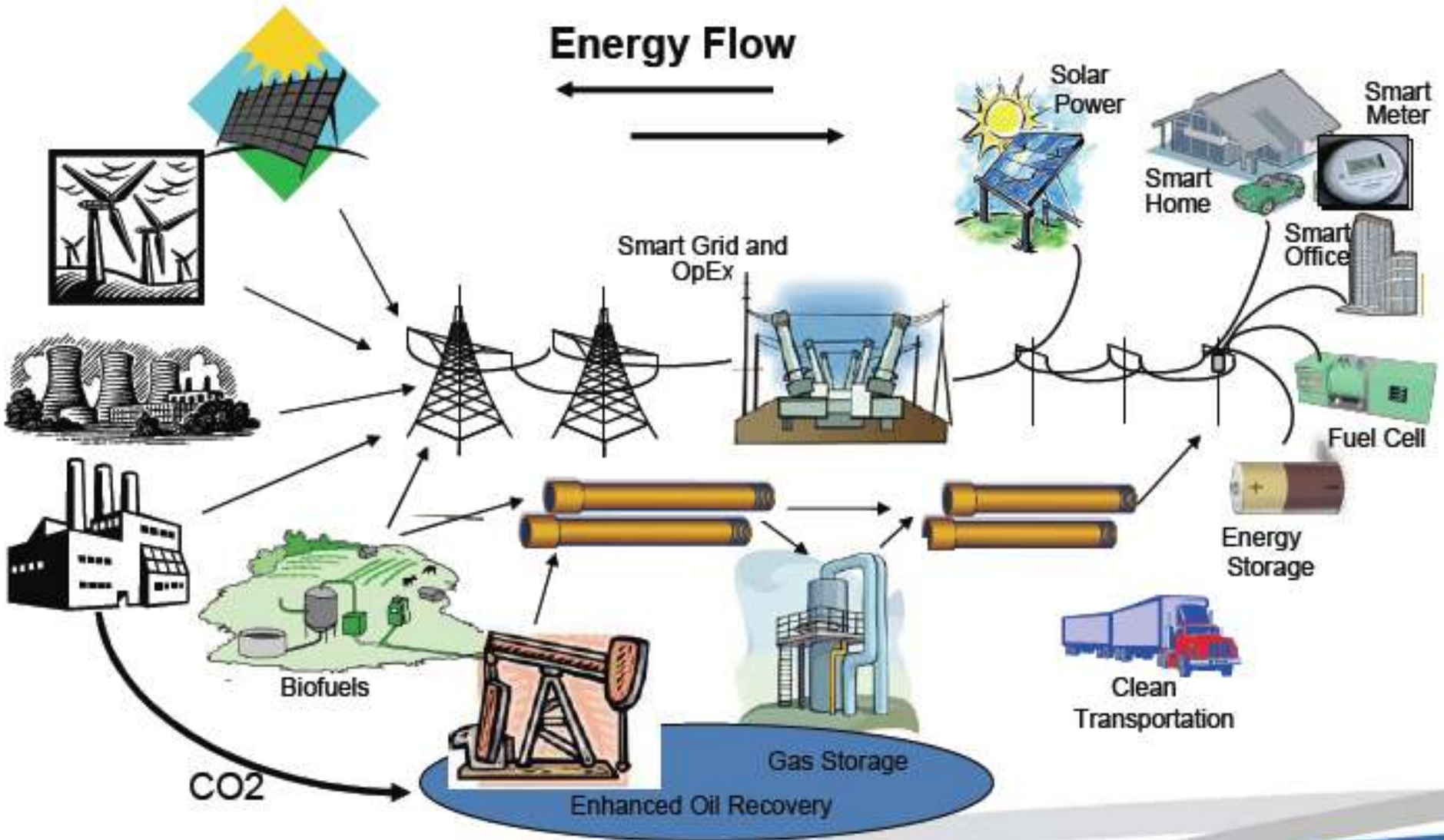


## Video Verification



Source : Z-Wave Alliance

# The Utility World Tomorrow



# SMART GRID DEFINITION

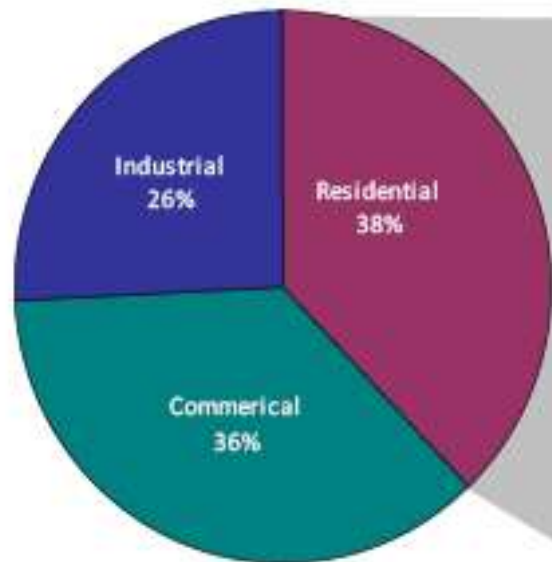
A “smart grid” is a digital, self-healing energy system that delivers electricity or gas from generation sources, including distributed renewable, to points of consumption. It is capable of optimizing power delivery and facilitating two-way communication across the grid, enabling end-user energy management, minimizing power disruptions and transporting only the required amount of power. The result is lower cost to the utility and the customer, more reliable power and reduced carbon emissions.

Source: World Economic Forum  
Smart Grid Project Task Force &  
Steering Board

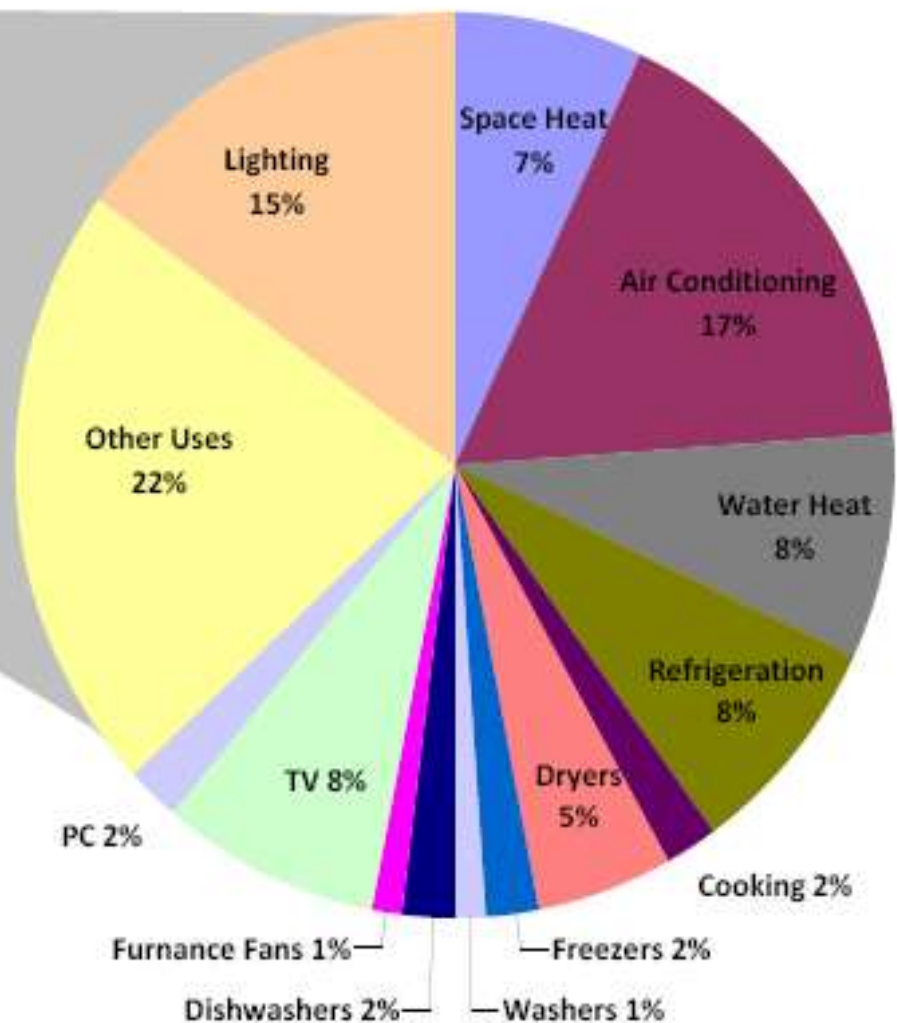


conEdison

## WHY ARE APPLIANCES RELEVANT?



- Appliances, space conditioning & water heating account for 53% of total residential energy use or 20.1% of total electricity consumption in the U.S.
- Whirlpool's Suite of Information-connected appliances includes process-oriented appliances as well as HVAC and water heater.

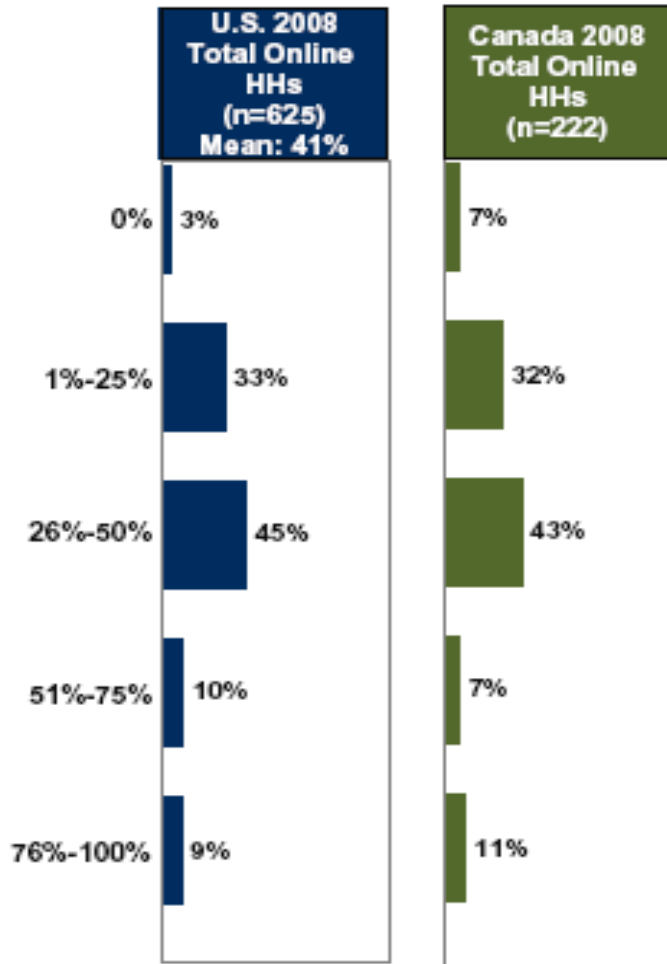


Source: ERPI Assessment of Achievable Potential from Energy Efficiency and Demand Response Programs in the US (2010-2030)

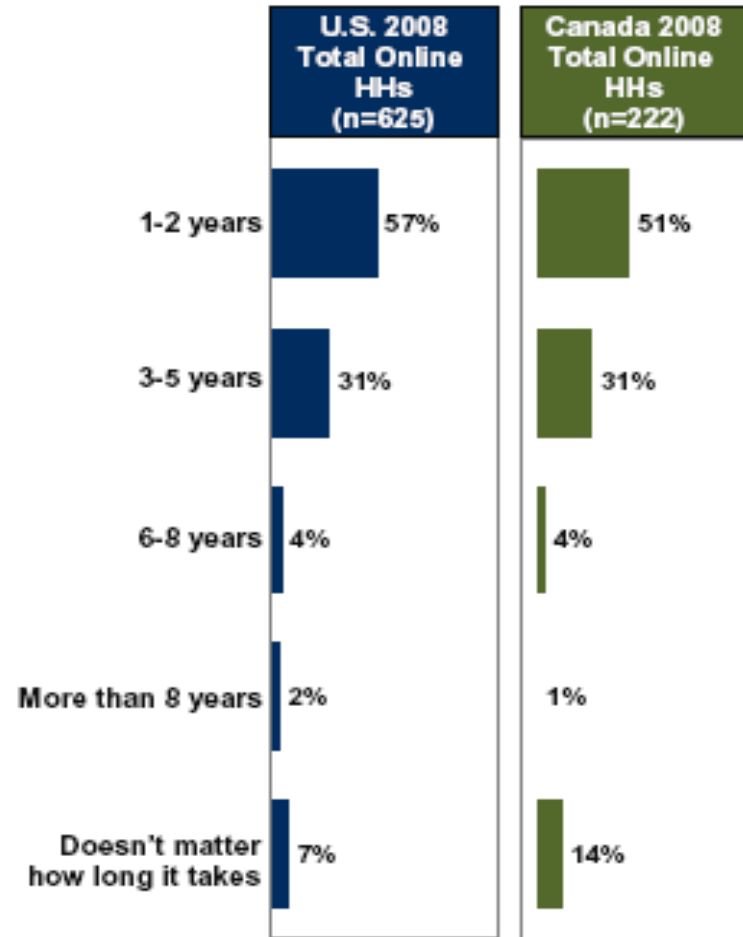
2008 TOTAL US RESIDENTIAL ELECTRICITY CONSUMPTION: 1,403 TWh

# HOME ENERGY MANAGEMENT ADOPTION SURVEY

**% Savings on Annual Home Energy Bill  
Required to Consider Buying a  
Home Energy Management System**



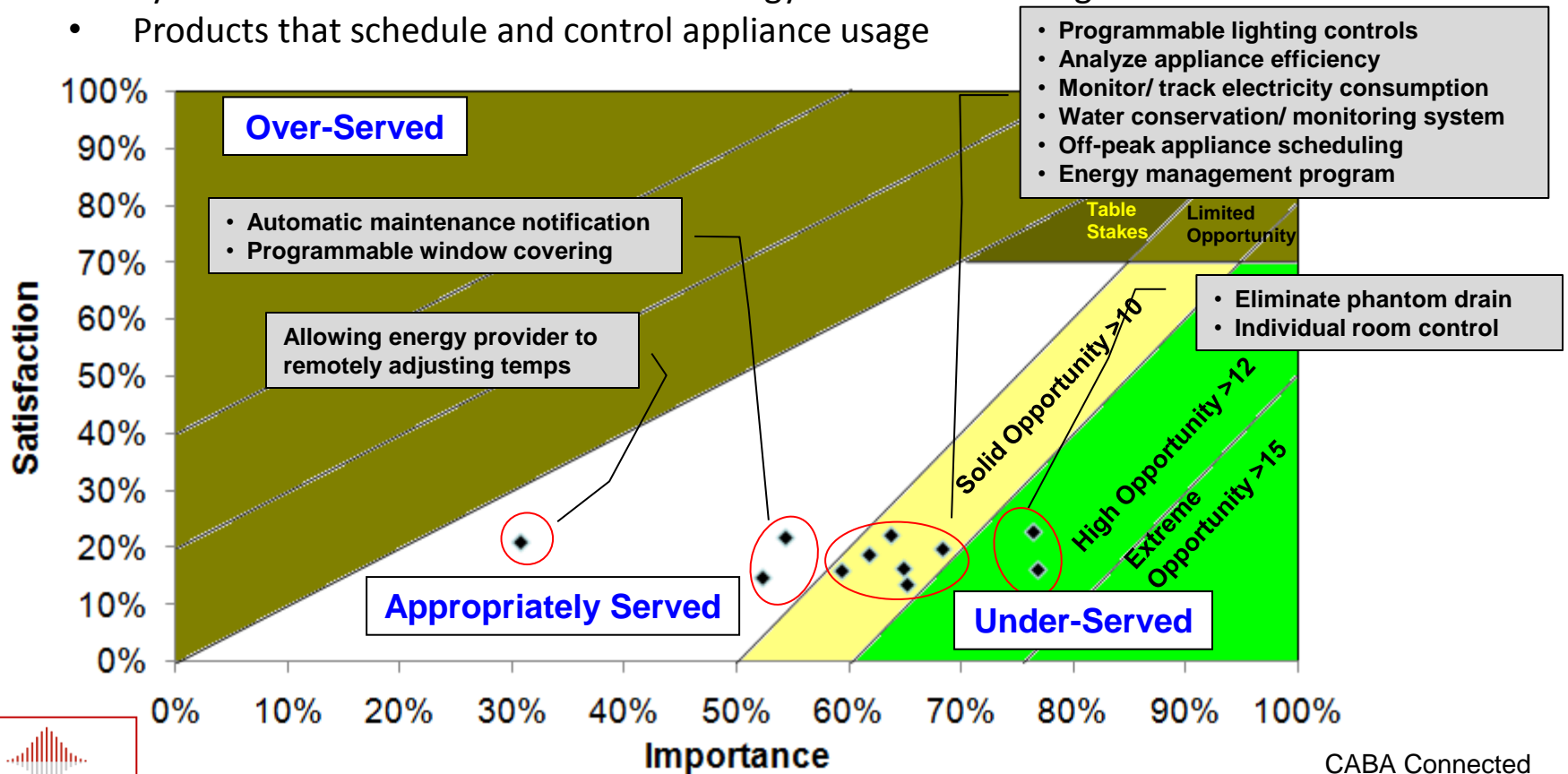
**Home Energy Management System  
Expected Payback Period**



# US: Energy & Green Living Opportunity Landscape

There is a substantial market opportunity for energy reduction products/services:

- Systems that track where and when energy and water is being consumed
- Products that schedule and control appliance usage

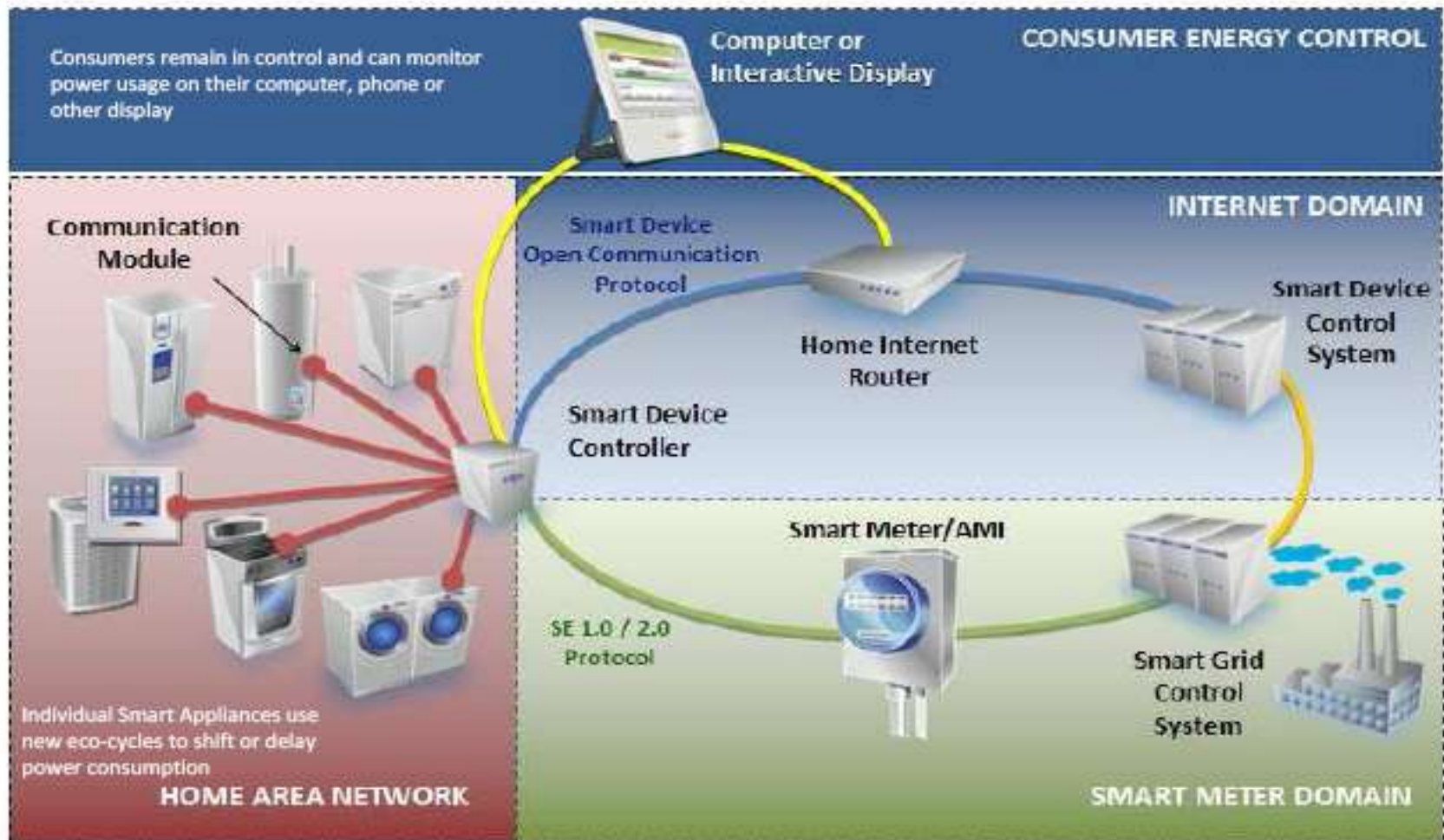


Percent top 2 box Satisfaction and Importance scores

CABA Connected  
Home Roadmap 2010

JLA Strategic Research

# WHIRLPOOL SMART DEVICE NETWORK ARCHITECTURE



Smart Devices are linked to each other in an intelligent HAN that manages power usage and information

Two paths to the home: the Internet and/or the Advanced Metering Infrastructure

# TXU Energy iThermostat Website



TXU Energy iThermostat™

☎ Questions about iThermostat? Call us at 1-866-733-1807

[Home](#) [Program Details](#) [FAQs](#) [Installation](#) [Energy Tips](#) [Enroll ▶](#)



**At home, from the office, or on the road...  
manage your home's heating & cooling from virtually anywhere.**

The new web-enabled TXU Energy iThermostat™ lets you manage your home's energy usage, save money and help the environment from virtually any computer.

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## Features & Benefits

Click here to  
**Watch Video**



Home, work or on the road, manage your home's air conditioning use - anytime, anywhere - from any Internet-connected device.

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## Installation

Click here to  
**Watch Video**



Learn how to install your iThermostat and gateway device.

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## iThermostat Virtual Tour

Take the  
**Virtual Tour**



See a demonstration of the powerful capabilities of the TXU Energy iThermostat.

## iThermostat Log In

Already participating in the Energy Conservation Program at TXU Energy?

Login below to access your energy management console:

Email Address:

Password:

[Log In](#)



# CABA's Energy as a Managed Service Study

## Member Participants

1. 3M Company
2. Bell Canada
3. Best Buy
4. Direct Energy
5. Freescale Semiconductor
6. Honeywell International
7. Ingersoll Rand/Trane/Schlage
8. Intel Corporation
9. Landis+Gyr
10. Microsoft Corporation
11. TELUS
12. Tyco Electronics
13. Whirlpool Corporation

Research Supplier: POCO Labs

Project Manager: Direct Energy

# Devices inside the house are all digital and IP



# The Smart Home





## BRIGHT GREEN BUILDINGS

### Convergence of Green and Intelligent Buildings

Complimentary Research Report: [www.caba.org/brightgreen](http://www.caba.org/brightgreen)



CABA Intelligent & Integrated Buildings Council



Continental Automated Buildings Association

FROST & SULLIVAN



[www.caba.org/brightgreen](http://www.caba.org/brightgreen)

# Your information Source for Home & Building Automation



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