Canadian Consumers: Smart home and the Connected life

The Quest for Whole Home IoT

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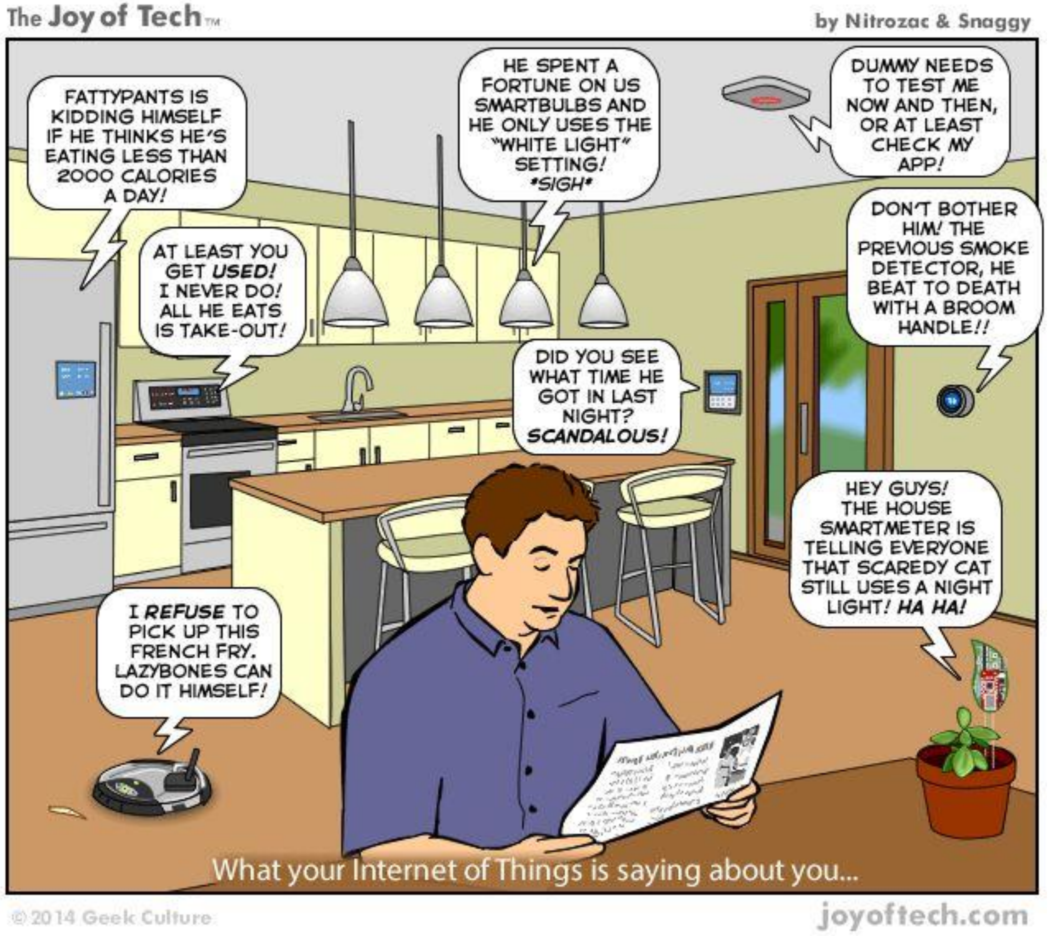
The Quest for Whole Home IoT



Agenda

- Consumer and their connected life journey
- Buyer behavior and preferences
- Forecasted growth - Connected device installed base
- Current state of smart home
- The managed service opportunity
- Smart assistant – Another piece of the puzzle
- Essential guidance (key takeaways)

The Connected Journey – Augmented Humanity

Augmenting Humanity

Tech integrated with our bodies
"Augmented Humanity" (senses, cognition, motion…)
"Apps" = code + neural signals
Interface is invisible

Direct Neural Interface

Embedded

Tech on our bodies, in appliances
AI-enhanced, cloud-enabled "services"
Continuously learning, updating
Touch, voice and gesture interface

Connected Appliances

Tech in our pockets
Mobile apps by the millions
Ubiquitous distribution via cloud
Touch interface

Wearables / ARVR

Phone

Tech in front office and home
Client/server apps explode
Expanded distribution via channel
Graphical user interface

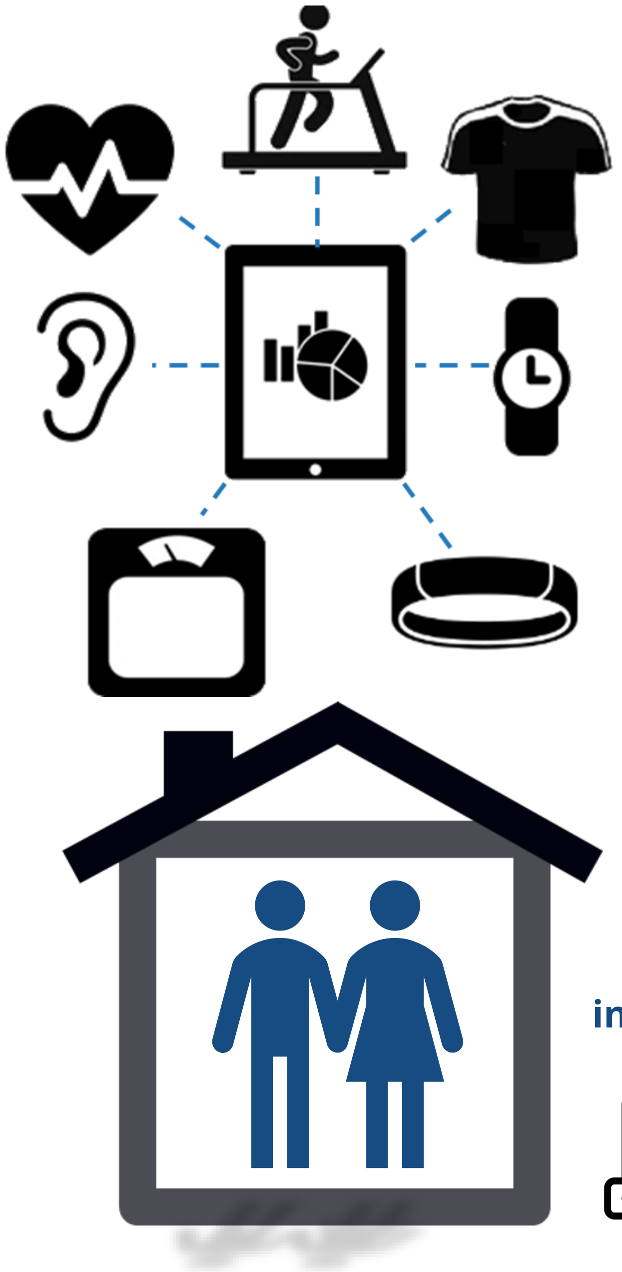
Laptop

Desktop

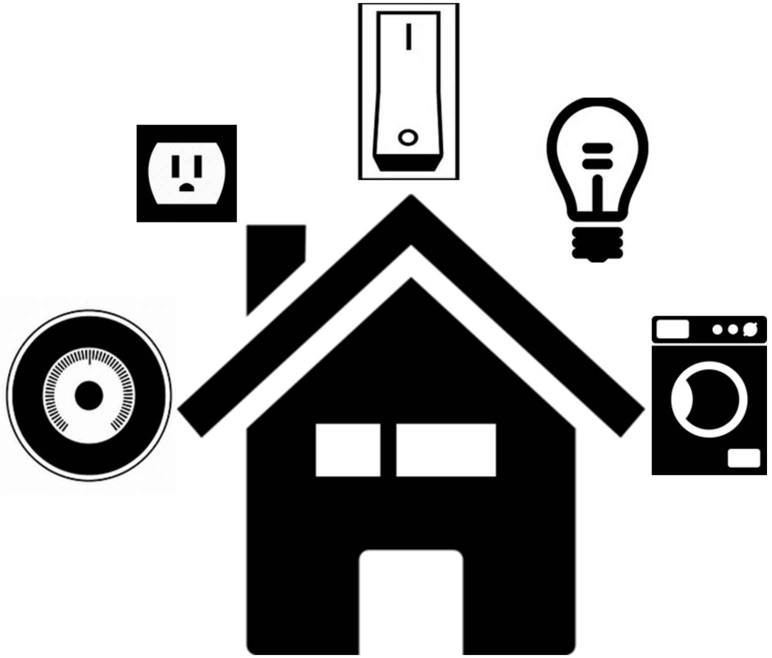
Mainframe

1964 — 2007 — TODAY — 2030+

Personal Health & Fitness

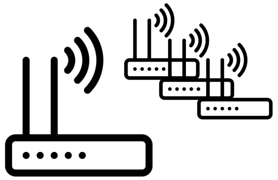


Home Automation



Home Security

Network infrastructure



Personal Health & Fitness

Examples include:

Smartwatches, fitness trackers, kidney monitors, cardiac monitors, insulin pumps, smart scales, smart clothes, smart gym equipment

What problem does this solve?

- Track and record fitness activities and health at an individual level.
- Allows consumers to monitor their wellness independently

Value Proposition

- Improve quality of life
- Create personal *'benchmarks* for health and wellness
- Consolidated view of individual health information
- Dynamic control of ambient environment in the home

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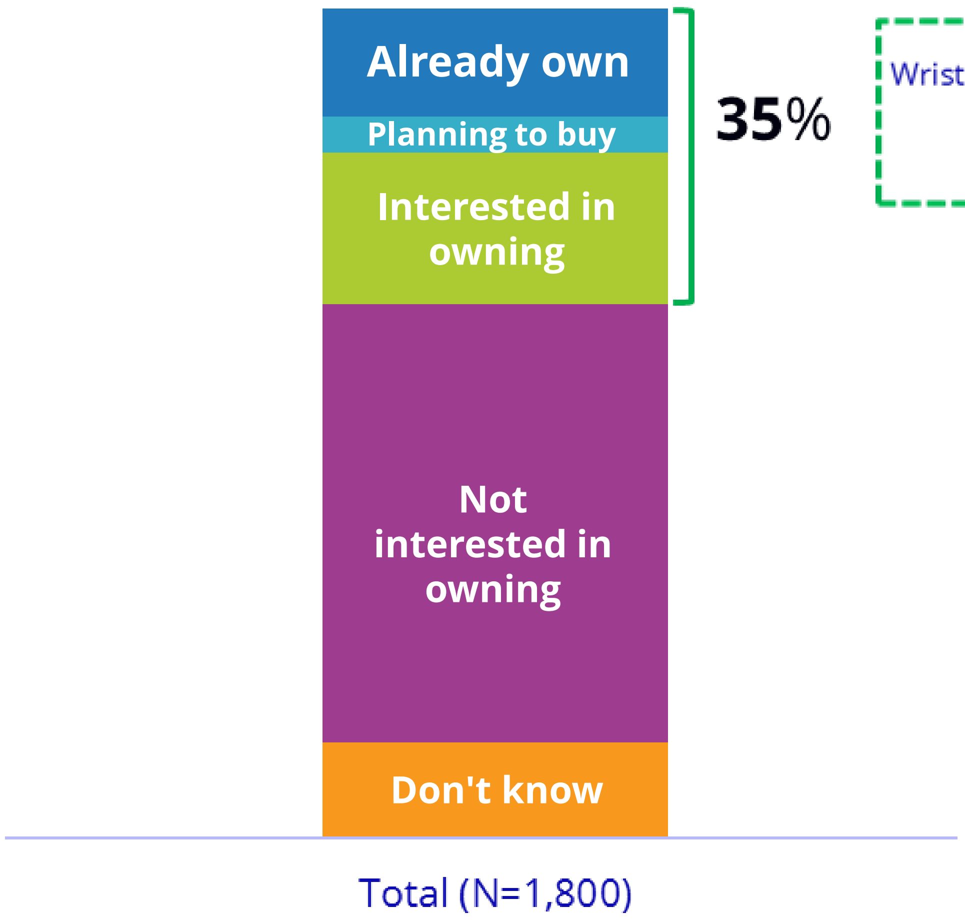
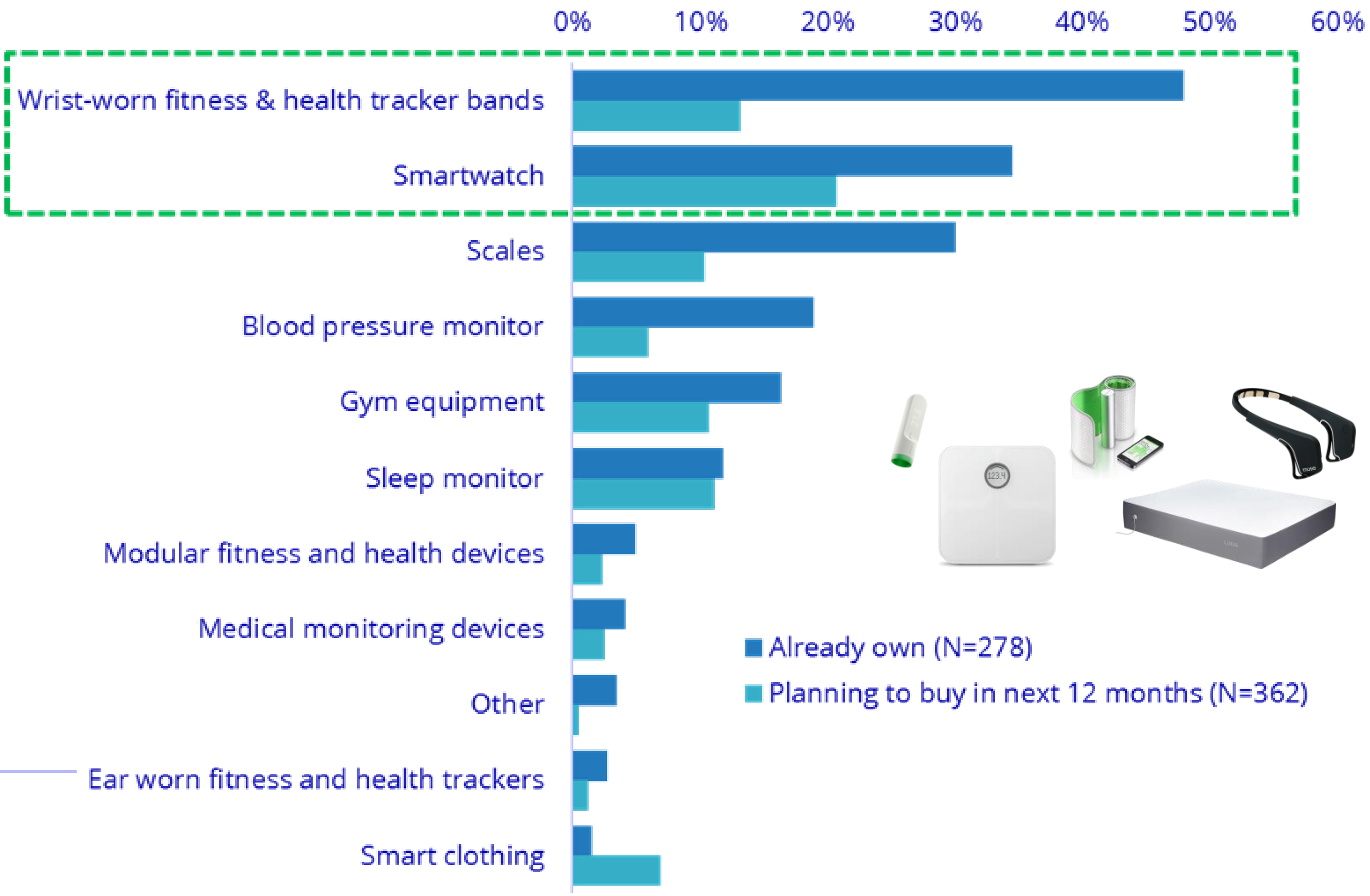
Ownership of connected personal health and fitness devices is high

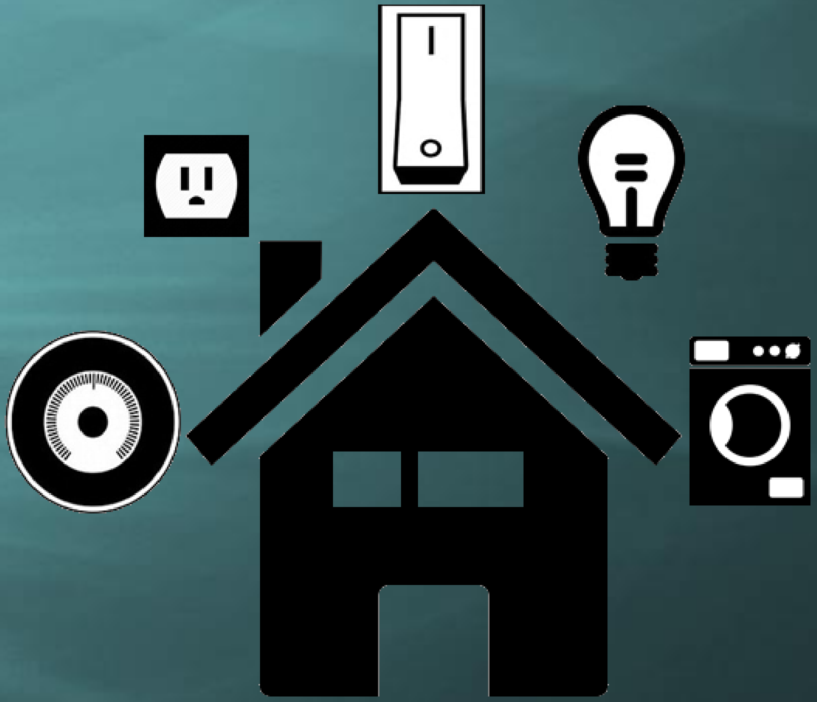


Personal health devices: ownership and plans to purchase by device type



Source: IDC Canada n3 Consumer Survey, October 2017.

Home Automation



Examples include:

Thermostats, home appliances, smart light bulbs, plug, smart home hubs, etc.

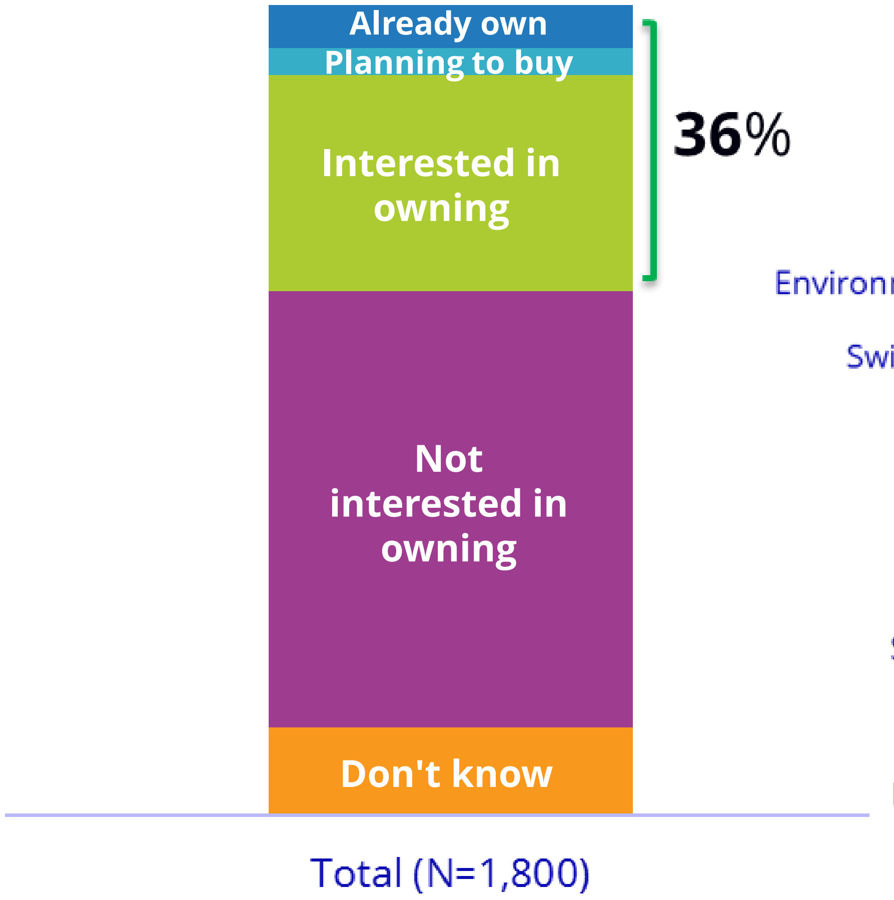
What problem does this solve?

- Provides functionality previously not available.
- *Improved* functionality not previously offered
- Regulate energy use dynamically
- Additional safety: alerts and notifications

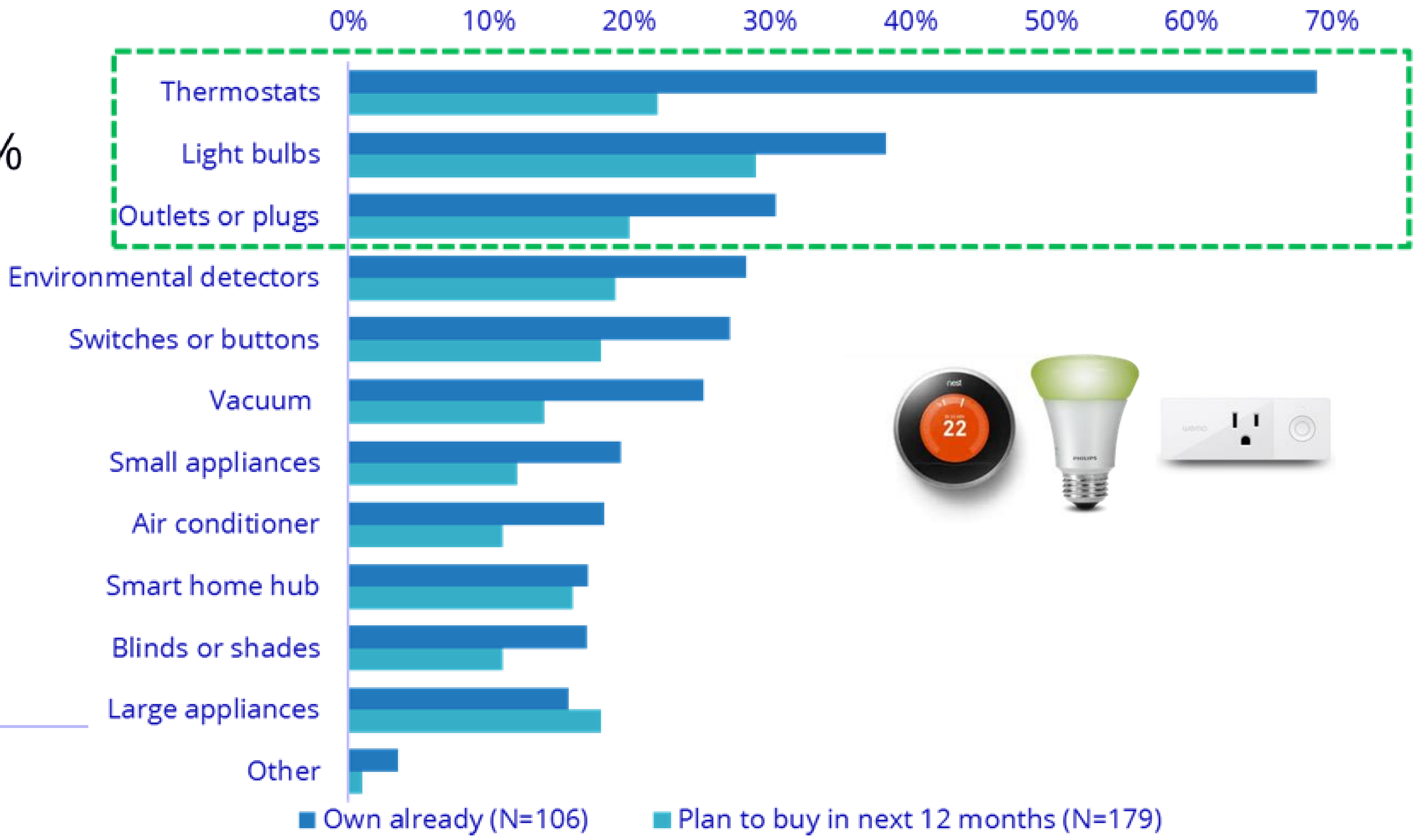
Value Proposition

- Energy efficiency
- Cost savings
- Saves time and reduce effort required to perform household tasks
- Automation and convenience like never before.

Adoption is low but interest is high in connected home automation devices



Connected home automation devices: Ownership and plans to purchase by device type



Home Security

Examples include:

Doorbells, door locks, security cameras/monitors, smoke/carbon monoxide alarms, baby monitors, etc.

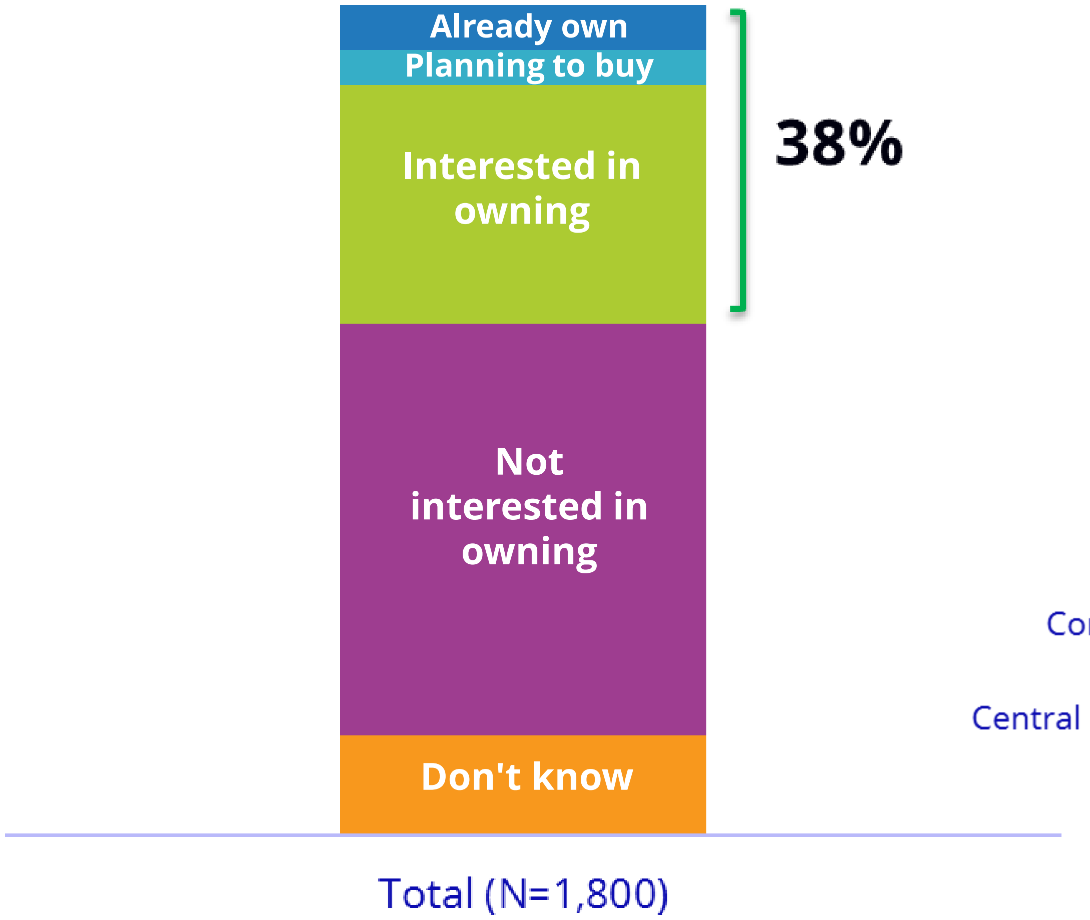
What problem does this solve?

- Remote home monitoring
- Improved real-time security
- Provides enhanced safety: Alerts and notifications

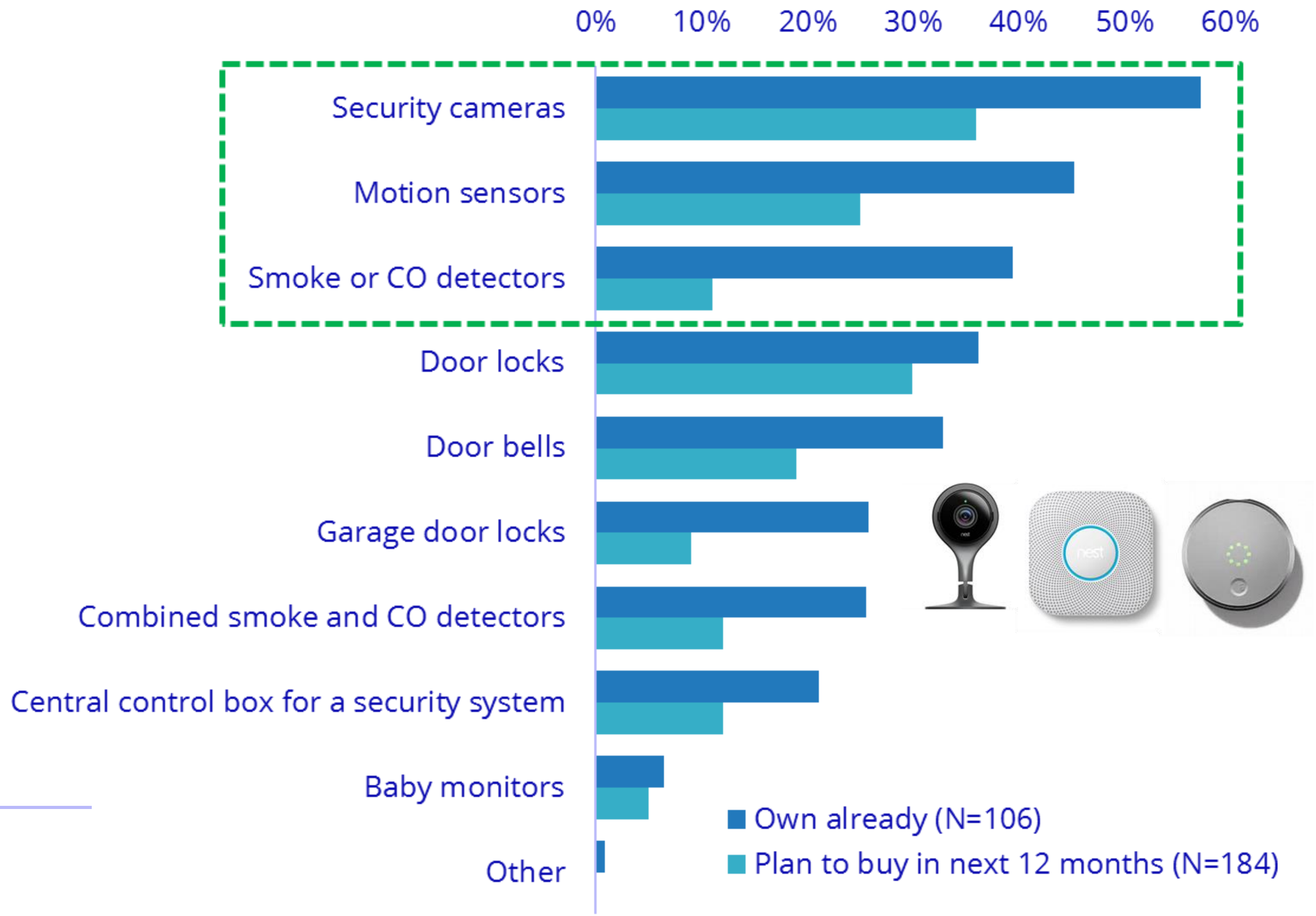
Value Proposition

- "Always on"/"Always Alert"
- Offers peace of mind previously not available for the mass market
- Automation and convenience

Adoption is low but interest is high in connected home security devices



Connected security devices: ownership and plans to purchase by device type

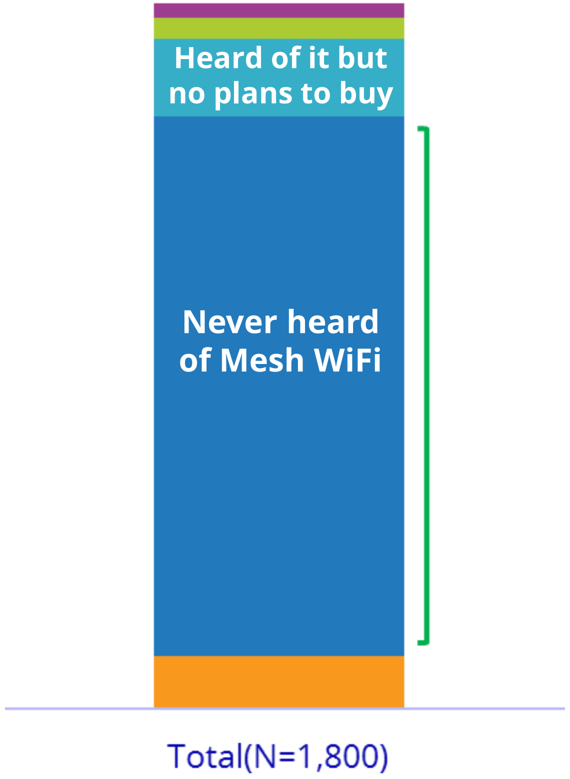


Source: IDC Canada n3 Consumer Survey, October 2017.

Network Infrastructure

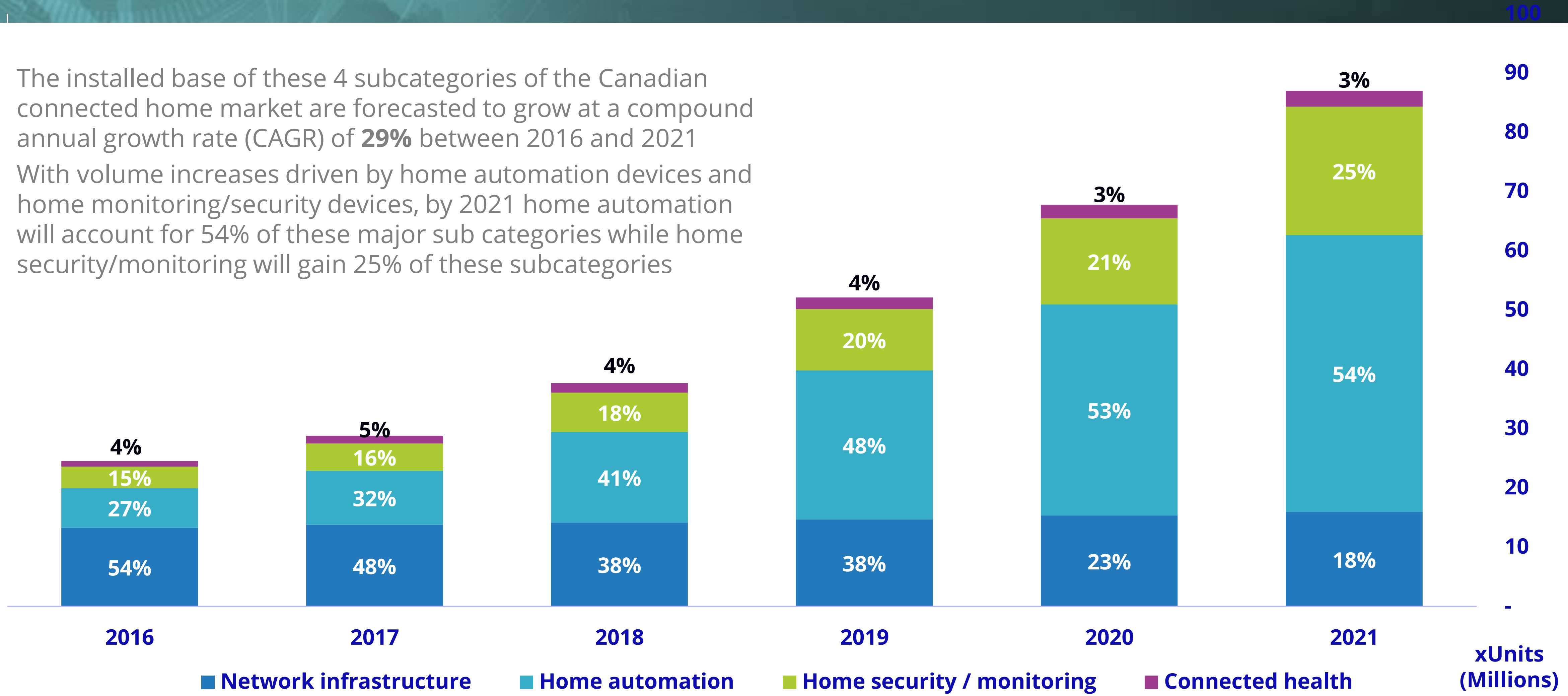
As the number of smart home devices increase the need for better network infrastructure will become more apparent.

- **Always connected -** Stable and reliable internet connectivity
- **Wifi Mesh?**
  A self configuring ad-hoc wifi network created using nodal routers/stations that can manage network load more efficiently.
  Examples include:
  Eero Wifi system , Google Wifi, ,Samsung connect ,Netgear's Orbi, and Linksys' Velop
- **Appeal of Wifi Mesh:**
  - Remove all internet wiring
  - Eliminate dead zones
    - Cover large square footage
    - Improve signal strength through interior walls (eg. plaster or concrete)
    - complex layouts where signal cannot reach



Forecasted growth - Connected device installed base

- The installed base of these 4 subcategories of the Canadian connected home market are forecasted to grow at a compound annual growth rate (CAGR) of **29%** between 2016 and 2021
- With volume increases driven by home automation devices and home monitoring/security devices, by 2021 home automation will account for 54% of these major sub categories while home security/monitoring will gain 25% of these subcategories



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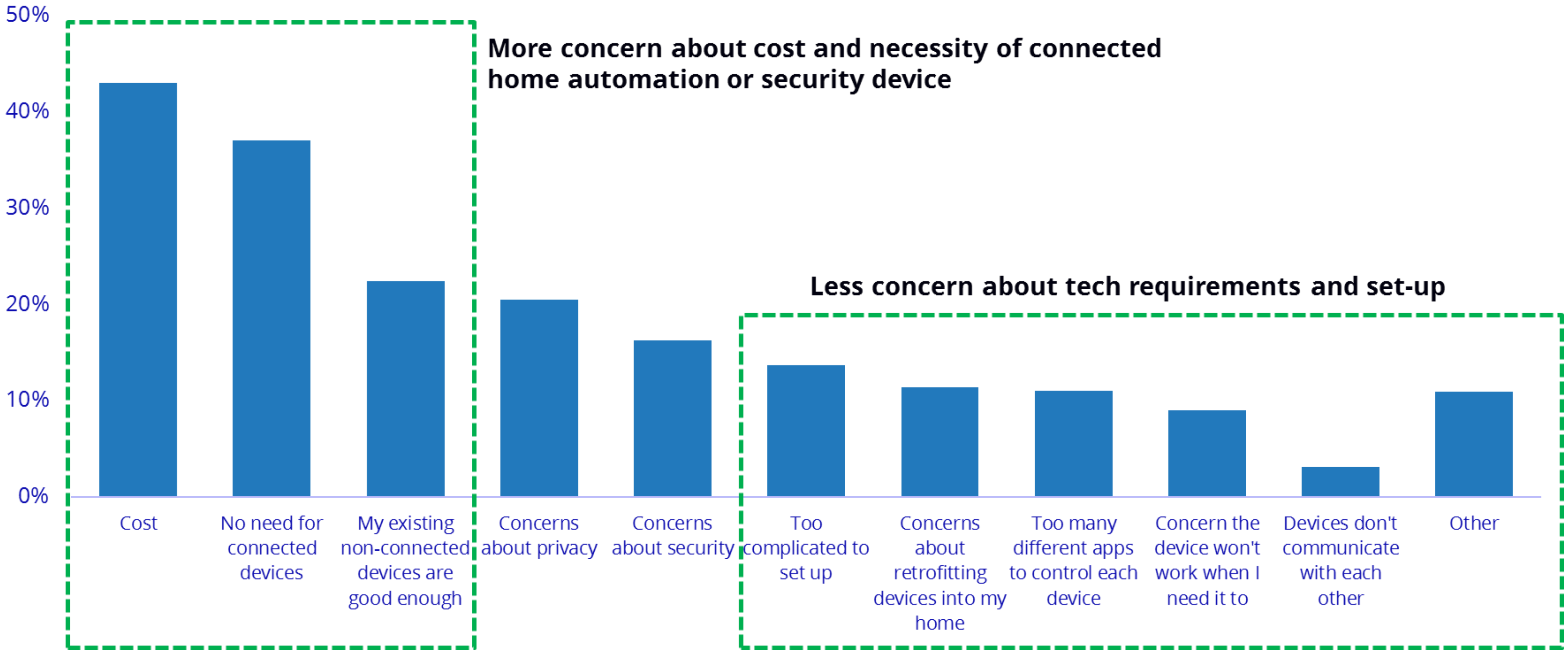
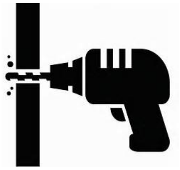
Source: Canadian Consumer Connected Mobility and Connected Home Devices Install Base Forecast, 2017–2021

Consumer perceptions - inhibitors



Source: IDC Canada n3 Consumer Survey, October 2017.

DIY vs Managed Services



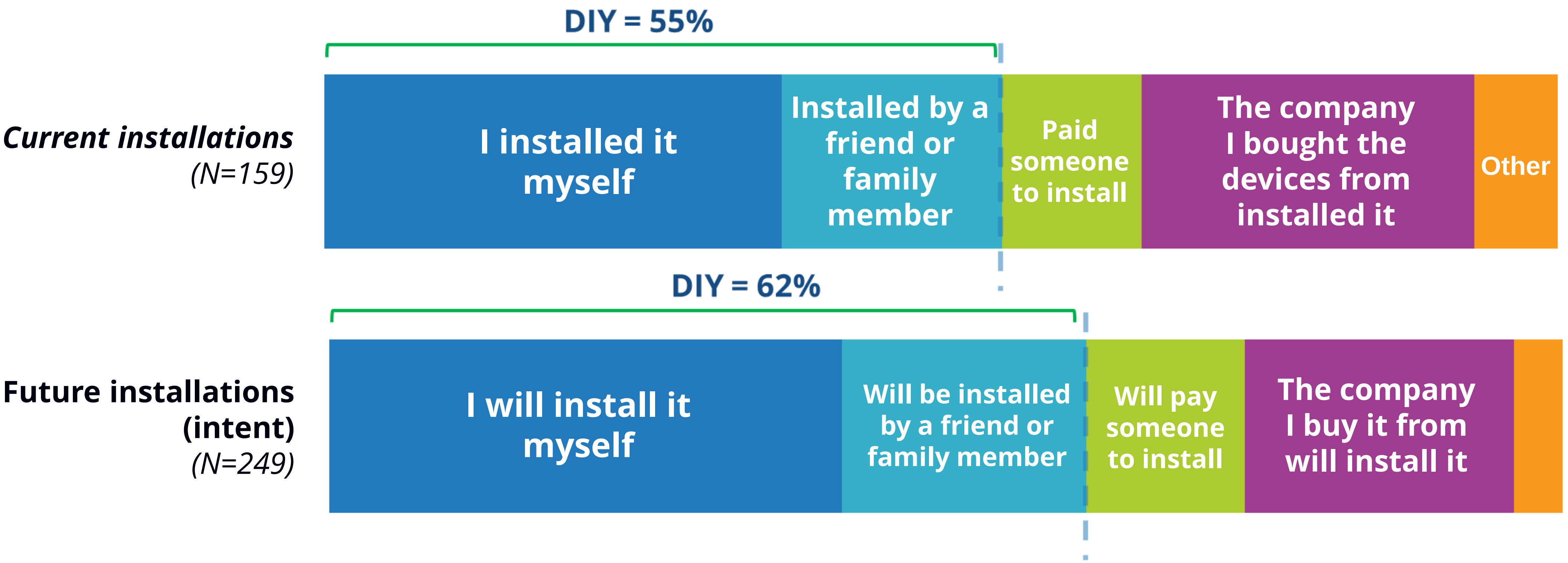
Do–it-Yourself

- Low cost & easy to use
- Solves distinct siloed needs identified by consumer
- Disparate tech standards & compatibility difficult
- Easier to rationalize device cost vs value proposition for singular need
- Challenging to sell through traditional retail channels
- Support across siloed solutions difficult to manage
- Addition of devices $\propto$ increased vulnerability and security risk (more devices to manage security of)

Managed Services

- Most potential for “whole-home” IoT
- Service providers tackle connectivity and technology interoperability
- Harder to rationalize purchase
- Added expense:
  - Another subscription
  - High up-front costs/subsidy billed over duration of service contract
- Lower Security Risk - centralized / managed security

Market focused on DIY installations



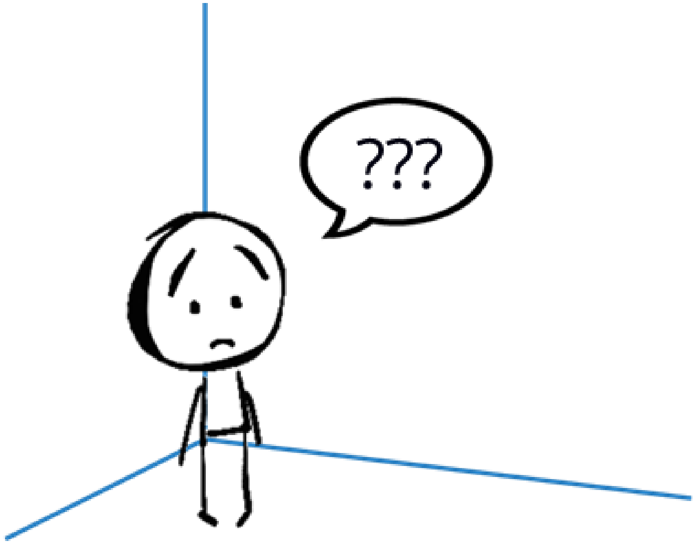
Majority of current and future installations of home automation and/or security devices are expected to be DIY, but this potentially inhibits potential for whole-home IoT

Source: IDC Canada n3 Consumer Survey, October 2017.

The quest for whole home IoT

Managed Smart Home Service Opportunity

Where are we now?



Where would we like to be?

Types of Managed Smart home Services needed

DIY solutions
(Consumer implemented but supported by a professional technical support service)

Semi-managed solutions
(Consumer implemented and paired with a managed service provider)

Fully managed solutions
(Professionally offered solutions implemented and managed by a service provider)

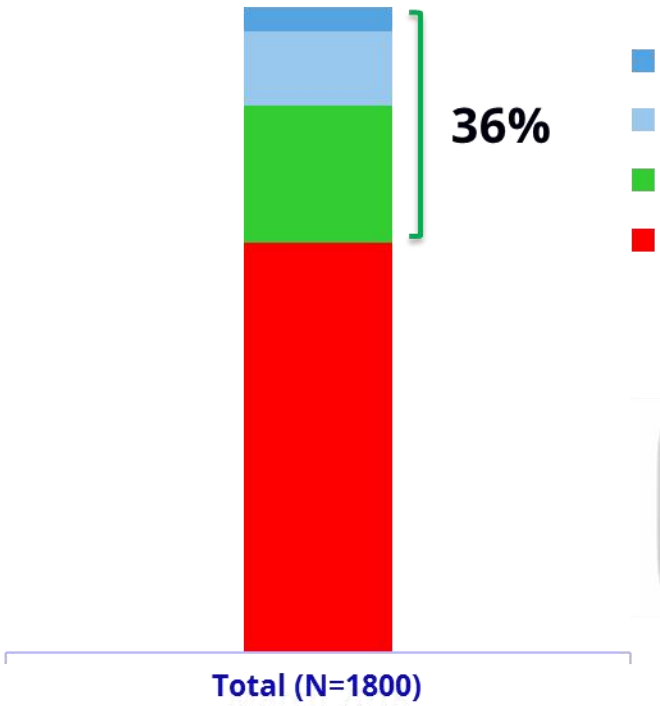
Smart Assistant – The missing piece

The Missing link - Voice as a new platform, vocalizing thoughts and actions!

Bixby
Google ASSISTANT
Hi. I'm Cortana.
amazon alexa
Siri

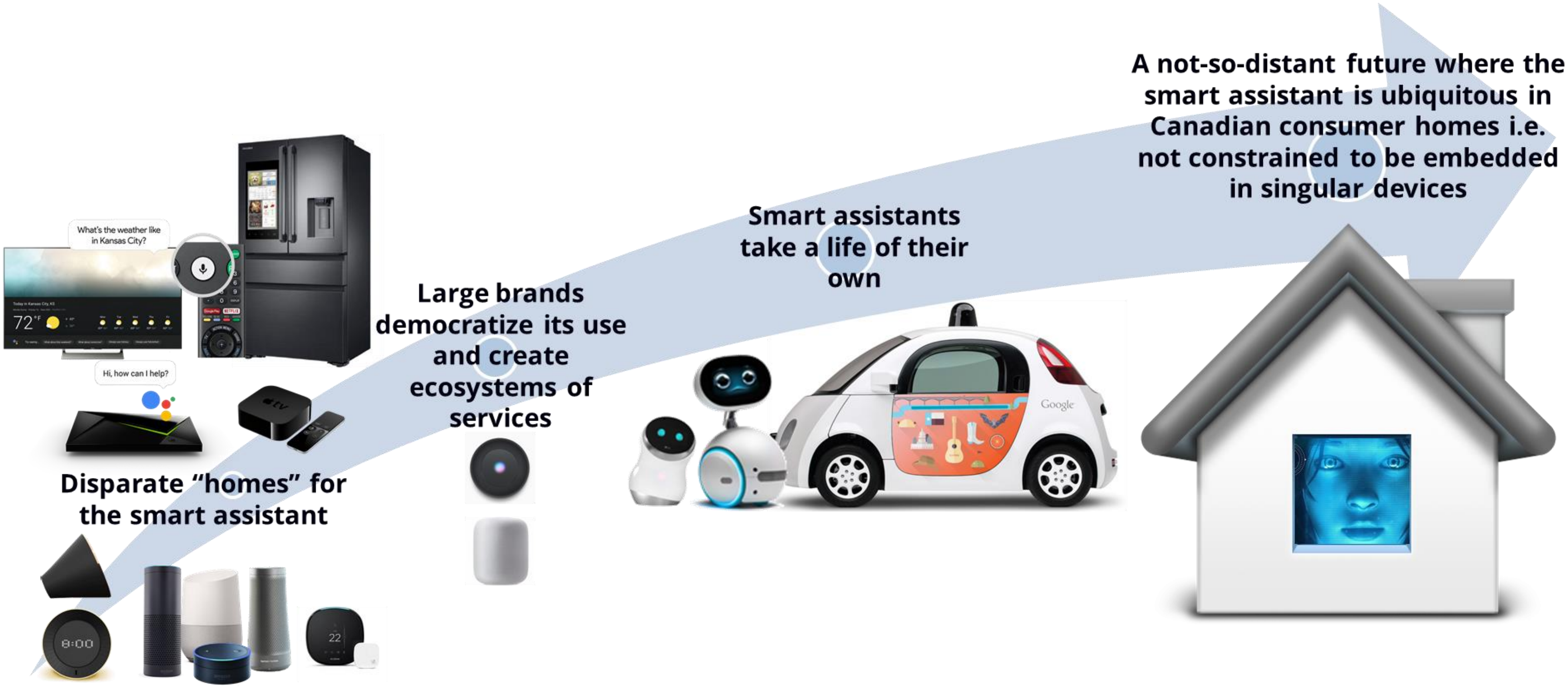
Consumer interest, adoption and attitudes towards voice-enabled interactions

Smart Speakers - Centralize and remove complexity of interconnections
=> "Whole Home IoT"



Source: IDC Canada n3 Consumer Survey, March 2018.

Smart Assistant – The market driver

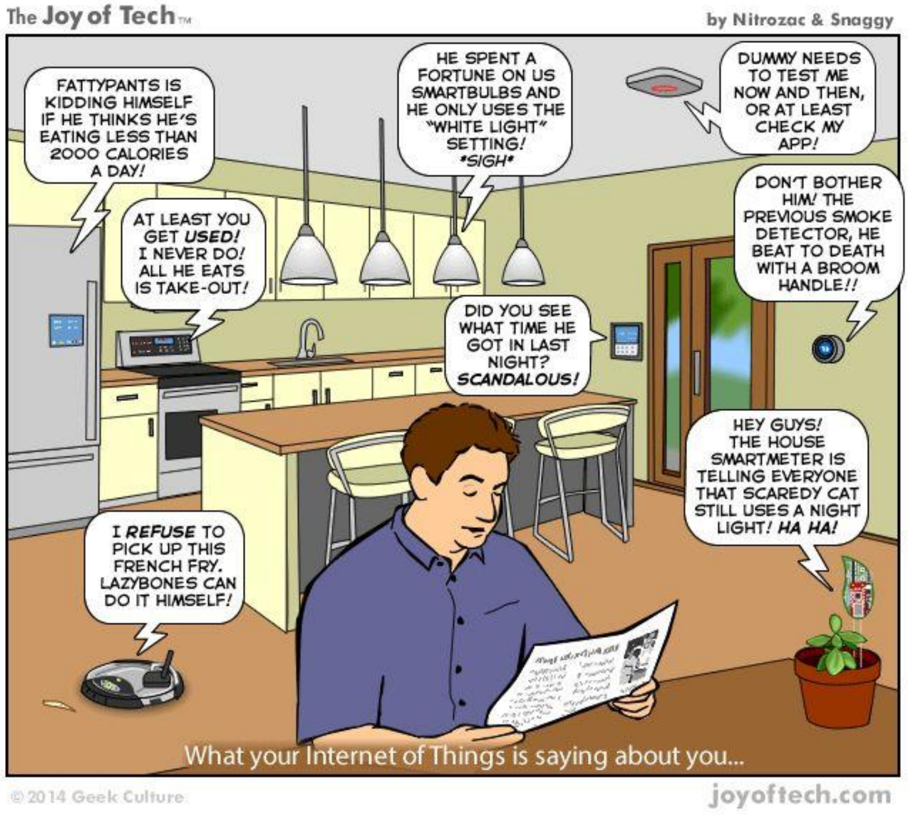


Essential Guidance (Key Takeaways)

1 Still early days for many smart home / connected device categories. Building awareness and education is still imperative. Devices with clear value propositions rather than a tidal wave of connected everything.

2 Think bigger picture – "Whole Home IoT". One size may not fit all. With varying concerns around privacy and differing levels of consumer tech savvy - giving consumers the option of the type of managed Smart Home service will help create sustainable business models.

3 Consumers like convenience and ease of use - Leverage the interest and adoption of Smart assistants and their rapidly growing voice recognition capabilities.



For More Information…

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Thank you!