

Optimizing New Constructions for the Internet of Things

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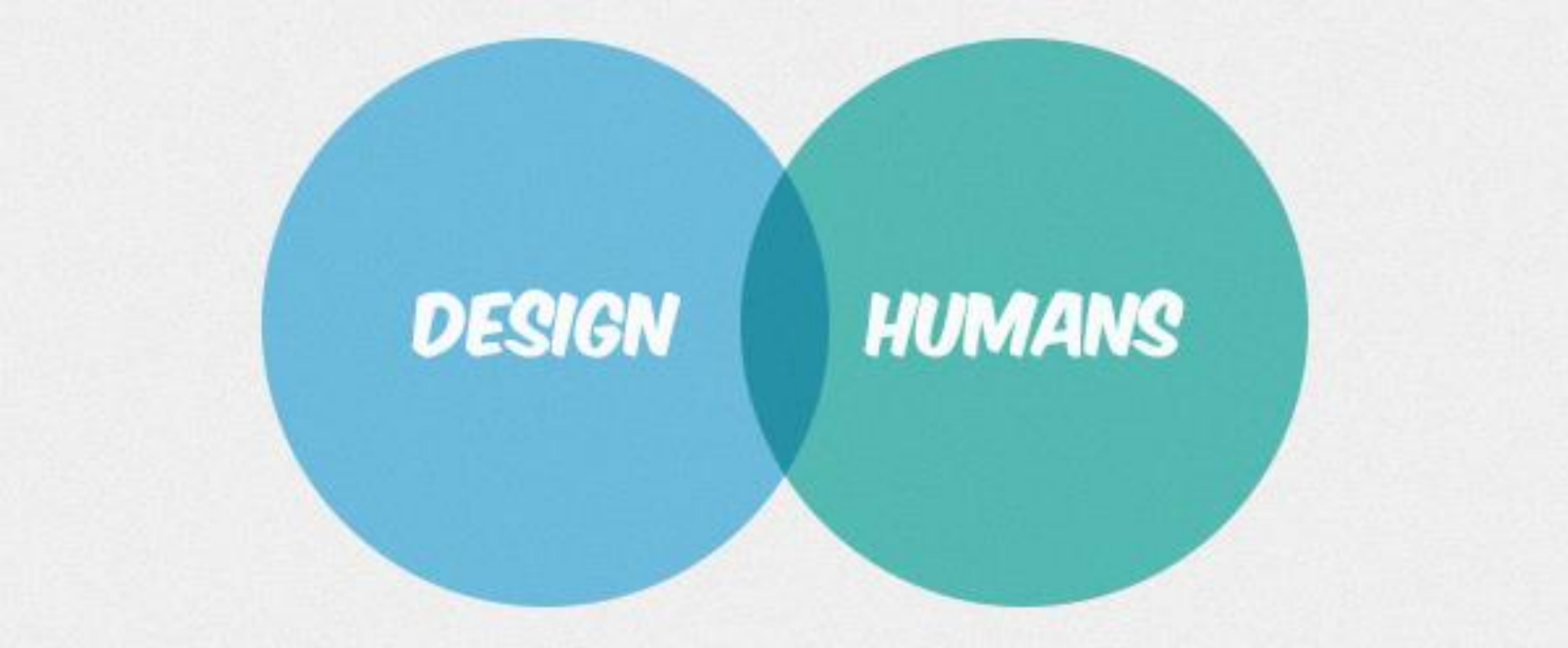
There's No Me in IoT

LESTER SHEN









Human-Centered Design



Empathy

Try



Immersion:
Immerse yourself
in the experience
of others

Ask



Engagement:
Capture what
people say
they do

Look



Observation:
Observe what
people do

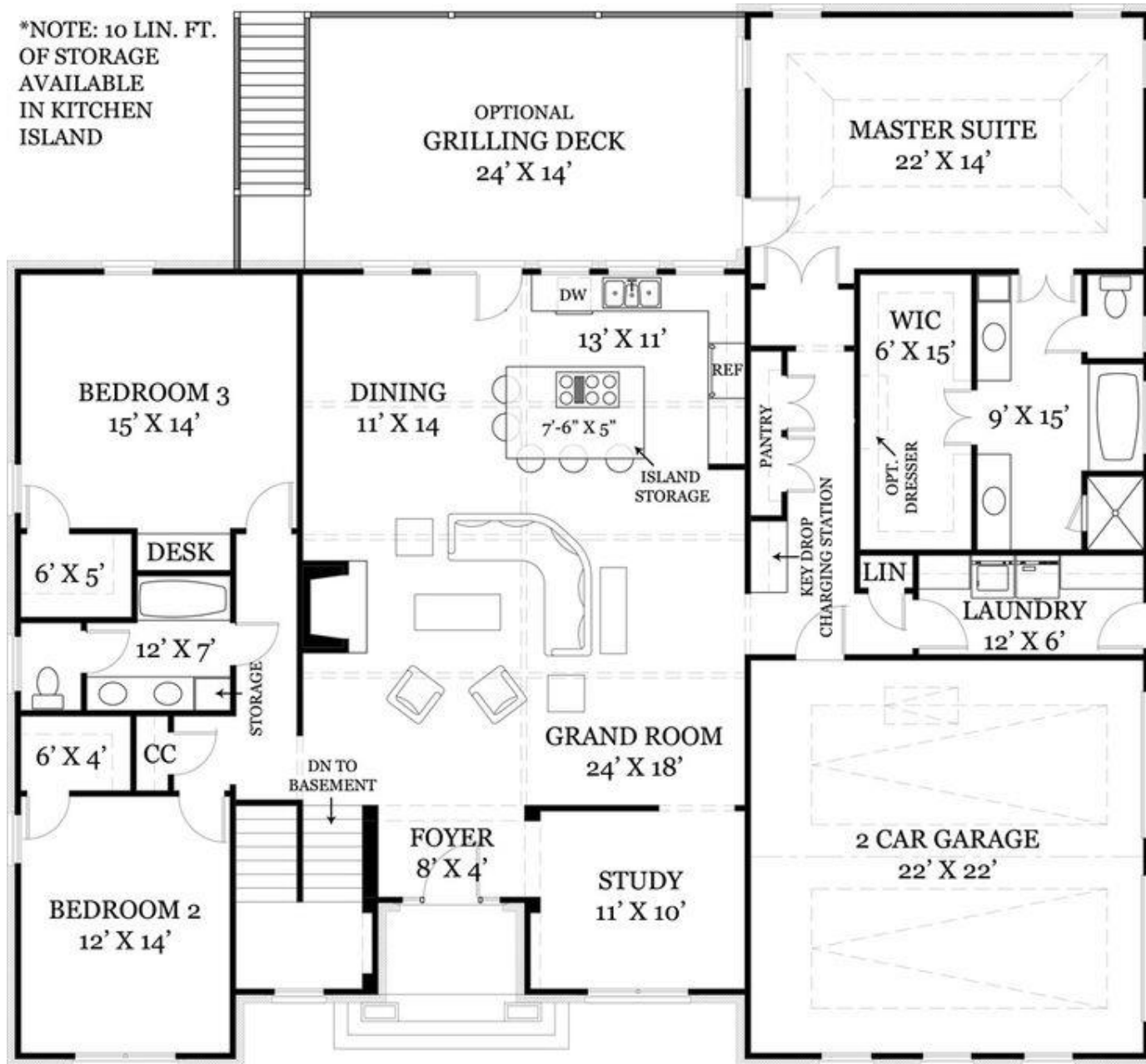








*NOTE: 10 LIN. FT.
OF STORAGE
AVAILABLE
IN KITCHEN
ISLAND

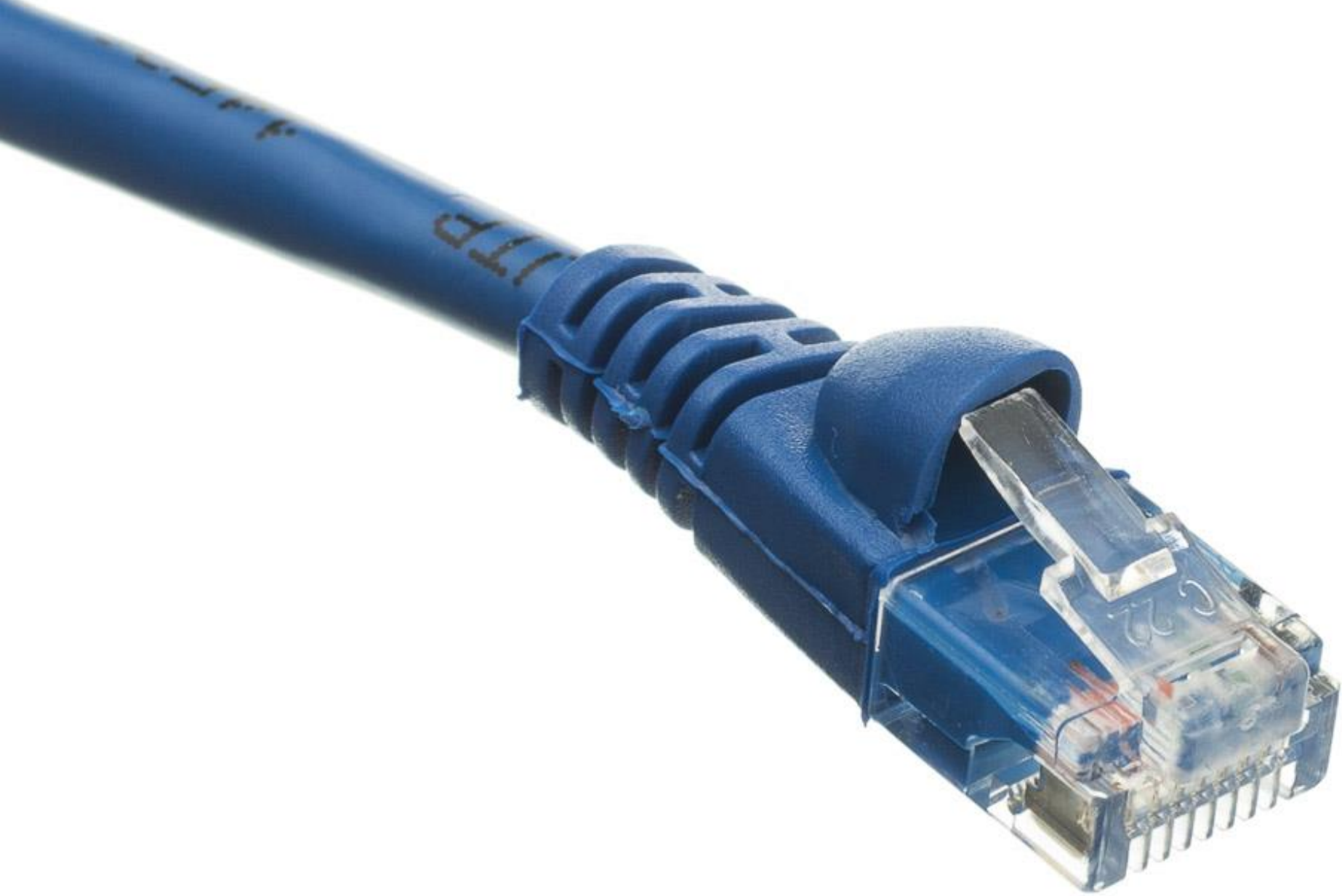






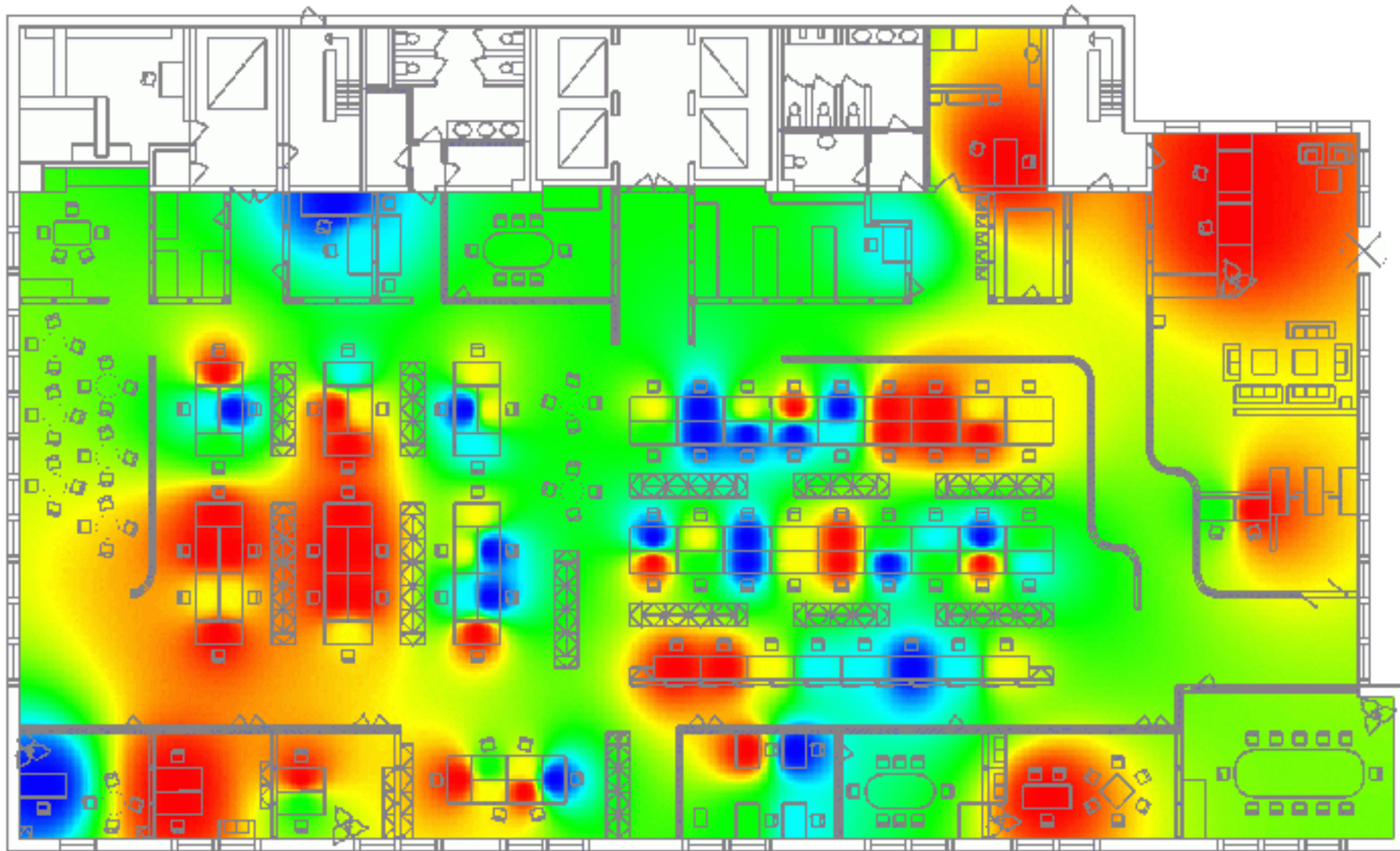












THANK
you!

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Questions?



The Internet of Things



Setting the standard for energy-efficient homes™



About Meritage Homes

Healthier. Cleaner. More Efficient.

Founded in 1985, Meritage Homes builds and sells single-family homes for first-time, move-up, luxury and active adult buyers across the Western, Southern and Southeastern United States.

As the eighth-largest public homebuilder in the United States, Meritage Homes has designed and built more than 100,000 homes in its 31-year history.

The Company has a reputation for its distinctive style, quality construction, and positive customer experience. Meritage Homes is the industry leader in energy-efficient homebuilding and has received the U.S. Environmental Protection Agency's ENERGY STAR Partner of the Year for Sustained Excellence Award every year since 2013 for demonstrating innovation and industry leadership in energy efficient homebuilding.



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How do typical customers buy a home?



CUSTOMER PRIORITIES

- **Location**
- **Price**
- **Floor Plan**
- **?**



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What are our jobs?



What Customers Need

- **Security (Setting and Meeting Expectations)**
 - Is this the best decision?
 - Do I know what the steps are?
- **Safety (Reputation and Trust)**
 - Do we know what we are doing?
 - Do we treat people fairly?
 - Will We fix it if something goes wrong? (Reputation)
- **IS THIS THE BEST HOME?**
 - Value
 - Choices
 - Quality

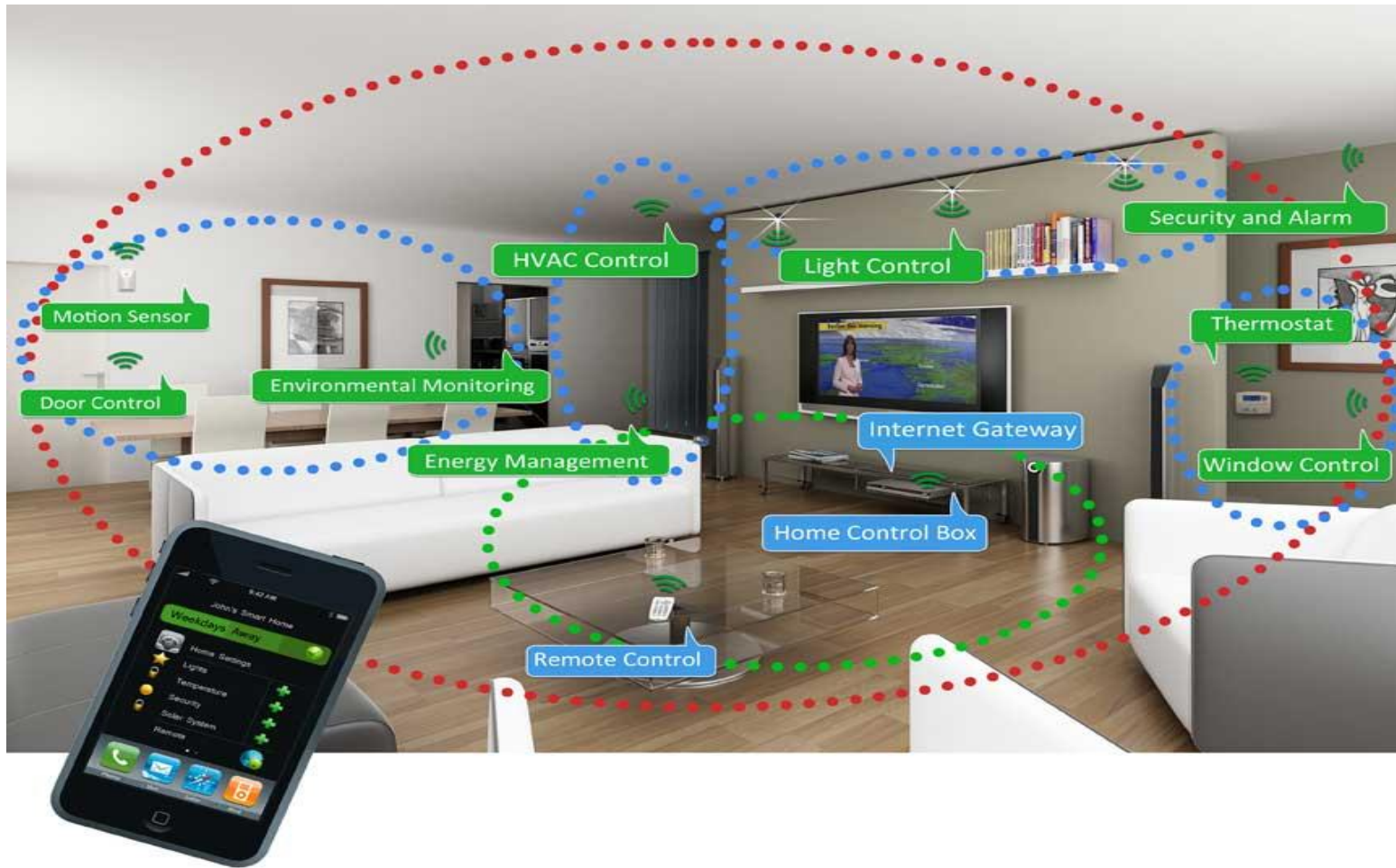
**During 2008, the number of things connected to the Internet exceeded the number of people on Earth.
By 2020, there will be 50 billion connected devices**



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Accessible Home Automation



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WiFi Home Hub



Traditional structured wiring boxes, cabling and jacks can be eliminated or only made available as an option

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Wifi T-stat



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MeritageHomes®

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Remote door locks



kēvo™



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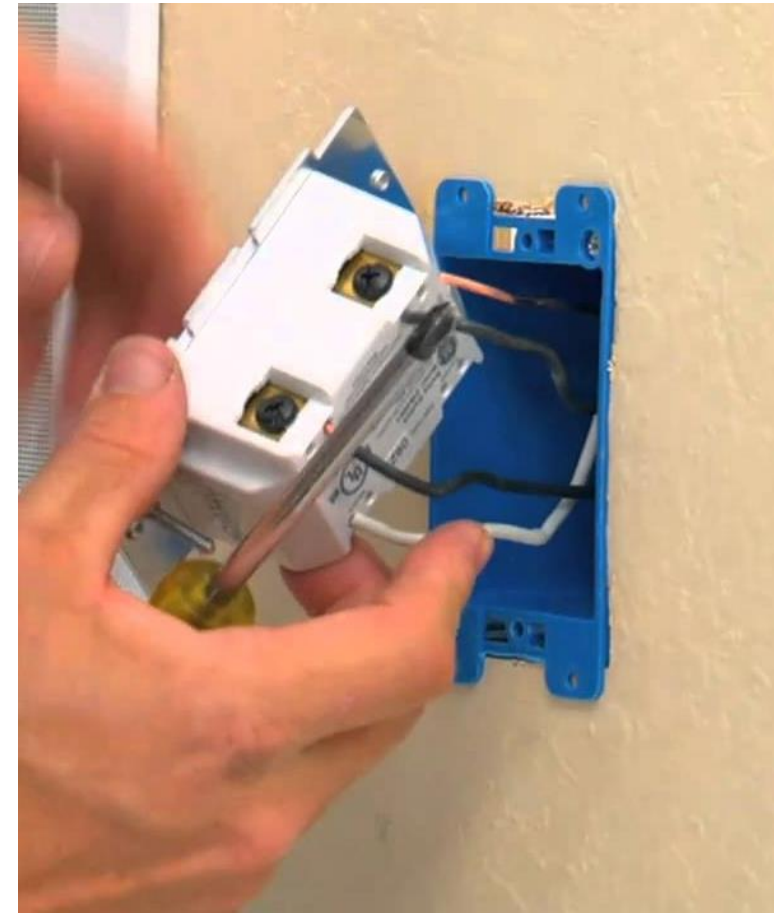
WiFi video



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Wifi light switches



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Wifi Garage Door opener



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Wifi Irrigation



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Creating Change

- Awareness
- Validation
- Evaluation



LIVE BETTER





Questions?

Thank you!

CR Herro

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Setting the standard for energy-efficient homes™

LIFE.
BUILT.
BETTER.



Optimizing New Construction for the Internet of Things

Emerging Technologies Summit
April 21st, 2017





What is coming our way, *kind of like a ...*

... a bit about ecobee

We're on a mission...

We are focused on creating smarter Wi-Fi thermostats that are beautifully designed, easy to use, provide comfort and savings for families and are good for our planet.



What have our Customers told us ...

Comfort

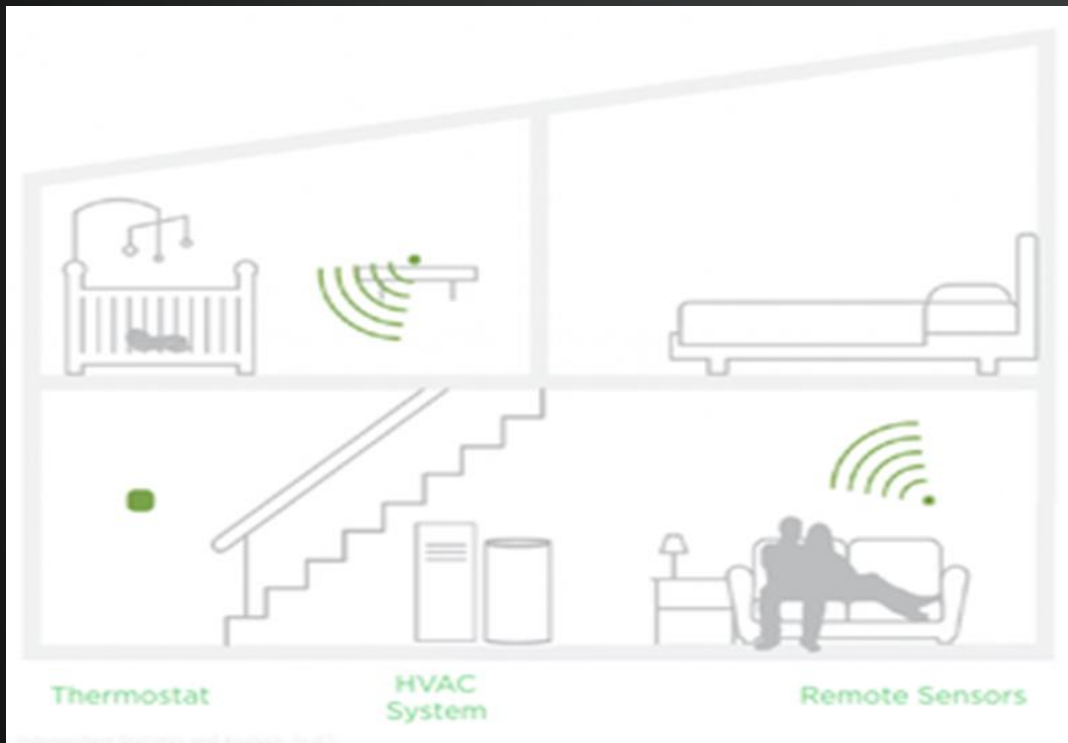
Convenience

Savings

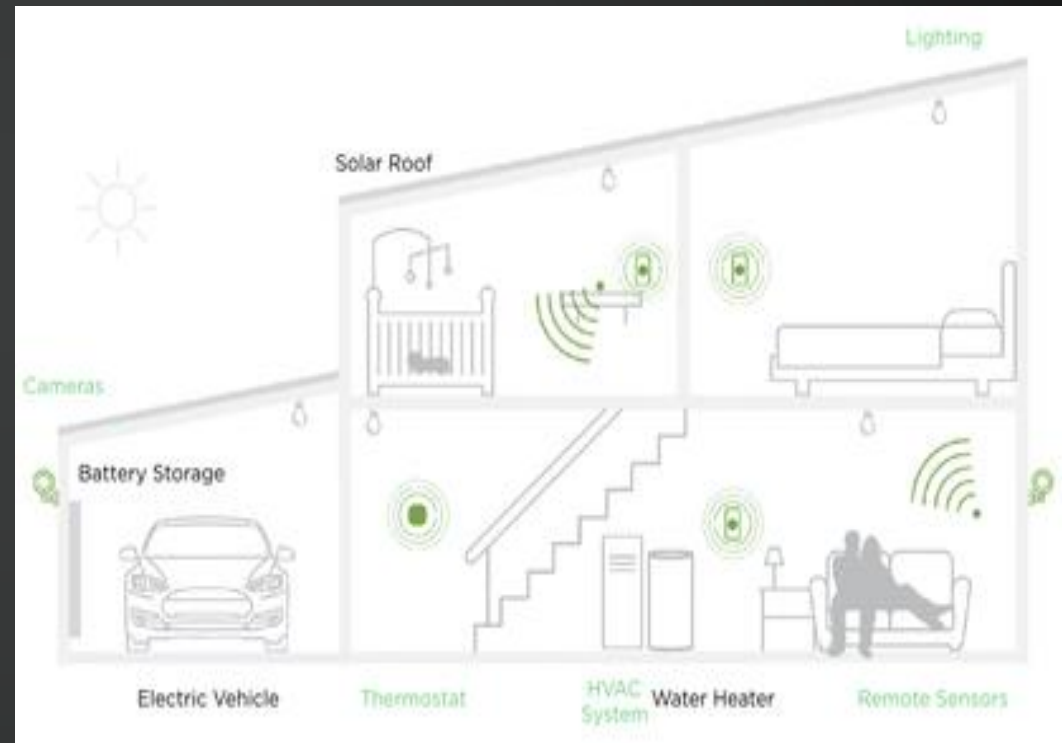


How we view the home ...

Today

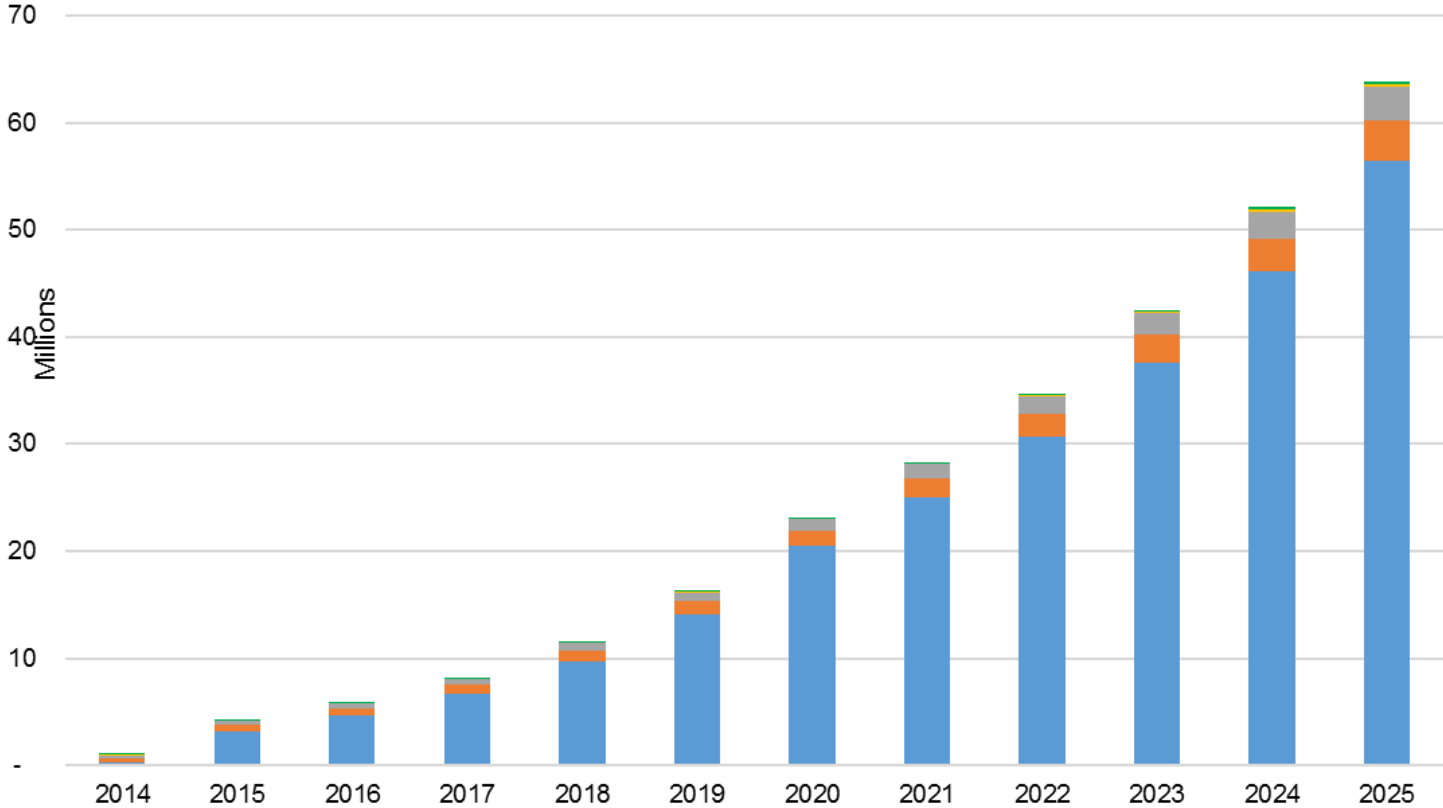


Tomorrow



Are Customers Ready ?

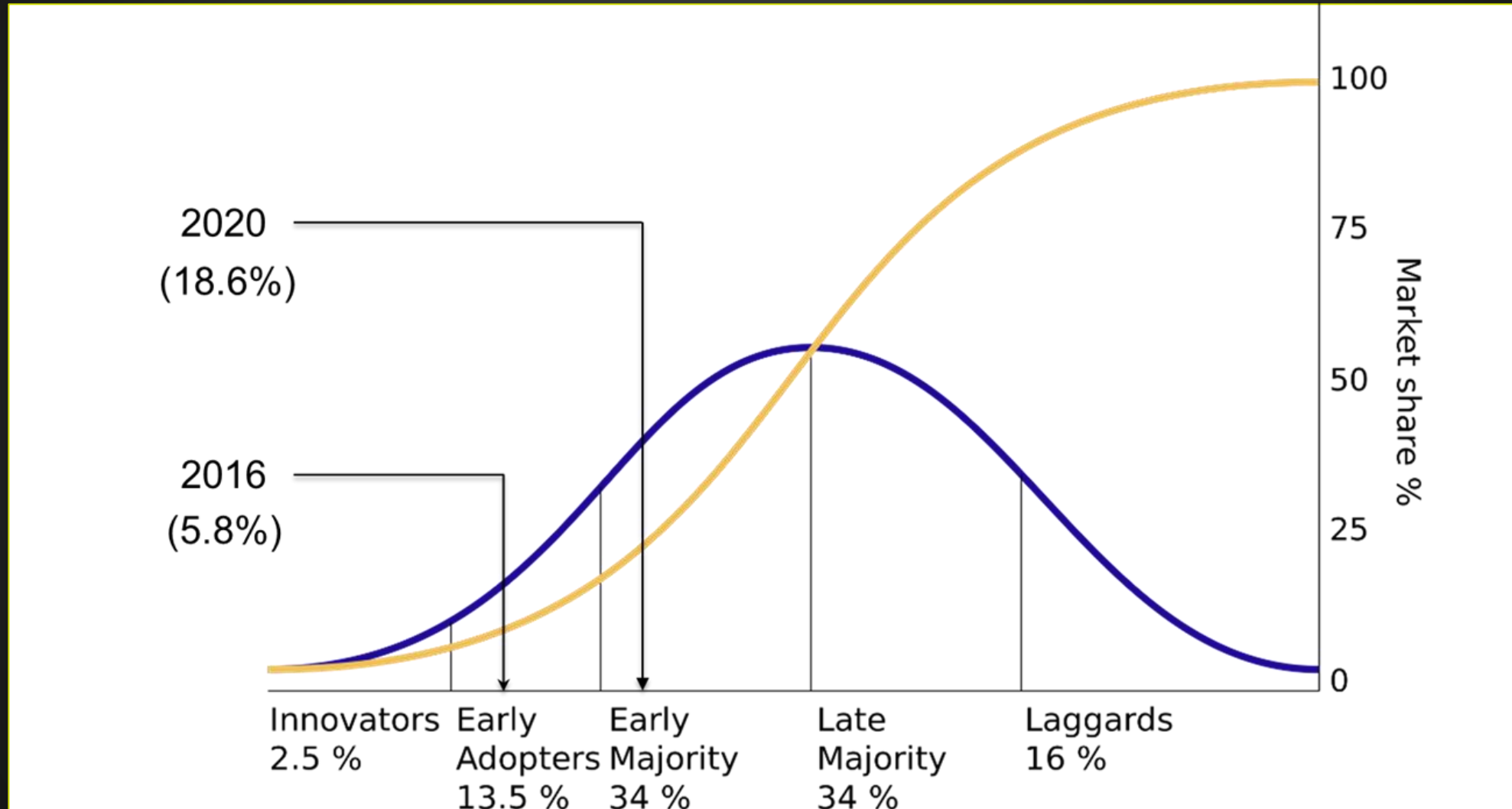
Projected Smart Devices & DERs Nationwide 2014-2025
(Cumulative #)



Smart thermostats Rooftop solar PV Electric vehicles Behind-the-meter storage Smart water heaters



The Customer Base is Evolving ...



Smart/Connected Home

- NAHB research shows that smart home technology including heating/cooling, lighting, appliance control and voice are likely will be common place within a decade.
- 70% of consumers surveyed identified as using at least one form of smart technology today and would like to see more in their next home purchase.
- Builders who can integrate and help consumers navigate this technology will differentiate themselves.
- Security and energy will be the most important to consumers followed closely by entertainment.

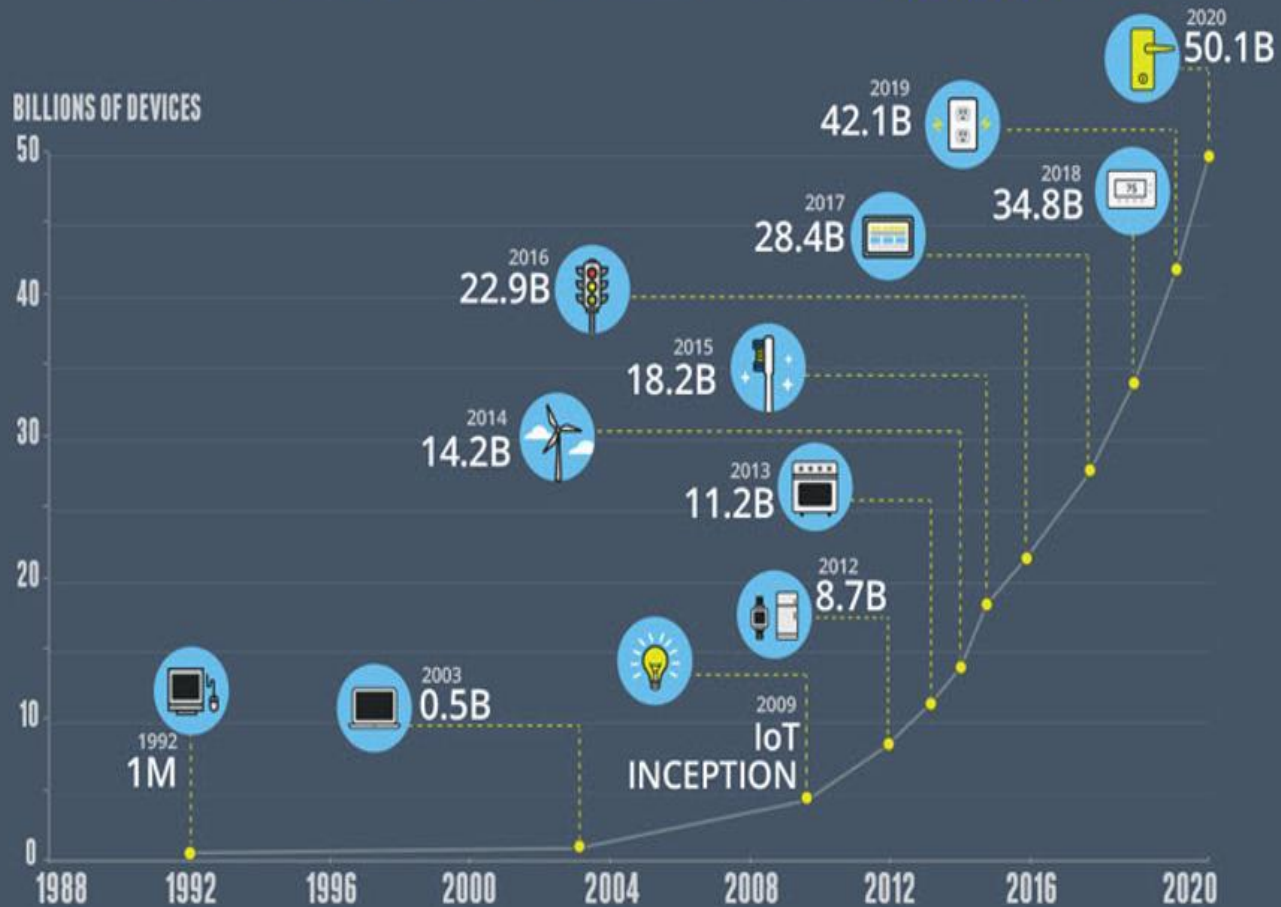


IoT Movement – Connected Home

They are intertwined ...

GROWTH IN THE INTERNET OF THINGS

THE NUMBER OF CONNECTED DEVICES WILL EXCEED **50 BILLION** BY 2020



- Current estimates have IoT adoption between 30-50 billion units by 2020
- This represents approx. \$6 Trillion in spending over the next 5 years
- Every category of products is likely to be effected
- Space is still young and consumers need help to navigate ... great curated, customer experiences ...

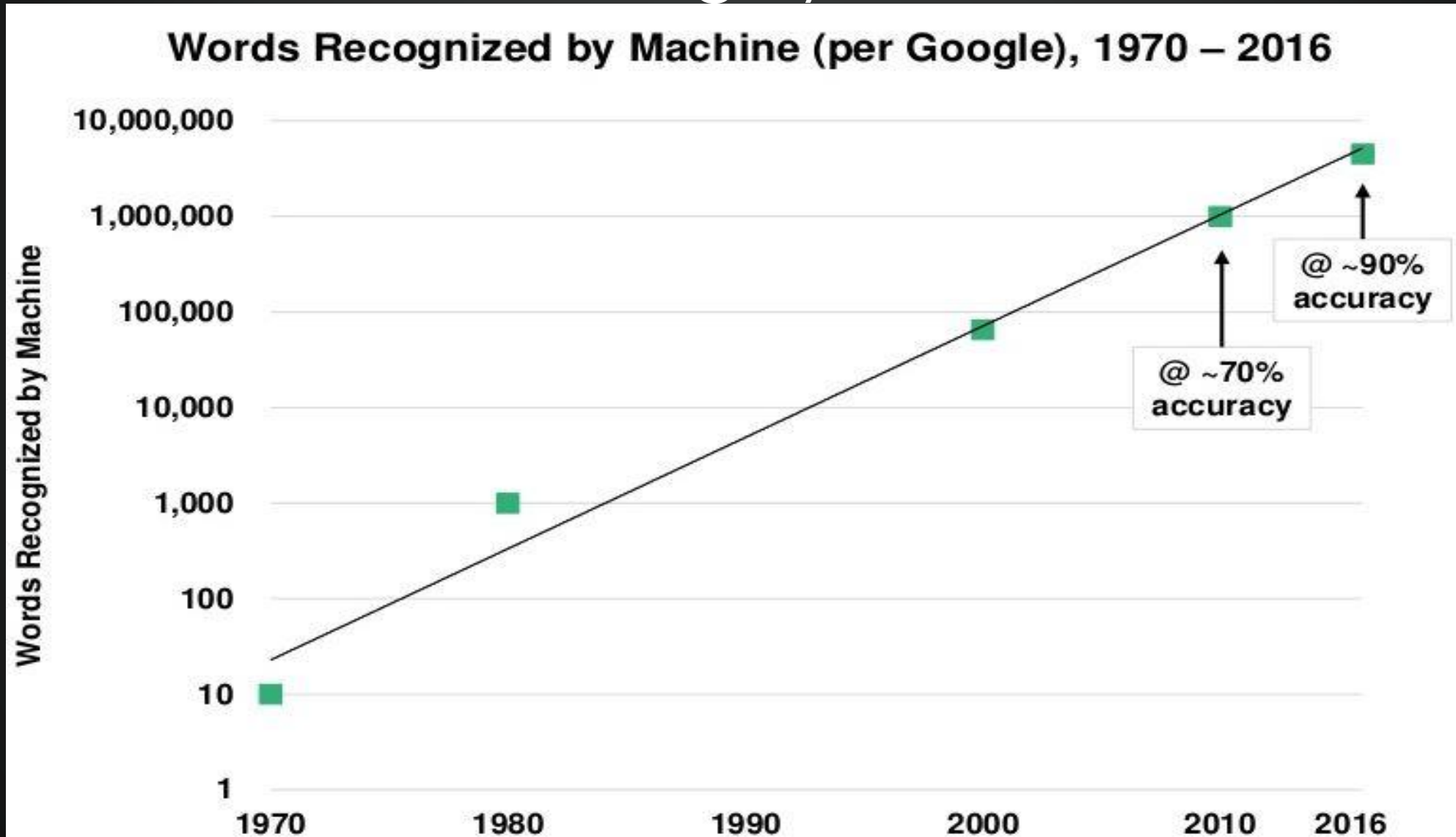


Voice ...

- **It's Fast**
 - Humans can speak 150 words per minute vs. typing 40 words per minute
- **It's Easy**
 - Just speak ... removed (disintermediate) the smart phone
- **It's Context Aware**
 - Ability to understand a wide context of questions base on prior questions/interactions/location/other semantics



Natural Language Understand (NLU) has become highly accurate



The Platform Players ...

amazon alexa

Google Home



 **SAMSUNG**
SmartThings™

IFTTT



Voice is not a fringe technology ...



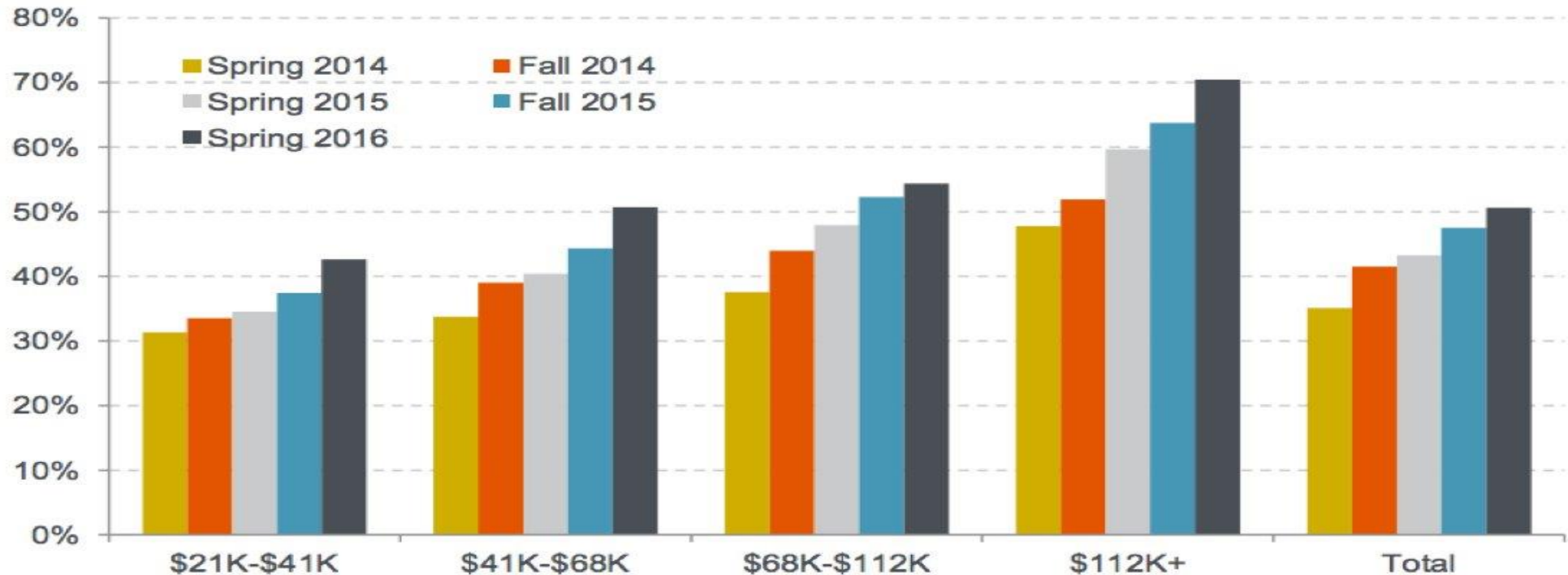
- Amazon is estimated to have sold 11 million Echo devices since 2014
- Current estimates have voice technology under the Alexa platform delivering \$11-12 billion in revenue (ecommerce + device sales) by 2020
- Google made a splash at the end of 2016 with the introduction of Google Home, leading many hailing the start to the “voice arms race”
- All major tech companies including Apple, Microsoft, and Facebook are investing in voice



Amazon US HHLH Penetration

Tech  Chart of the Day

Amazon Prime Membership By Household Income (US)



Optimizing New Constructions for the Internet of Things

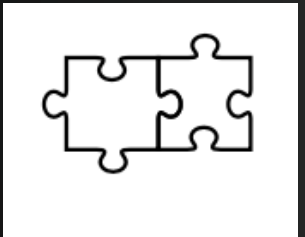
Some Thoughts

Key



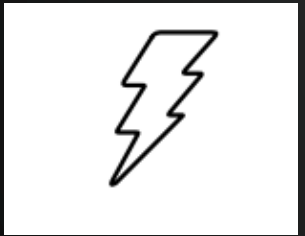
1. Enhanced Energy Savings for Homeowners

- Smart thermostats deliver between 13-23% energy savings over standard programmable thermostat
- Smart thermostats can enhance energy saving technology in new homes (high efficiency HVAC, System Monitoring, etc.)



2. Reaching your target buyer

- Millennials are now the largest in the workforce¹
- 4 in 10 Millennials have identify being interested in smart home products and that number is growing²
- Biggest barrier to adoption includes navigating the infant connected home space
- Builders have the opportunity to add greater value to the buyer and an important role in helping them navigate the connected home space, which can be a key point of difference vs their competition



3. Utility alignment

- Utilities across NA are investing to drive adoption of smart thermostat technology
- Rebate programs in many regions creates strong incentive for builders and homeowner to install
- Increased focus on energy savings and Demand Response programs is going to increase requirement for smart thermostats

1. "Millennials Now Largest Generation in the U.S. Workforce", Time – May 11, 2015
2. NPD- June 23, 2015



It is **ALL** about Great Customer Experience ...





Thank you

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ecobee.com



rainforestTM

a u t o m a t i o n

Monitor and Control Power in Residential Homes

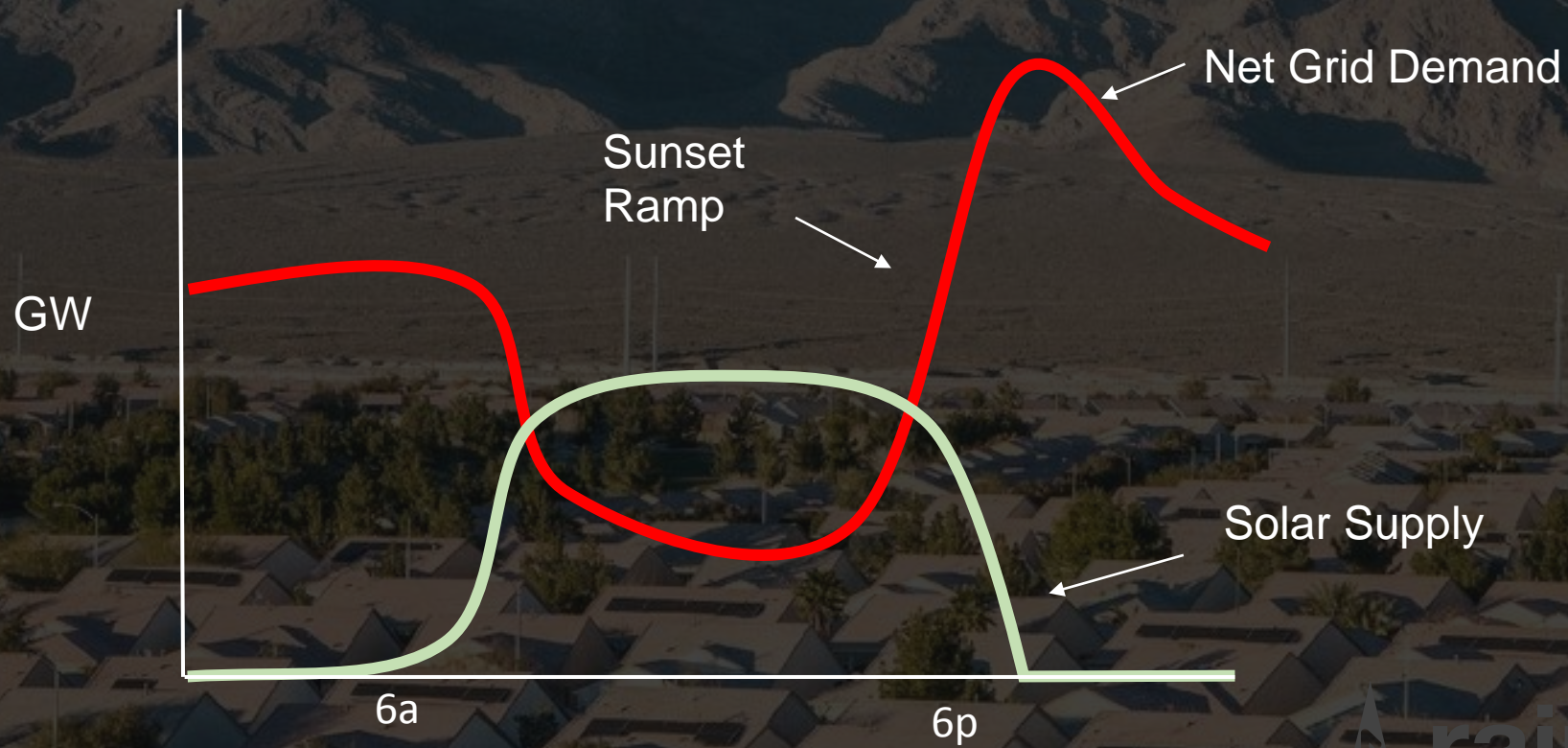
- Smart Meters
- Control Devices
- Solar



HaaS

Home as a Resource

EFFECTS OF SOLAR



RATE CHANGES

- Time of Use
- Demand-based
- Real-Time

RESIDENTIAL RESOURCES



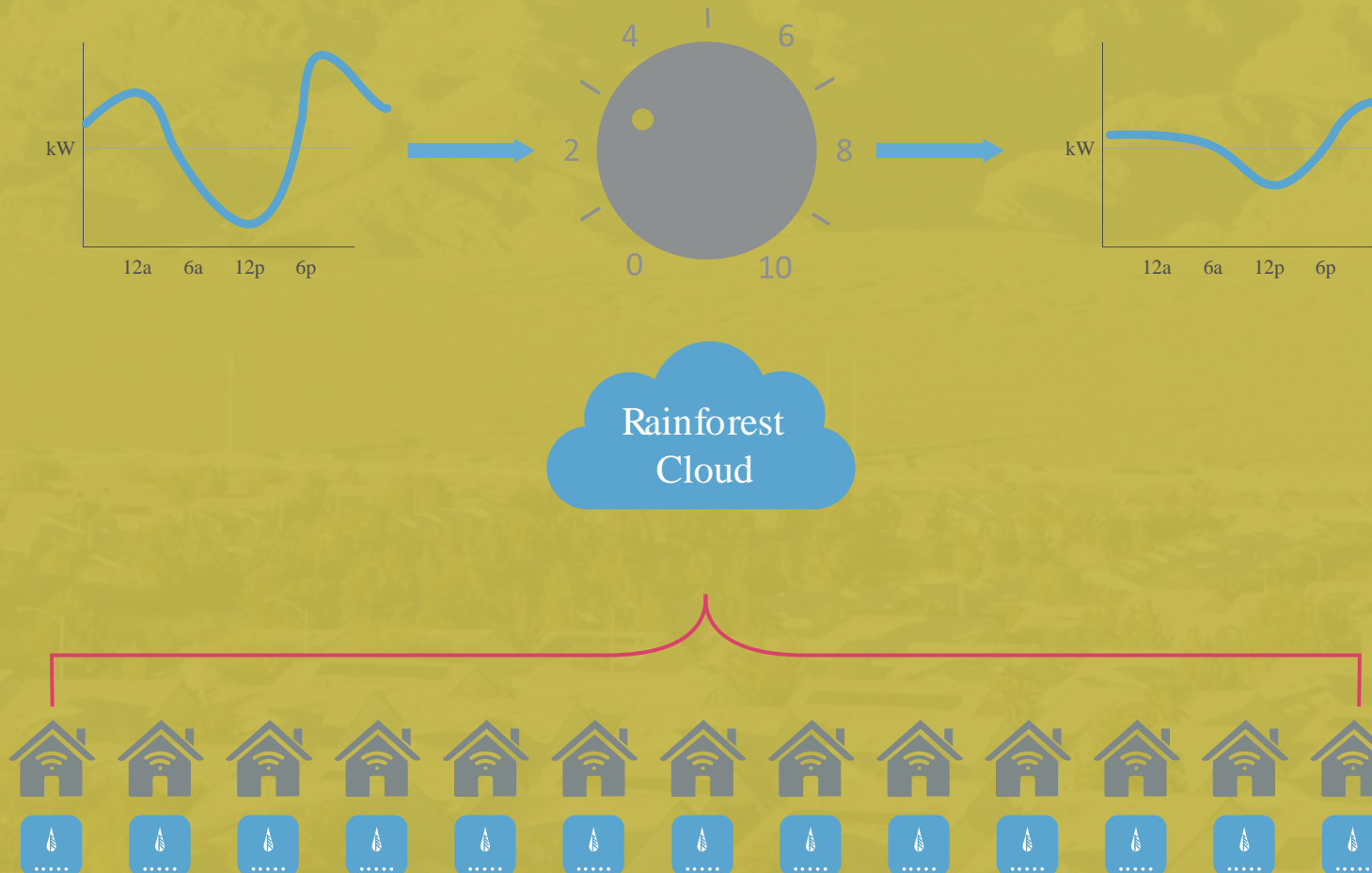
MONITOR



CONTROL



AGGREGATION



AUTOMATION



GENERATE ONGOING REVENUE

- Demand Response
- Automate Demand Optimization



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