The Connected Home:
A Convergence of Trends Holds Implications for Insurers

Casualty Actuaries of New England

Verisk Insurance Solutions

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Today's presenter

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Product Manager

Verisk Insurance Solutions

Agenda

- A convergence of trends
- Implications for insurers
- Where to begin?
- Key takeaways

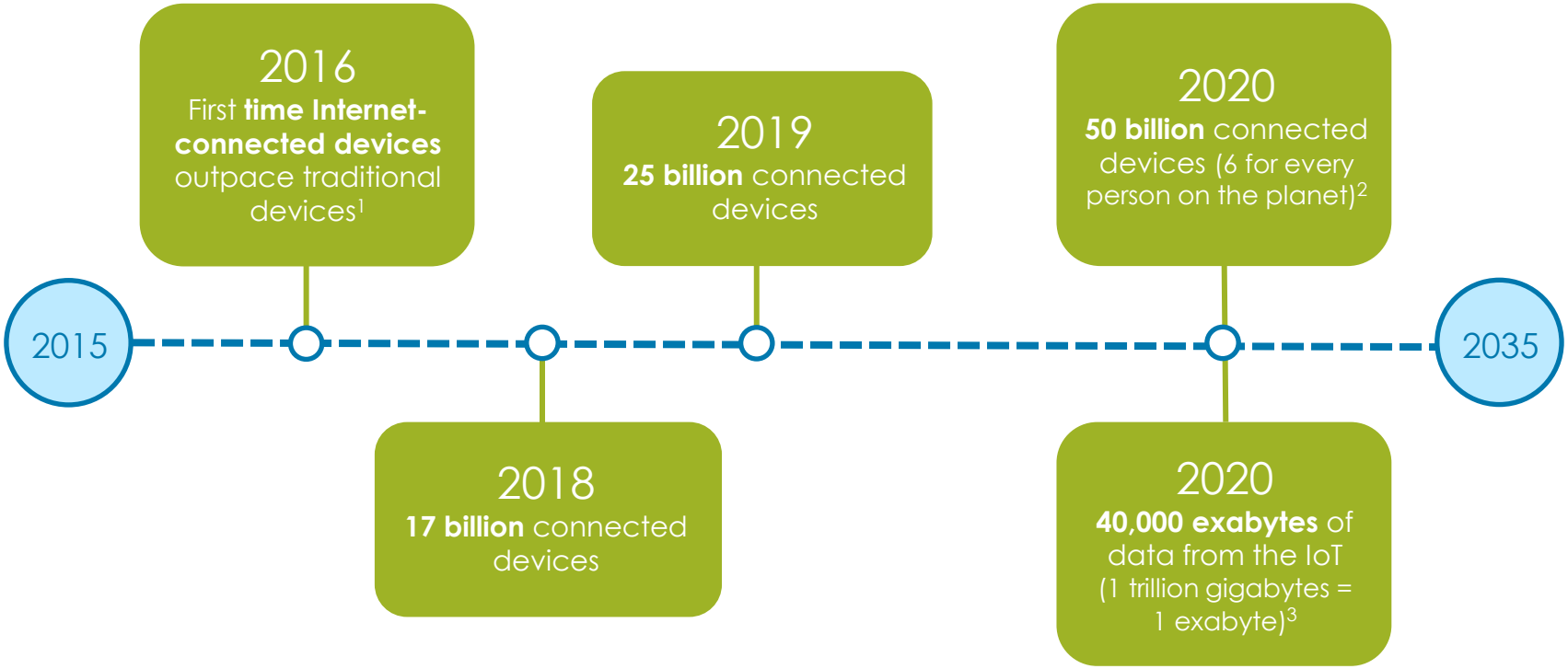
What is the "Internet of Things"?

Internet of Things
(in'tər net·uv·thiŋs)

n. 1. Everyday objects connected to the Internet participating together in a system

2. The convergence of traditional connected devices and "smart" appliances

The Internet of Things: Expected to outpace traditional devices



IoT expected to add $10 – 15 trillion to global GDP over the next 20 years[4]

1 Gartner, IDC, Strategy Analytics, Machina Research, company filings, BI Intelligence estimates
2 Cisco Seize New IoT Opportunities with the Cisco IoT System
3 IDC The Digital Universe, BI Intelligence estimates
4 GE Analyze This: The Industrial Internet by the Numbers & Outcomes

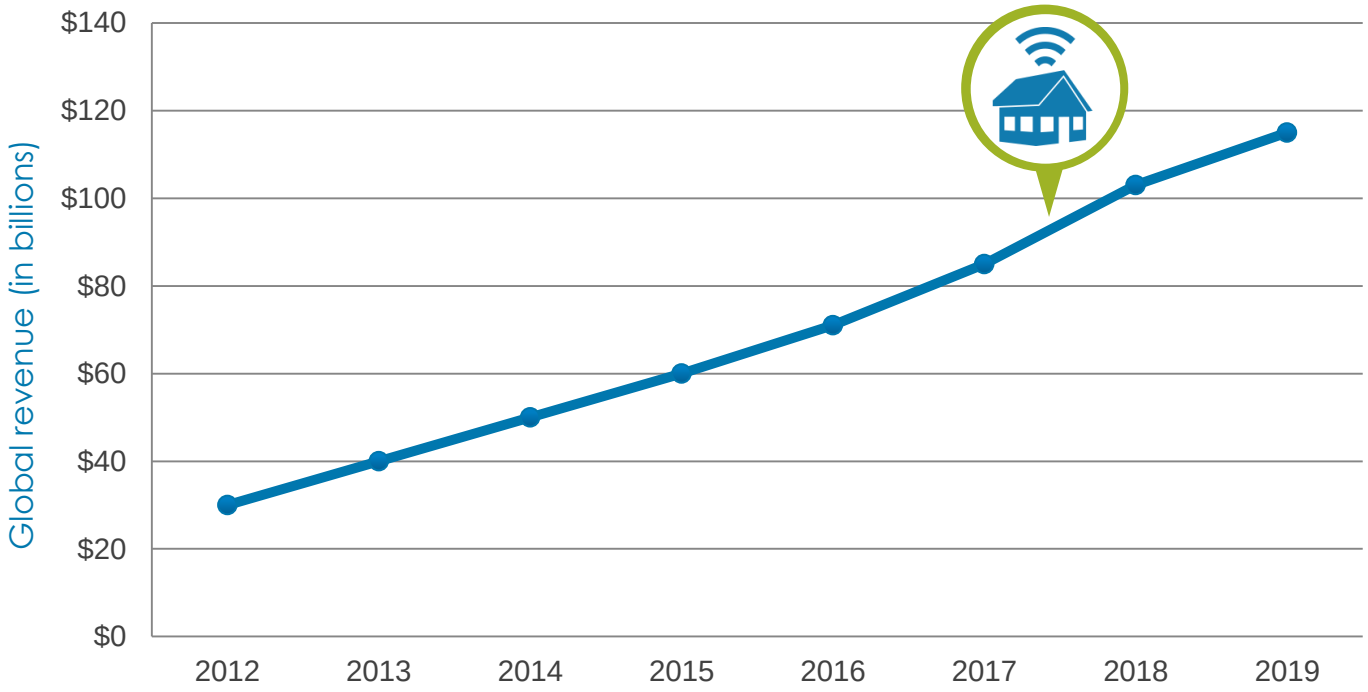
What is the "connected home"?

Connected home
(kə nekt'ed·hōm)

n. A home equipped with electronic devices, such as sensors, appliances, and lighting and heating applications, that are tied to the Internet and controlled remotely via interfaces such as phones or computers

The connected-home market is evolving rapidly

Current and predicted revenue from connected-home-related hardware, services, and installation



Source: Strategy Analytics

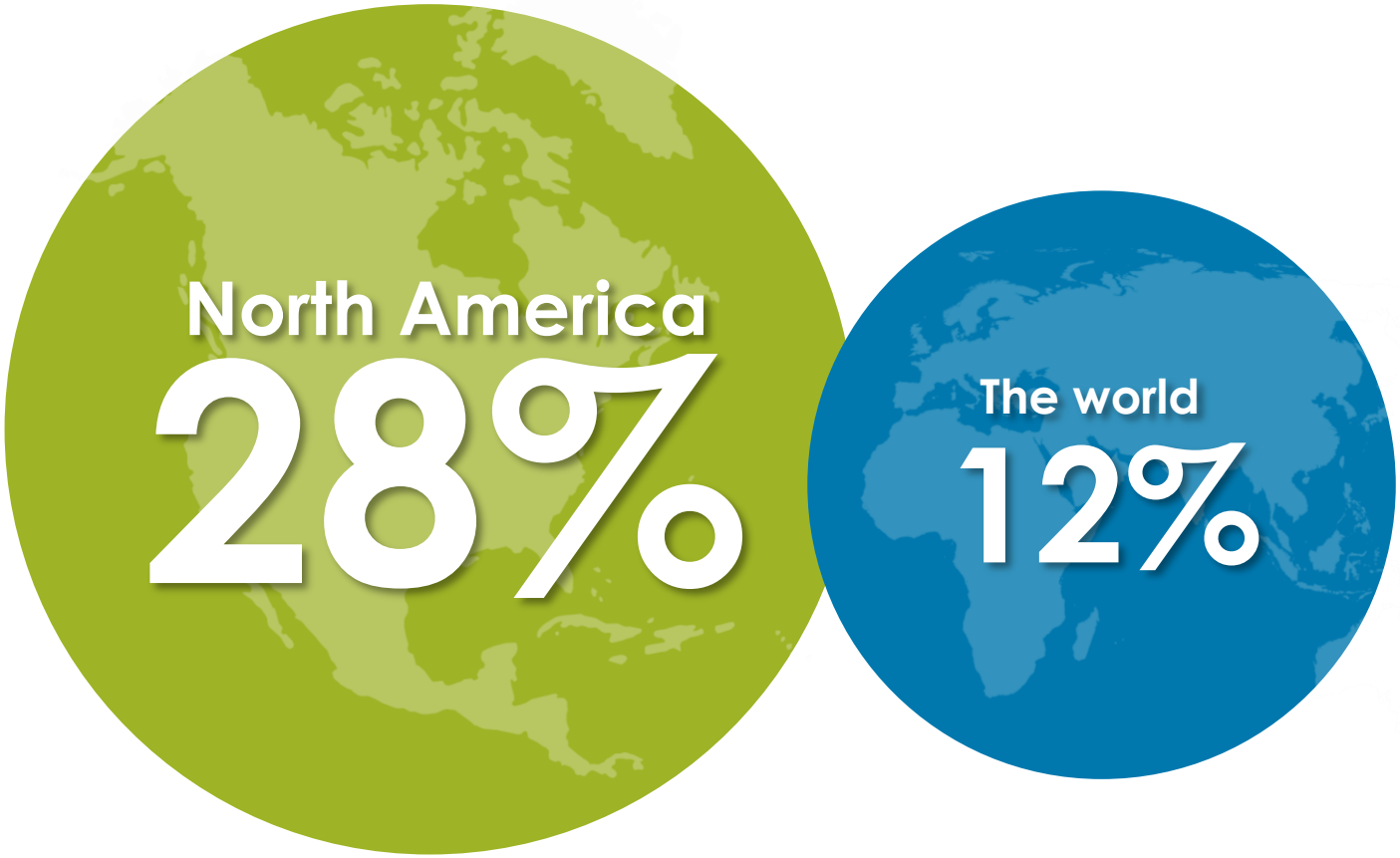
Google
bought Nest for $3.2 billion

Apple
announced HomeKit platform, promising a single service to sync devices

IBM
takes aim at IoT with multibillion-dollar investment

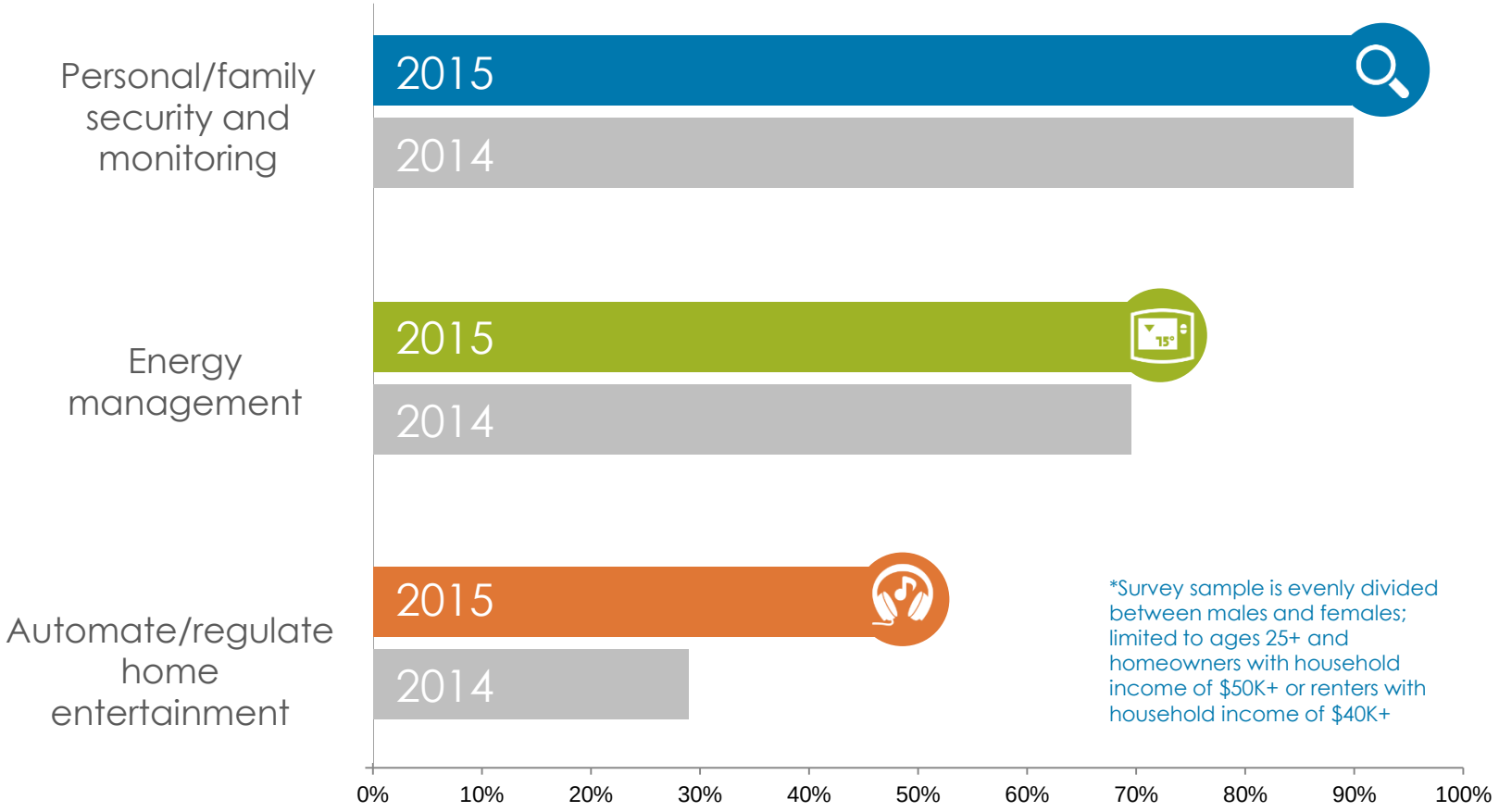
Samsung
purchased SmartThings

North America will evolve faster in Connected-home penetration, reaching 28% of households by the end of the decade



Source: 2019 North American connected-home penetration, Berg Insight; 2019 global connected-home penetration, Strategy Analytics

Top reasons for using a smart-home system: Security remains #1 but entertainment is surging*



*Survey sample is evenly divided between males and females; limited to ages 25+ and homeowners with household income of $50K+ or renters with household income of $40K+

Source: Icontrol Networks, 2014 and 2015 State of the Smart Home

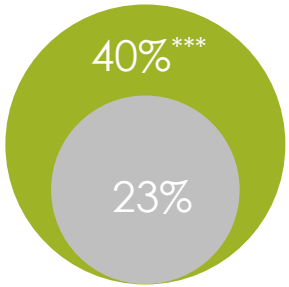
Connected homes excite all ages, although motivations differ

Younger

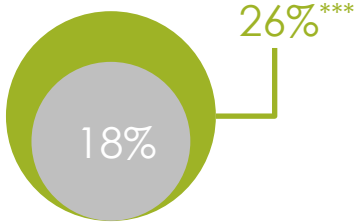
Spend: Between $2,000 and $3000*

Installation: Do it yourself

Productivity



Entertainment



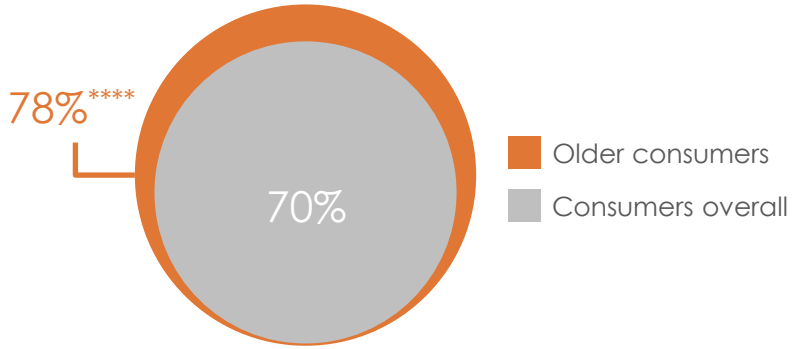
Younger consumers Consumers overall

Older

Spend: Less than $500**

Installation: Do it for me

Energy efficiency/Cost savings



Source: Icontrol Networks, *2015 State of the Smart Home* *ages 45 and younger; **ages 45+; ***ages 25-34; ****ages 55+

Opportunity for insurers

"State Farm Ups Ante on Connected Home Products"
- Insurance Networking News

"USAA has received a patent for a data recorder that can be installed in a home for observation"
- Property Casualty 360

"American Family Insurance explains why it works with Nest"
- Fortune Magazine

"Liberty Mutual starts offering discount for access to customers' smart smoke detectors"
- The Boston Globe

"At Allstate, we have already tested this type of technology with a small group of employees, and we expect that it will become an important tool for managing home-related risks in the future"
- Allstate 2013 Corporate Responsibility Report

Connected homes

Implications for insurers

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Insurance applications for connected-home technology

Distribution and marketing

- Value-added services
- Customer interaction/intimacy

Product, pricing and underwriting

- Segmentation of risk
- Usage-based insurance and telematics
- New products

Claims

- Loss mitigation
- Data-powered claims handling

How are insurers responding to the connected-home opportunity?

Observers

Taking a wait-and-see approach

Early adopters

Offering marketing discounts

Launching small-scale research programs

Forming partnerships to offer mutual discounts on insurance and smart tech

Innovators

5% working on usage-based rating plans*

Investing in smart-home start-ups

Patenting technology

**2014 Verisk/Earnix study*

Key differences between auto and home telematics

Factor	Auto	Home
Ultimate utility	Insurance	Multiple
Customer benefit	Insurance-related	Insurance- and noninsurance-related
Implementation	Standard	Multiple
Device	Standard OBD-II/ one location	Multiple
Data delivery	Cellular	Various/consumer ISP

Homeowners telematics: Data possibilities

Usage

- Patterns of energy and water consumption
- Water running when no occupants are home
- Which rooms are used, when, and for how long?

Occupants

- Occupants: number, frequency of access
- Number of smokers; frequency and time of day of smoking
- Number of connected devices

Contents

- Movement of contents in and out of the house
- Major appliance location
- Sprinkler system detection

Residence

- Roof age and condition; material; weight load
- Wind speed and barometric pressure
- Gas leak detection

Making sense of the data

Predicting market leaders

Venture capital is available for this market, and

start-ups pop up daily.

Big data

Depending on the volume, variety, and velocity of data,

insurers could expect over 10MB of data per household per day.

A complex connected home ecosystem

Identifying sources of data can be difficult when multiple players are involved: hardware manufacturers, platform owners, etc.

Unwieldy and unstructured

Understanding data from multiple sensors and how it correlates to future loss is

a moving target that requires expertise.

Variety of devices

Technology is changing the way we live our lives. Analysts estimate

50 billion devices

will be connected to the Internet by 2020.

Source: Cisco

Security and privacy concerns

- Many devices are general-purpose computers that can be hacked.
- Controllers are vulnerable, too.
- Data and video are subject to security breaches, increasing litigation, and reputational risks.
- Actual cases to date:
  - Reset codes for door locks
  - Lights, cameras hijacked

Regulation

- Regulation is evolving.
- Access to data may require policyholder permission.
- Consent may need to be obtained by both insurers and home automators.
- Collected insurance data will need to protect privacy.
- Start with obvious and nonintrusive sensors.
- Provide discounts.

Connected homes

Where to begin?

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Illustrative connected-home roadmap

An opportunity exists to increase pricing sophistication by leveraging connected-home data

Verify

Use basic data elements from connected homes to systematically verify existence of protective devices at point of sale and renewal.

Expand

Collect a greater variety of connected data across a variety of providers to create to increase segmentation and expand discounts.

Predict

Use real-time connected home data to develop predictive, usage-based insurance models to offer the best price to the best risks.

Actionable insights: A common challenge

How can insurers capitalize on the on the growth of smart-home systems?

Start by collecting data.

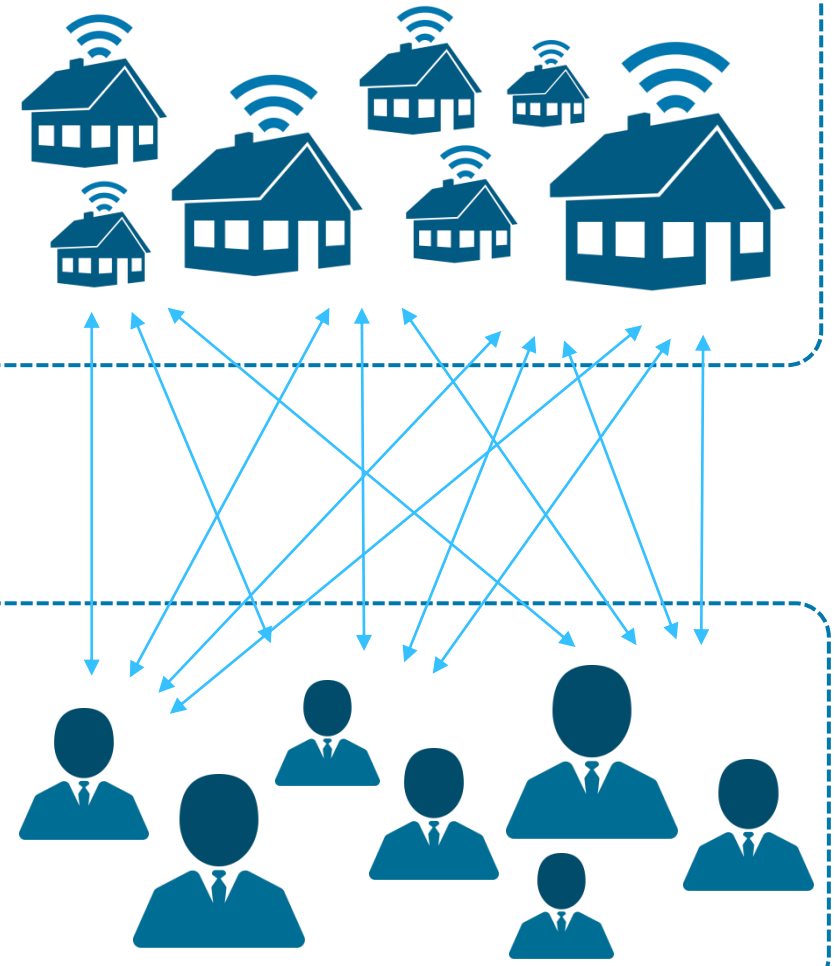
Challenge:

Individual partnerships are likely to result in **insufficient data** to generate actionable insights.

Many-to-many problem

Home Automators:

- Unproven value of insurance industry vertical
- Limited bandwidth to span relationships with multiple insurers
- Only engaged with a fraction of insurance industry, leaving much of the market "untapped"
- Cost-prohibitive to create integration with numerous individual insurers



Insurers:

- Fragmented market — technology winners are TBD
- Data is unfamiliar, unstructured, and inconsistent making insight creation difficult, lengthy and costly
- Inability to systematically validate existence of technology and audit discount eligibility

Verisk Telematics Data Exchange™

Home Automators:

- Provides forum for mass adoption and monetization of data across entire insurance industry
- Provides opportunity for cost-effective integration to insurance industry
- Increases ease of insurance discount application, resulting in increased consumer adoption of tech

Verisk Analytics:

- Brand is an established and well-known insurance industry leader
- Pioneer and market leader of similar data exchanges for other products and markets (auto telematics, public record data, etc.)
- Independent party facilitating data use

Insurers:

- Access to more data from more companies
- Data is provided in normalized, consumable format for accelerated analysis
- Minimizes the IT costs associated with building several independent integrations with home automators
- Focus more time on generating insights and less time on brokering new relationships

Final considerations

What should I keep in mind?

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Key takeaways

1. Connected-home technology creates consumer benefits that extend beyond insurance
2. Because of the complexities and threat of adverse selection, get involved early
3. The market is evolving faster than insurers are entering this space, and many will have difficulty catching up
4. Seek partnerships that will provide access to greatest variety and volume of data
5. Start with simple uses of connected-home data and expand as the market grows

Thank you.
Questions?

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