

Disruption of Construction



CR Herro, Meritage Homes

What the industry thinks 'Innovative Disruption' is



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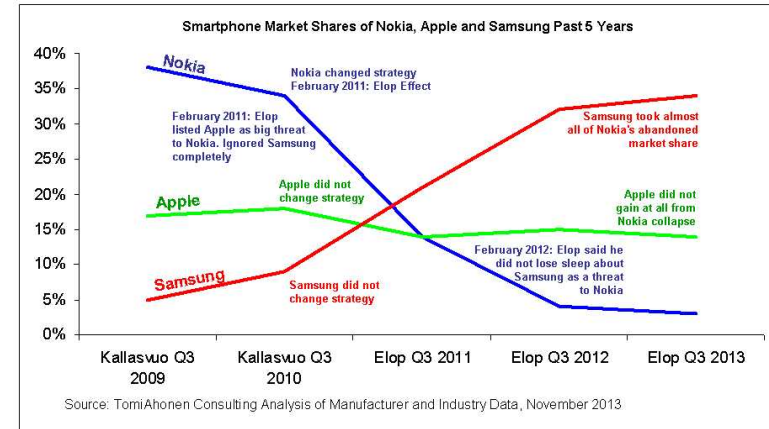
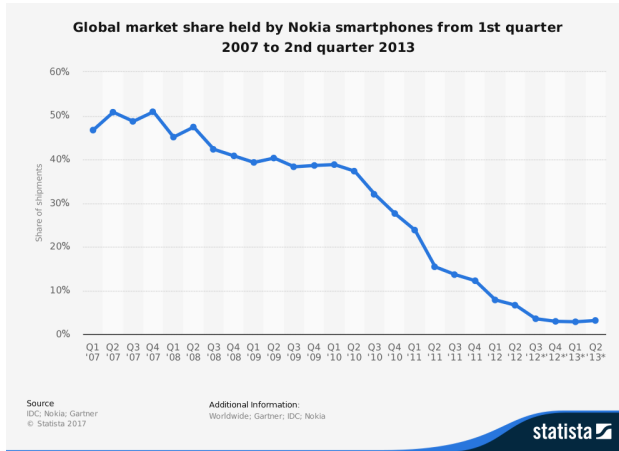
Bummer.

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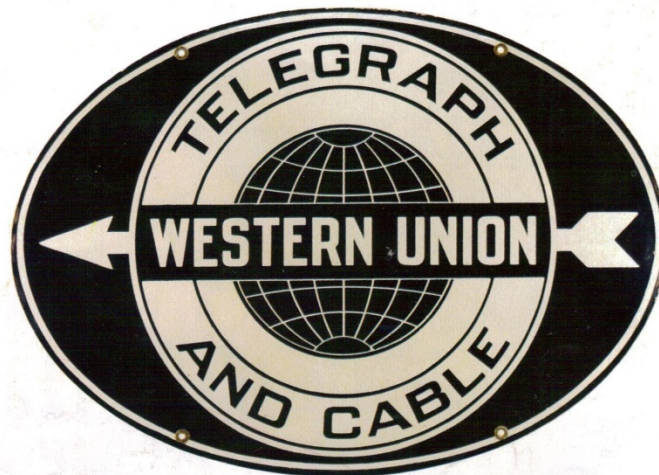
What Innovative Disruption Actually is ...



- ▶ In the end of 2007, Nokia's global smartphone market share greater than 50%. By the second quarter of 2013 the company's market share had slipped to just 3.1%

How is this different than change ...

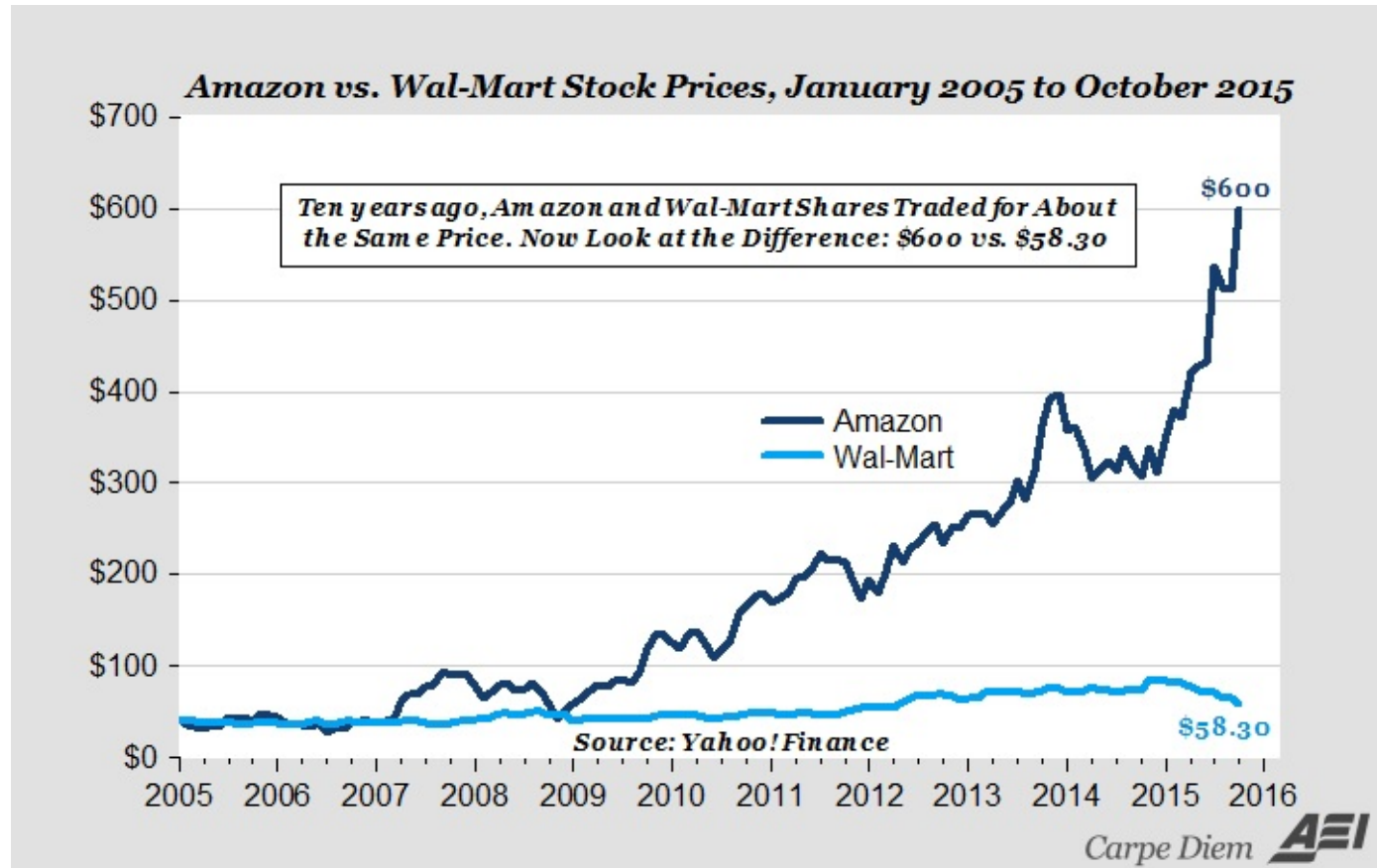
Disruptive innovations tend to be produced by outsiders and entrepreneurs, rather than existing market-leading companies.



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It is better to be the disruptor ...



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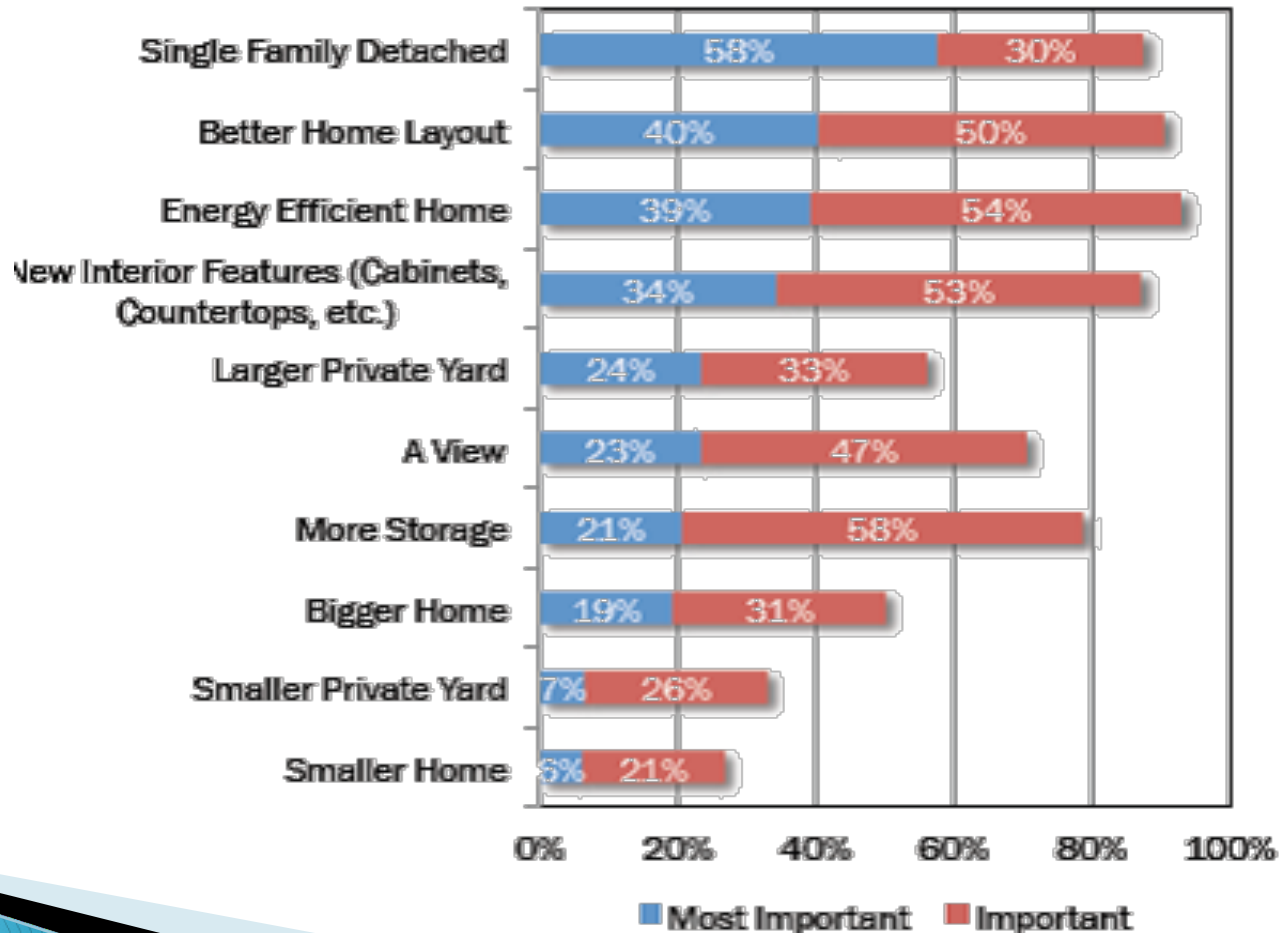
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“Skate to Where the Puck Is Gonna Be”



Consumer Choice drives change

Rate the importance of the following when purchasing your next home:



Industry Macro Forces (Inside)

- Supply Constraints and Responses
- Trade Constraints and Responses
- Evolving Code Requirements
- Buyer Evolution
 - Internet
 - HGTV
- Changing Mortgage Requirements

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Home builders can't find enough workers

by Kathryn Vasel | @KathrynVasel

May 19, 2017: 8:38 AM ET

Recommend 15K



Labor Shortage Squeezes Builders

By Peter Grant | Published May 08, 2017 | Features | Dow Jones Newswires

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TRADE WARS: THE FIGHT FOR LABOR GROWS UGLY, PITTING BUILDER AGAINST BUILDER

As starts increase, builders are having trouble finding contractors.

INDUSTRY NEWS > RESIDENTIAL REAL ESTATE

Why won't young people enter the trades?

Oct 31, 2014, 1:20pm PDT



Immigration Changes Mean Surge in Construction Costs

U.S. THE WALL STREET JOURNAL.

Worker Shortage Hammers Builders

Construction firms boost wages to attract skilled labor but also find ways to do more with less

BUILDER

LABOR DAY, LABOR PAIN, AND LABOR GAIN

Exclusive: BUILDER and Metrostudy team up to heat-map the nation's skilled labor capa

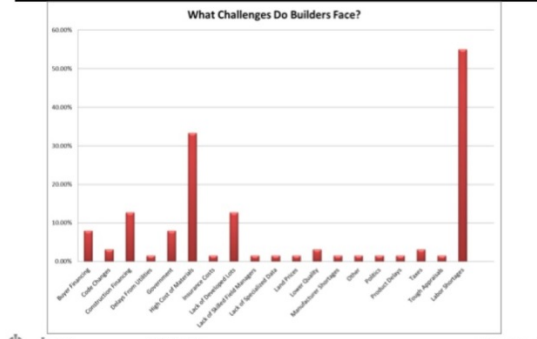
Homebuilders take a 'beating' from lack of labor

Diana Olick | @DianaOlick

Friday, 17 Jul 2015 | 11:31 AM ET



Builders Face Challenges In Labor, Lack of Financing (Consumer and Construction), Lot Scarcity and Material Costs



Industry Macro Forces (Outside)

- Technology
- Materials
- New Entrants
 - Direct Supply Chain
 - Manufacturing Mind-set
- Transactions

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Amazon juggernaut sets its sights on its next victim: The middleman

- The growth of Amazon has the potential to disrupt "middlemen," particularly in the industrial space.
- Amazon Business now has 300,000 registered corporate buyers and recently surpassed \$1 billion in sales.
- Stocks like W.W. Grainger and Fastenal could come under pressure from Amazon, analysts say.

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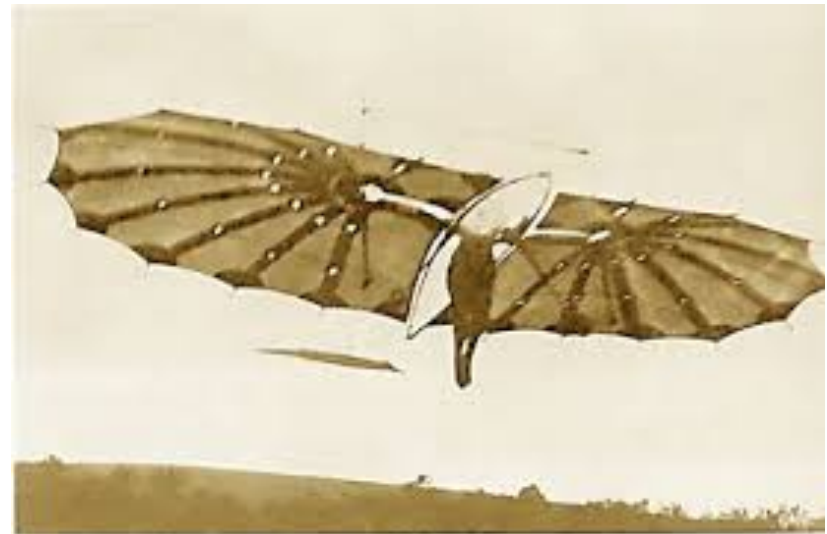
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So ...

Blue Sky

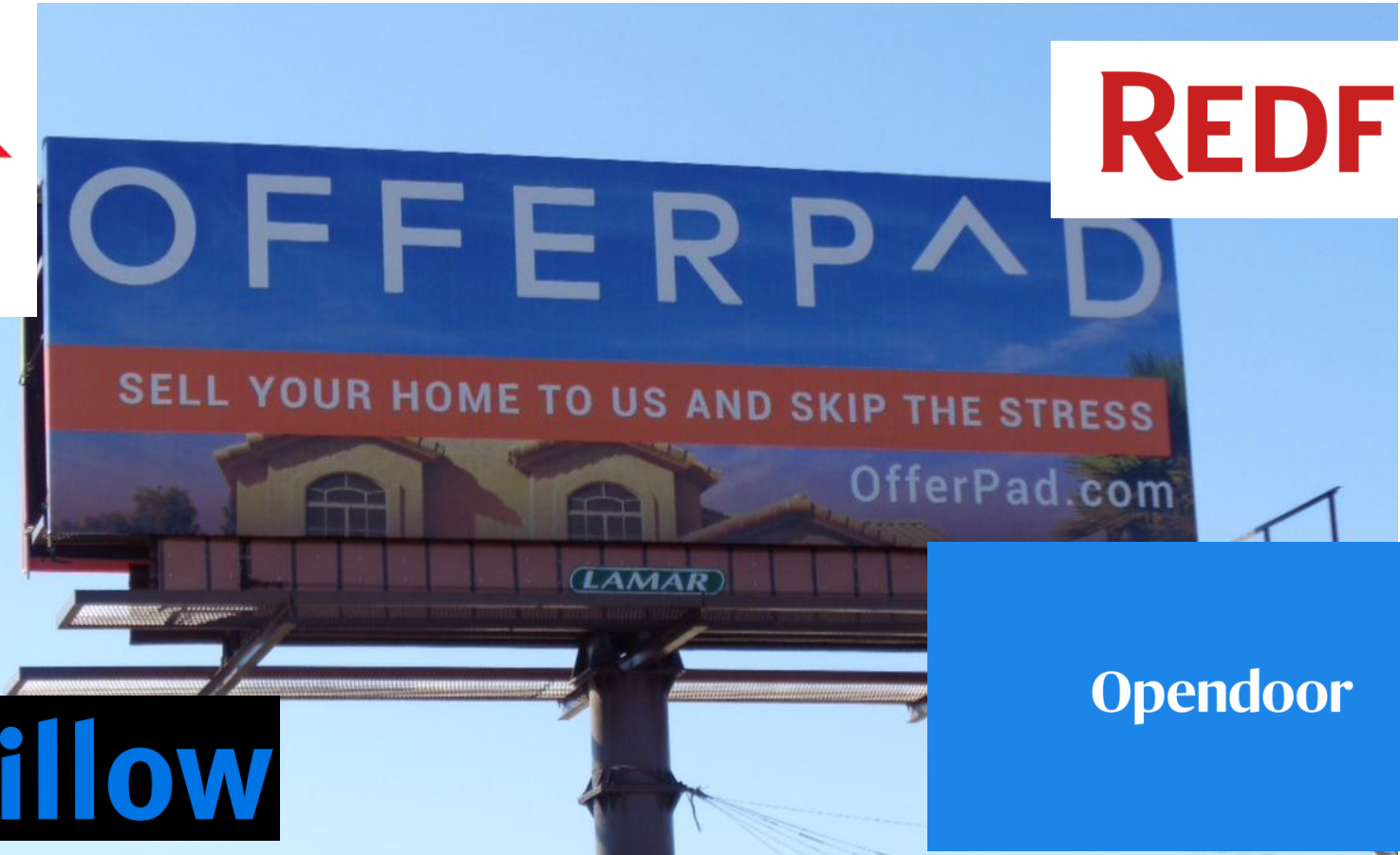
Creative ideas that are not limited by current thinking or beliefs. Original or creative thinking, unfettered by convention.



Transactions



REDFIN



Opendoor



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Panelization



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Modularization

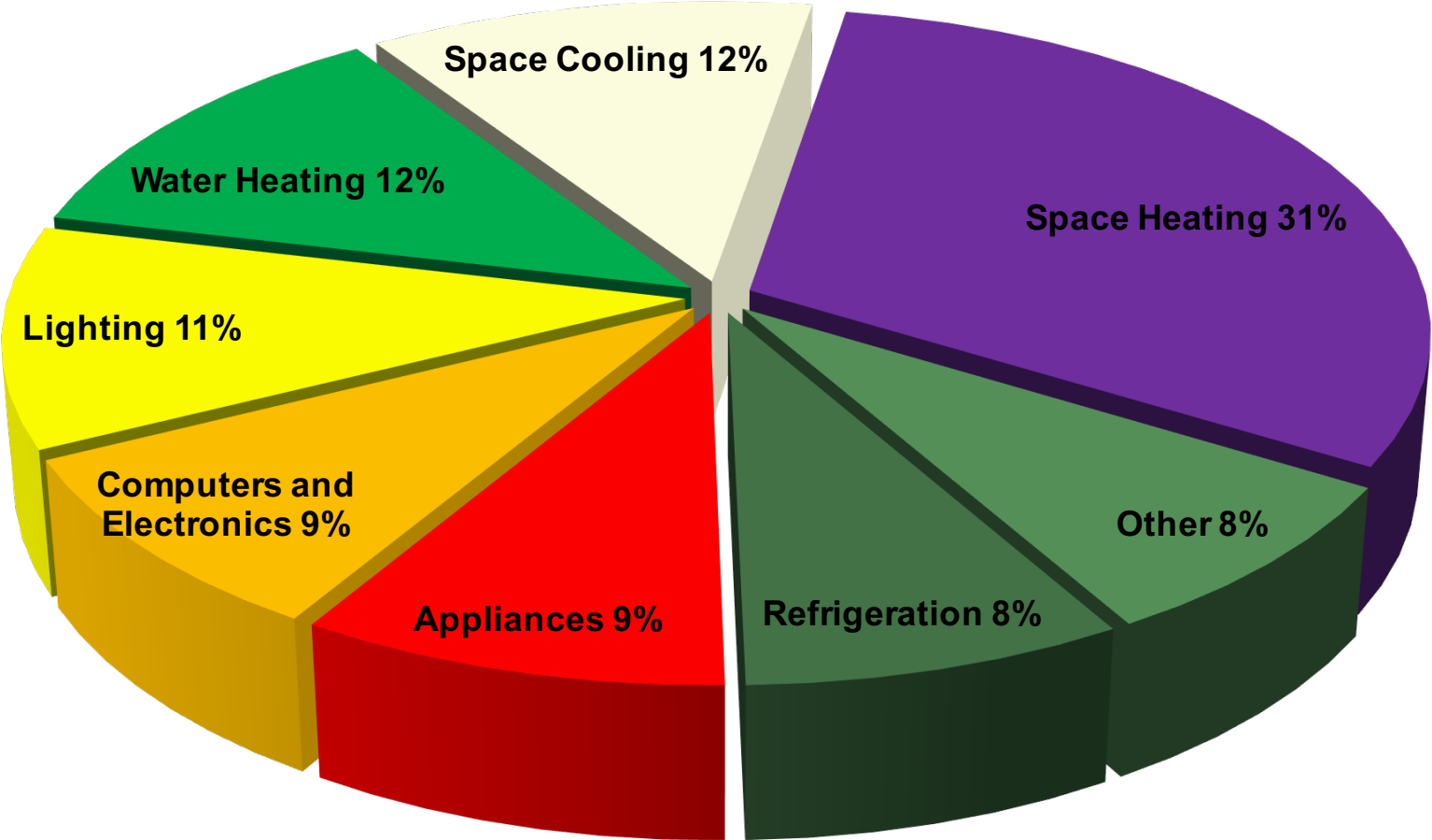


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Designing and Permitting Zero



Portents of the Future

Homes to the Power of **ZERO**



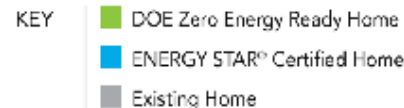
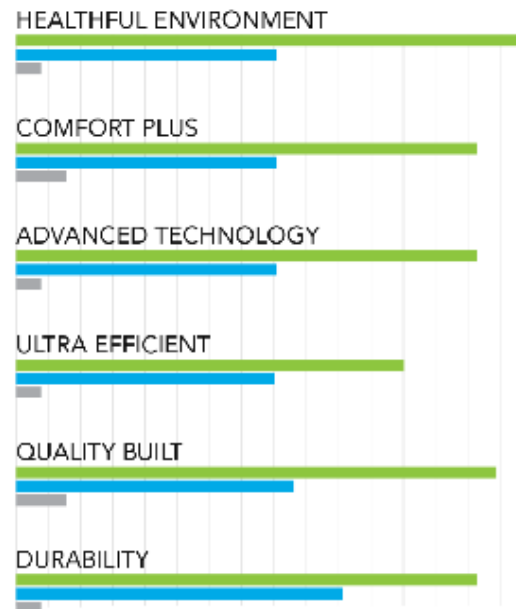
What is the DOE Zero Energy Ready Home™ Label?

It is a Symbol of Excellence for energy savings, comfort, health, quality, and durability met by a select group of leading builders meeting U.S. Department of Energy Guidelines.

What is a Zero Energy Ready Home?

It is a high-performance home so energy efficient, all or most annual energy consumption can be offset with renewable energy. In other words, it's the Home of the Future.

A Symbol of Excellence



This graphic comparison chart demonstrates relative performance of this (X) Zero Energy Ready Home to existing homes (built between 1990 and 2010) and ENERGY STAR Certified Homes. Actual performance may vary.



Sierra Crest



Happy planet. Happy wallet.

Special savings on California's first Net Zero Neighborhood. Ends April 30.



Click the Promotions
tab below for details



Selling: Zero



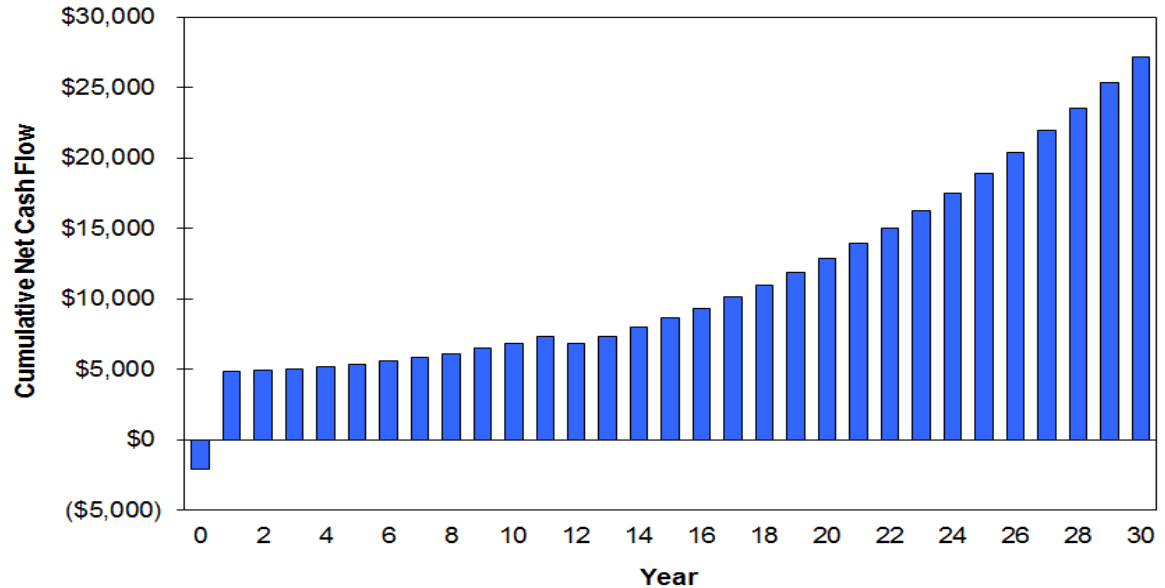
Cash Flow Analysis Example:

4.6kW system in AZ

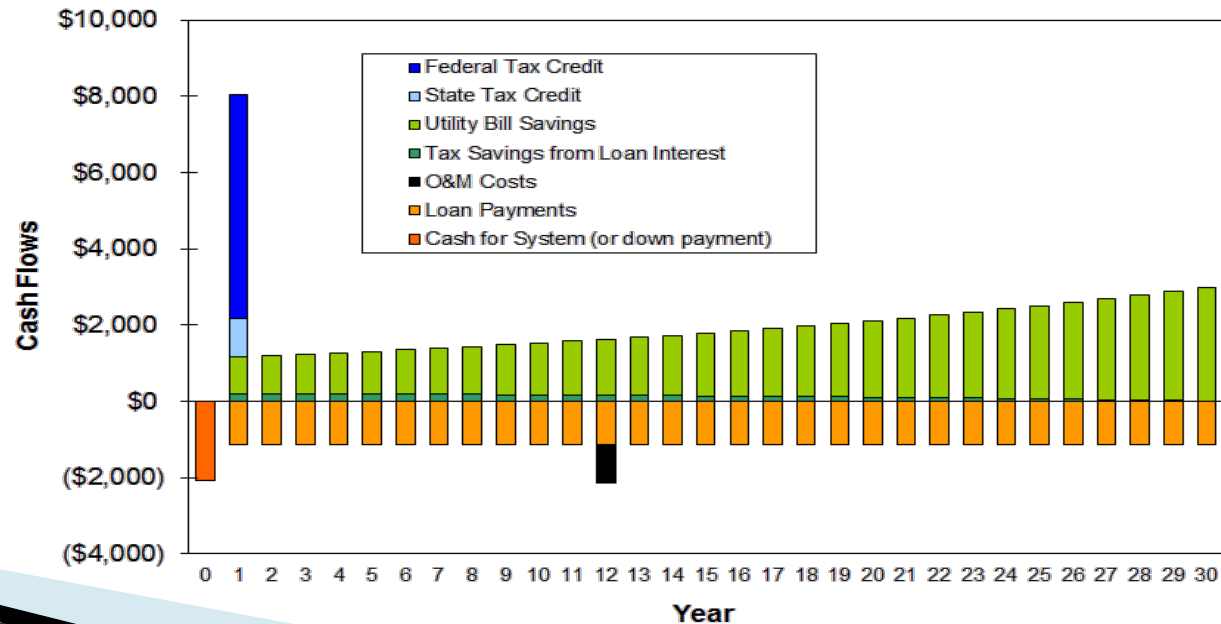
Assumptions

- 10% down, 30-yr FMR at 4.6%
- Current Electricity Avg. rate of \$0.12 per kWh
- Electricity rate of inflation = 4%

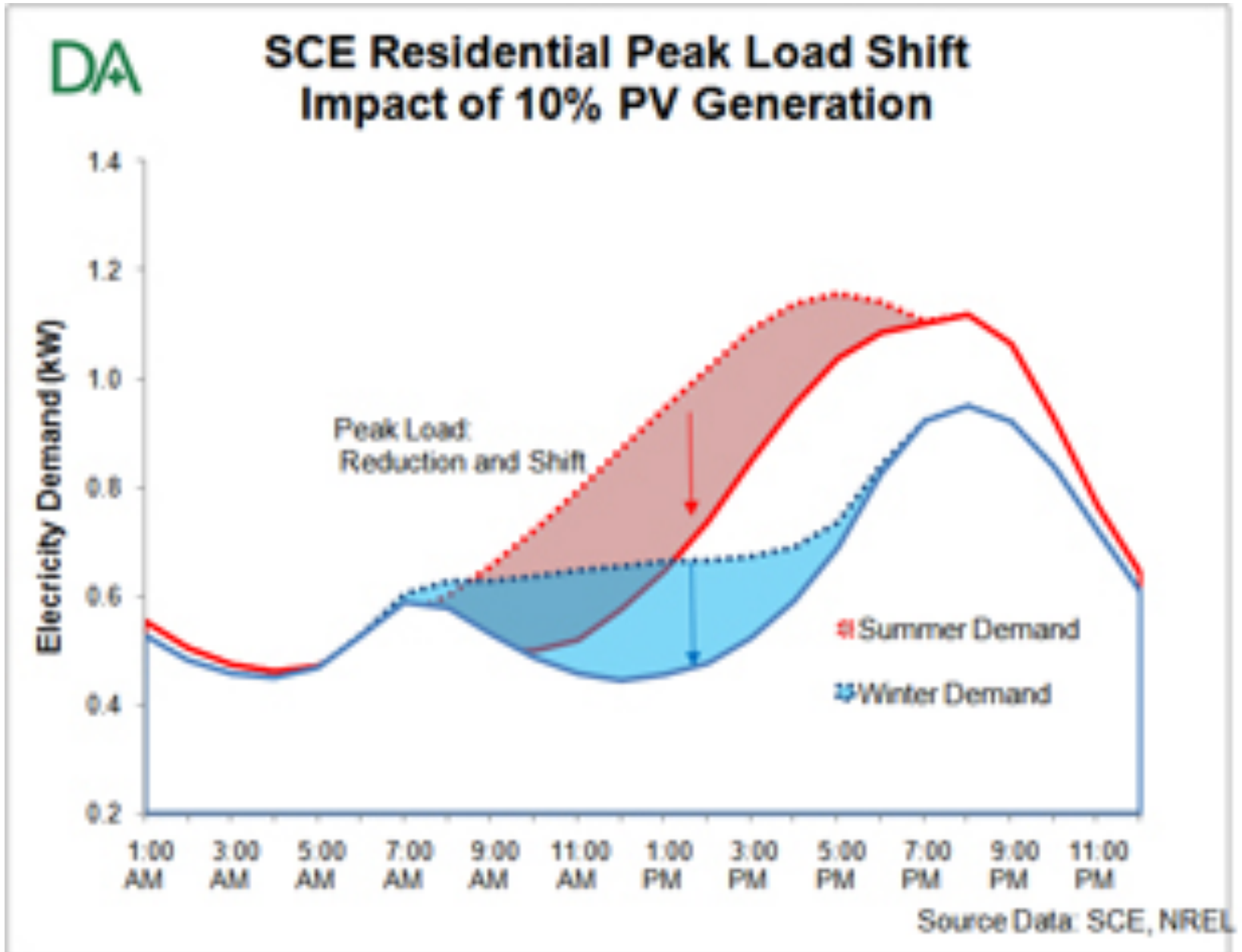
Net Cash Flow, Cumulative



Year-by-Year Cashflows

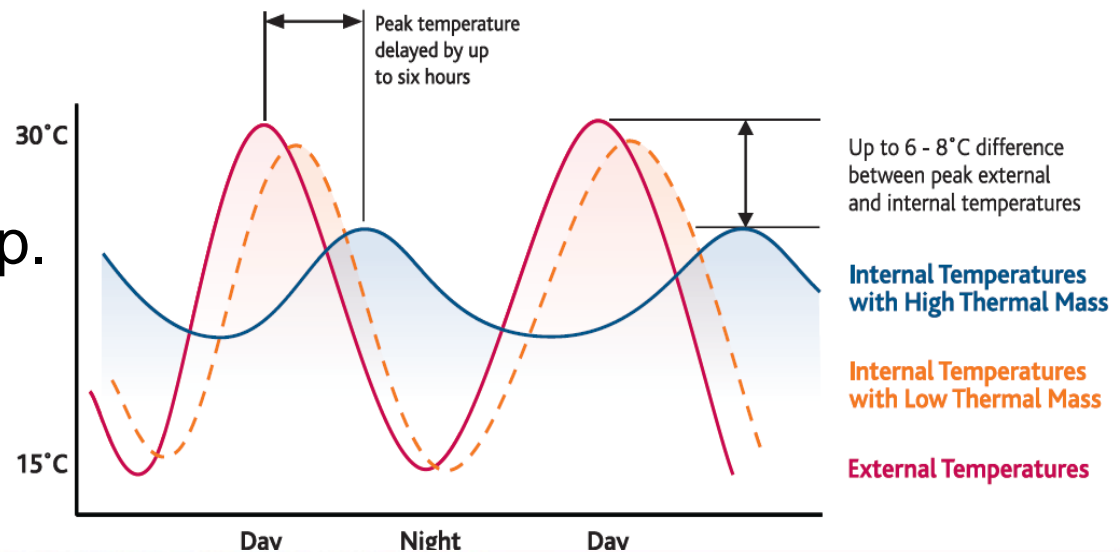


Renewable Energy: Duck Curve



Moving the Energy Demand

- A. Smart ventilation (off peak)
- B. Isolated Thermal mass / phase change
- C. Thermal storage (heatpump HVAC precool off peak)
- D. Low solar heat gain (reflective / vented cladding materials)
- E. Smart appliances
- F. Large hot water storage w/ heat pump.
- A. West facing solar.



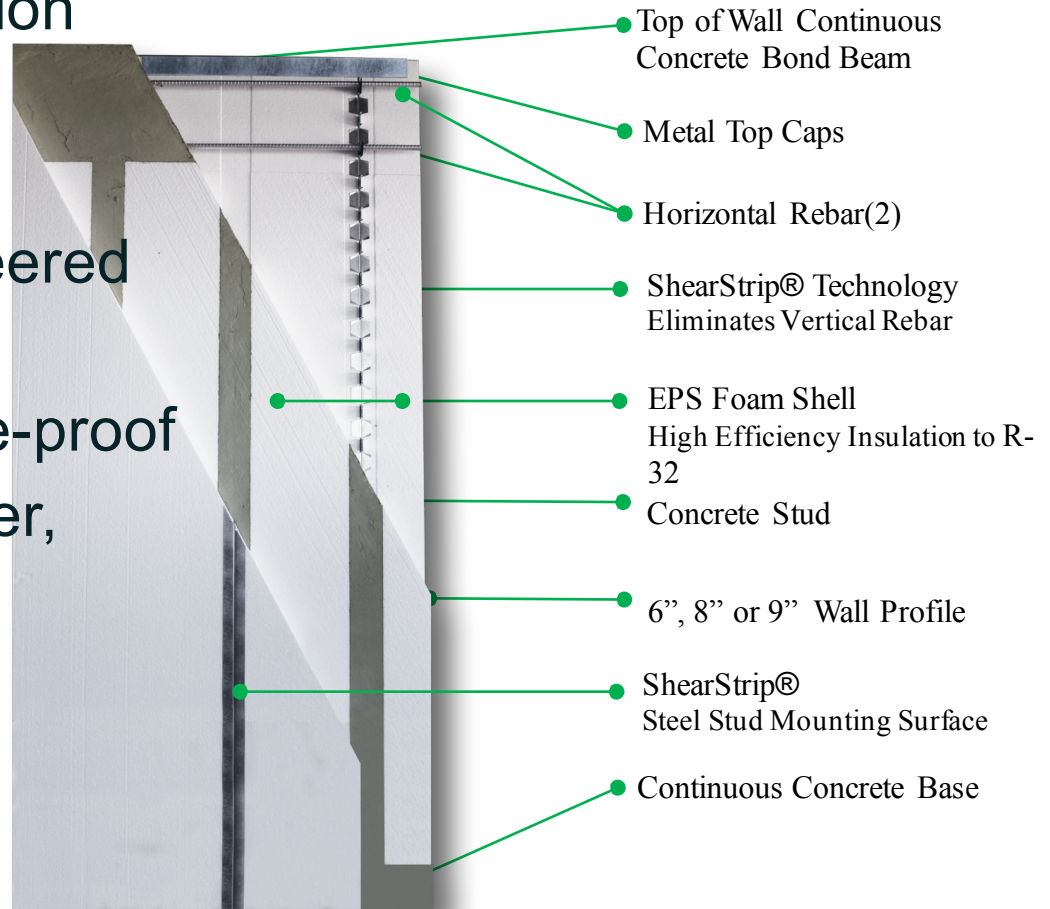
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Insulated Concrete Panels

- ▶ Faster construction
- ▶ Stronger
- ▶ More durable
- ▶ Precision engineered
- ▶ Energy efficient
- ▶ Rot/Mold/Termite-proof
- ▶ Cleaner, Healthier, Safer
- ▶ Quieter

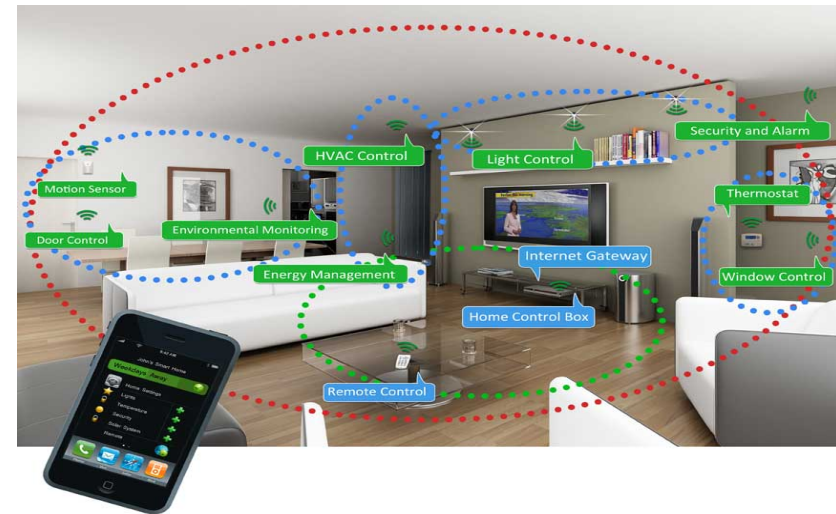


M Connected Home™

AUTOMATION SUITE

Standard with every home:

- Wifi home hub - *Removal of standard Structured Wiring and box*
- Wifi Tstat
- Wifi garage door opener
- Wifi video door bell
- Web enabled front door lock
- Wifi light switches
- Wifi irrigation controller



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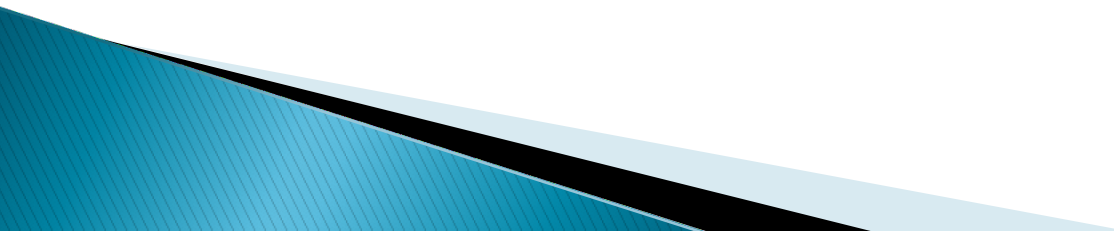
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ReNEWable Home: IBS 2018

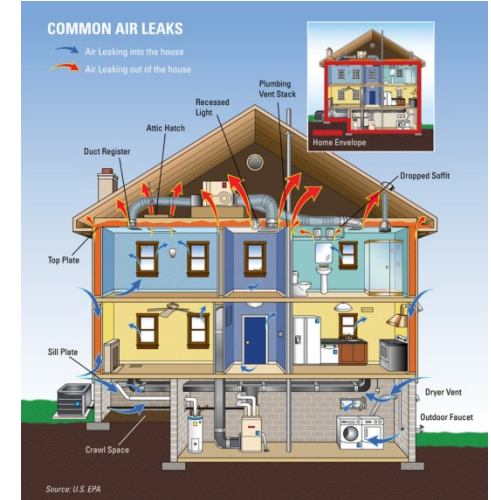
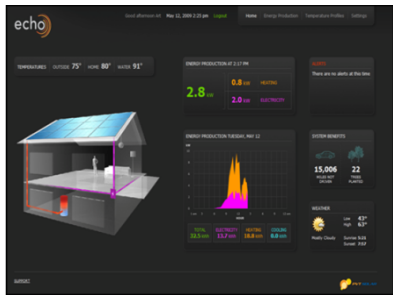
- ▶ Building Innovation
 - Panelization
 - Innovative Materials
- ▶ Technology
 - Home Automation
 - Zero w/ Storage
- ▶ Design
 - Multi-Generational
 - Health
- ▶ **Lower Total Cost**



Change Management

- ▶ Inspiring consumers to pursue their self Interest
 - ▶ Inspiring Builders to incorporate a more holistic value
 - ▶ Aligning Utilities to promote the required change
- 

Buyer Sophistication



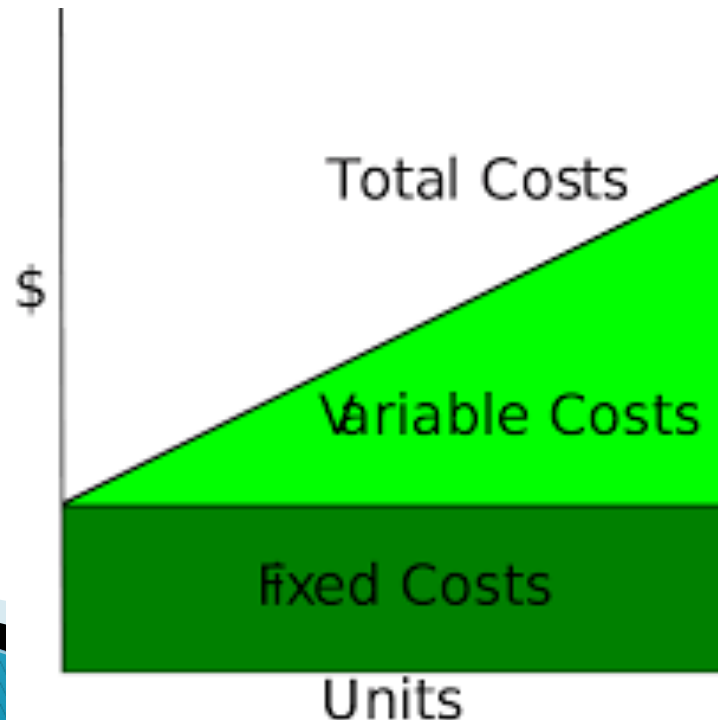
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Improving Choices

- Demonstrating lower total cost
- Leverage lower cost TOU rates



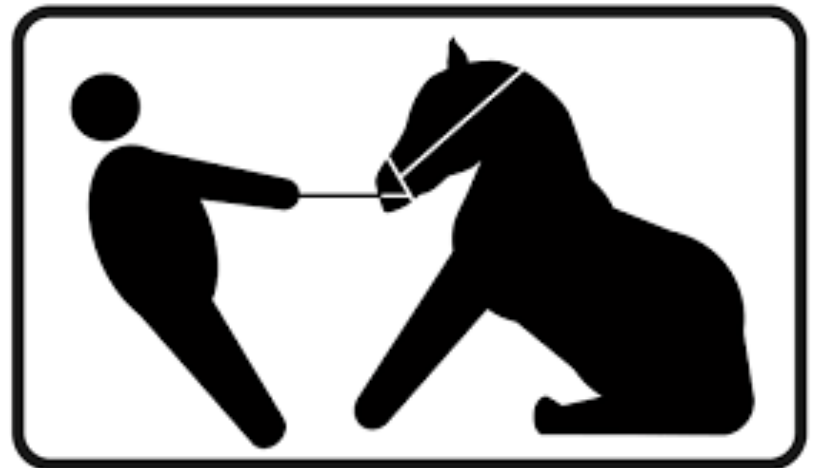
Demonstrating better function

- Comfort
- Dynamic response
- Monitoring



Challenges

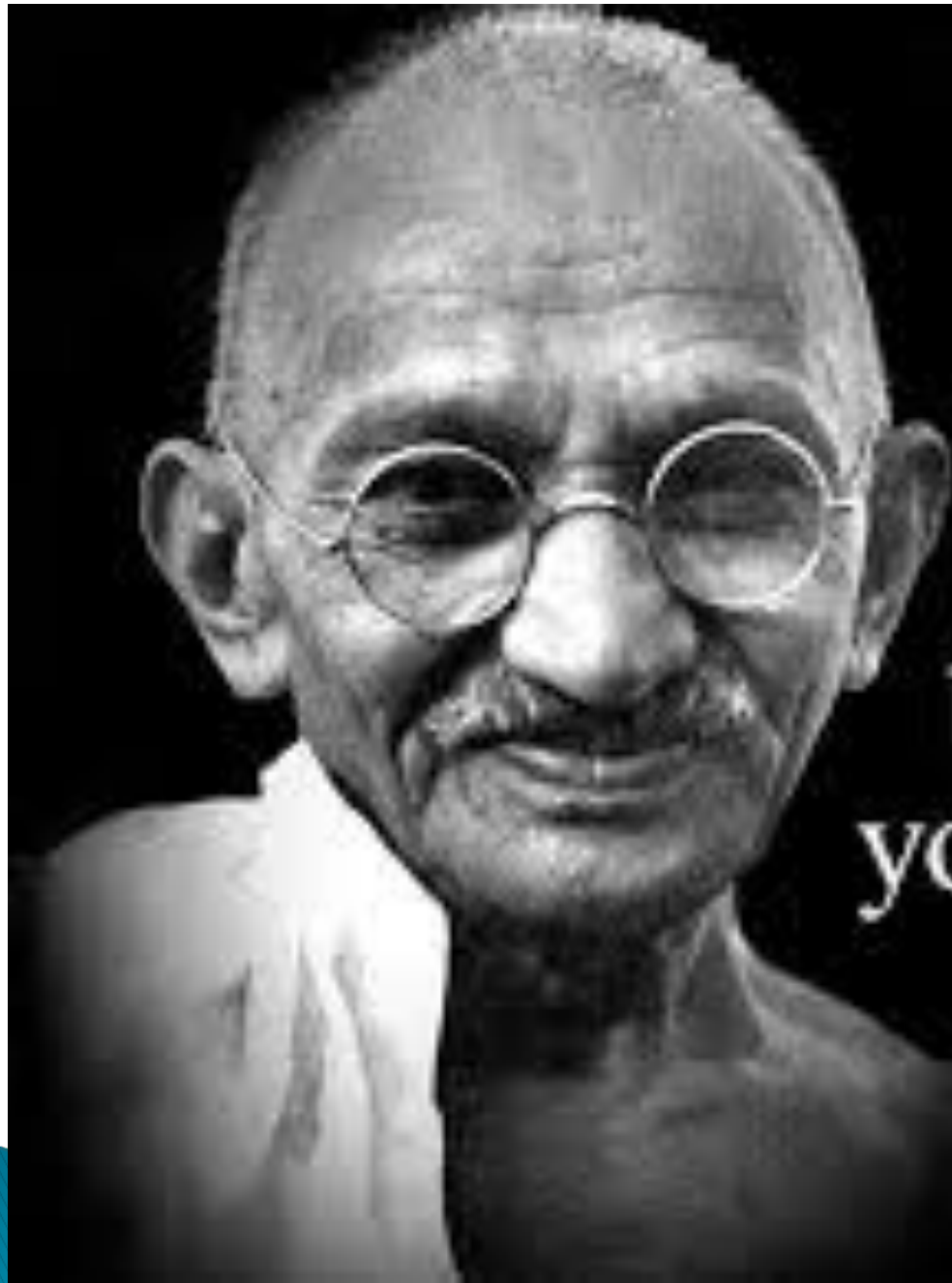
- **Change**
 - **New Supply Chains**
 - **New trade SOW**
 - **Different feels less safe**
- **Cost**
 - **Upfront vs total**



Trusted Expert (that cares)

- ▶ What is the Best Home for my Family?
- ▶ How do I find the Best Builder Partner?
- ▶ How would an Expert Choose among homes choices?
- ▶ How should I evaluate other choices?
- ▶ Will I have made the right choice?





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be the change
you wish to see
in the world.

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