

Voice Control Changes Everything

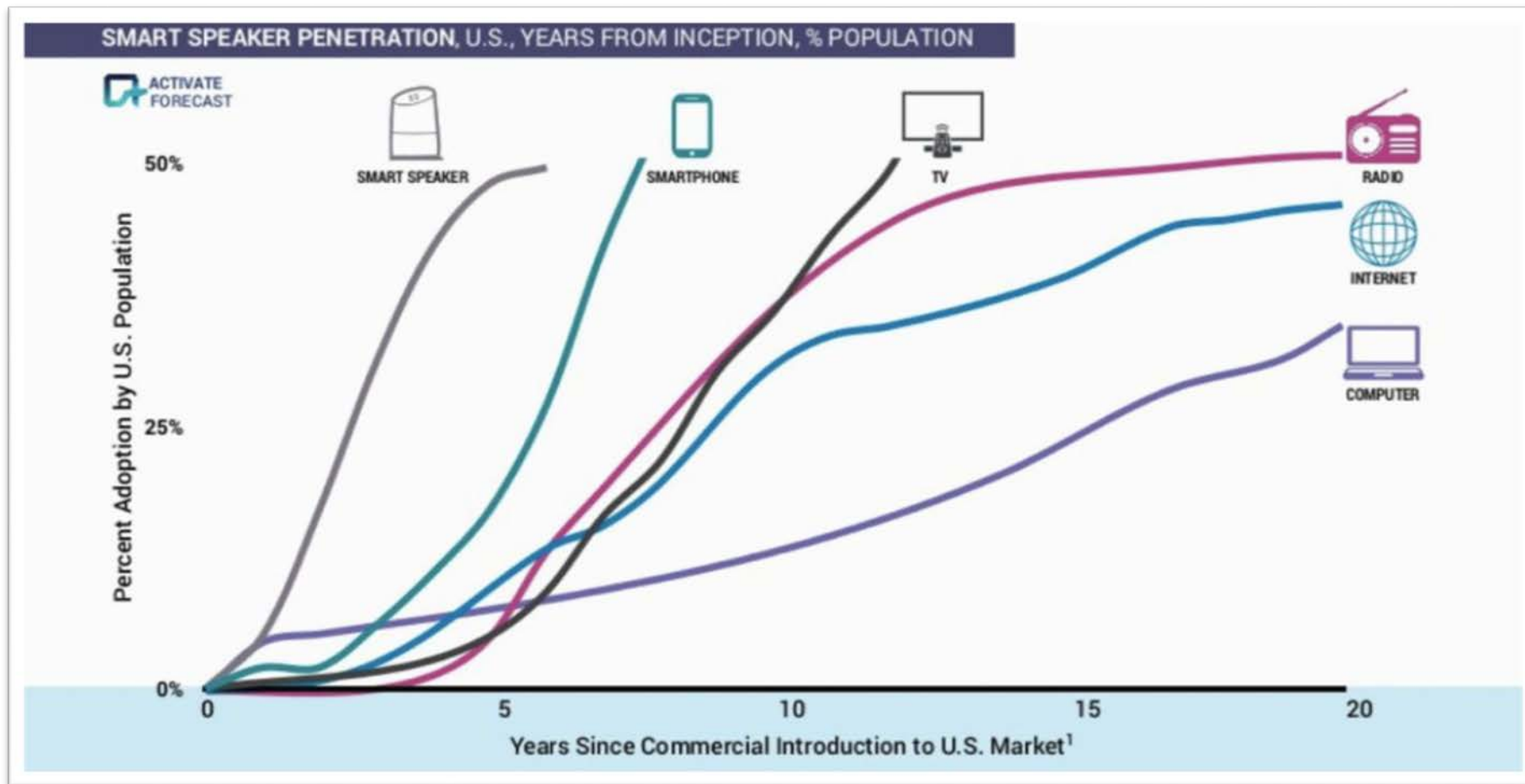
The Current Market, and Why Utilities Should Care About Virtual Assistants

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Smart speakers are the most quickly adopted electronic devices in US history



Source: [Consumer Adoption](#), XAPPmedia

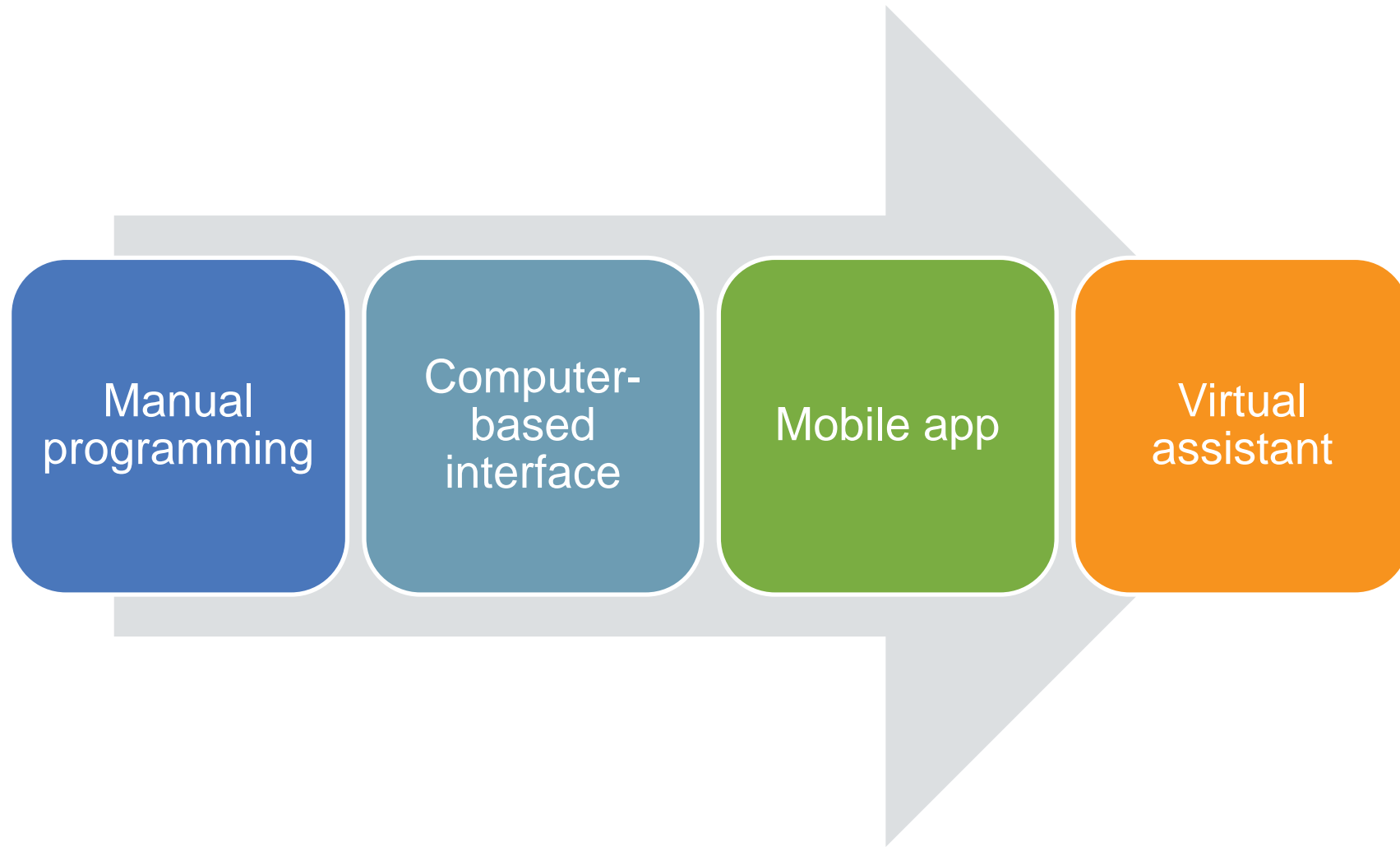
And people are actually using them!

NPR and Edison Research recently found that:

- 67% of smart speaker owners say they're now using their smart speaker as much or more often than they did in their first month
- 55% of smart speaker owners say they wouldn't go back to life without a smart speaker
- 68% of smart speaker owners say they're listening to more audio since getting their smart speaker
- Smart speaker owners are increasingly using the devices in place of radio, smartphones, or TV

Source: [The Smart Audio Report](#) (PDF), National Public Radio (2018)

A better interface for the smart home



So what makes virtual assistants different from other platforms?

- A more intuitive interface
 - Social versus technological
 - Hands-free
- Voice simplifies the complex
 - One command versus lots of apps and internal navigation
 - Based on artificial intelligence (AI)

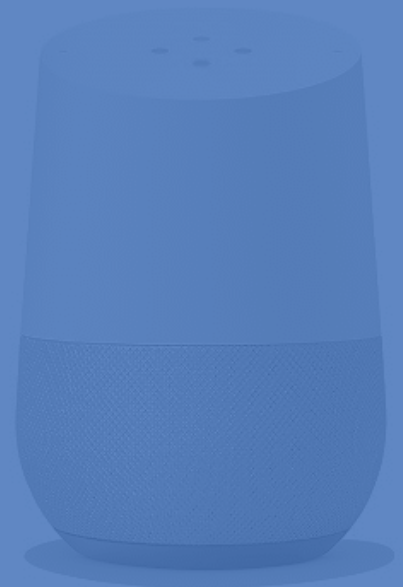


Source: Essie Snell

“Computing is moving from mobile-first to AI-first, with more universal ambient and intelligent computing that you can interact with naturally”

—Sundar Pichai, CEO, Google

The current landscape



Alexa and the Google Assistant dominate the market



Sources: Amazon, Google, ecobee, LG

A few key differentiators

Amazon Alexa

- Designed to strengthen customer engagement, promote Amazon services, and ultimately help users buy stuff
- As a retailer, Amazon has very strong manufacturer relationships
- Current market leader on smart speakers

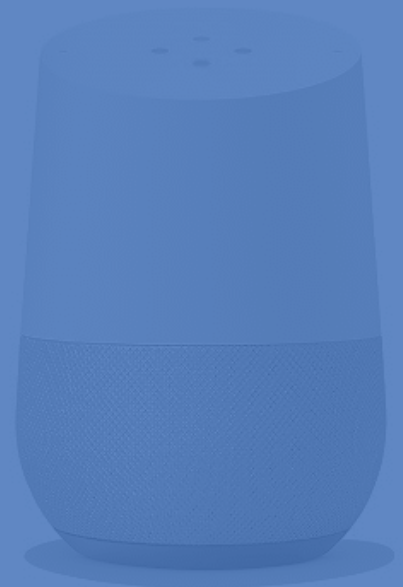
Google Assistant

- Designed to deepen Google's relevancy in users' daily lives, help Google sell ads/information
- Intended to be a true multimodal virtual assistant that could ultimately replace search
- More data-driven, with a stronger AI

What about Siri?



A short primer on skills and actions



Wait, what's a skill or action?!?!

An app for Alexa is called a *skill*

An app for Google Assistant is called an *action*

A few good resources for building skills or actions

- Amazon's [Alexa Design Guide](#)

Alexa Design Guide

Collapse All | Expand All


- Alexa Design Guide
- Introduction
- Foundation
- Design
- Resources

See Also

- [Alexa Presentation Language Overview](#)

Alexa Design Guide

When we communicate with each other, we use a series of nonverbal, verbal, and visual signs— sometimes on their own, sometimes in concert together. This can be as simple as an “mmhm” to let someone know we’re listening to them or layered with body language, such as lively hand gestures. As Alexa has developed, so too has her ability to communicate in these same robust ways. Alexa uses any available nonverbal, verbal, and visual means to communicate, whether it’s audio cues, her voice, a light ring, or a screen. As Alexa is integrated across a range of devices with different capabilities, her ability to communicate has only become richer because of it.



- Google's overview of [Actions on Google](#)

Build Actions for the Google Assistant with Actions on Google. [GO TO ACTIONS CONSOLE](#)

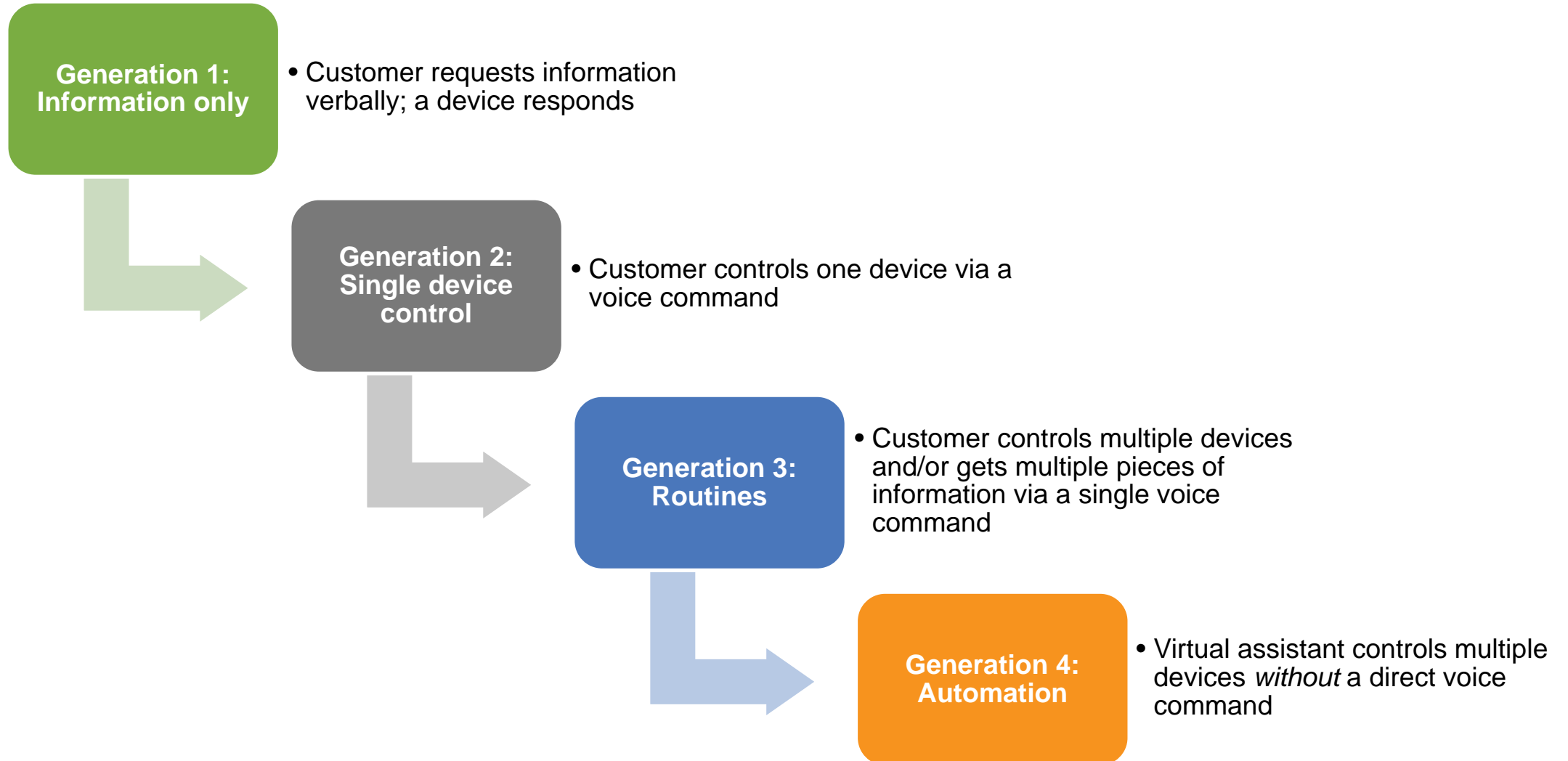
Help users get things done across Google

Engage billions of users across the Google Assistant and soon Google Search, Android, and other surfaces by developing Actions and linking them with our ever-growing intents catalog.

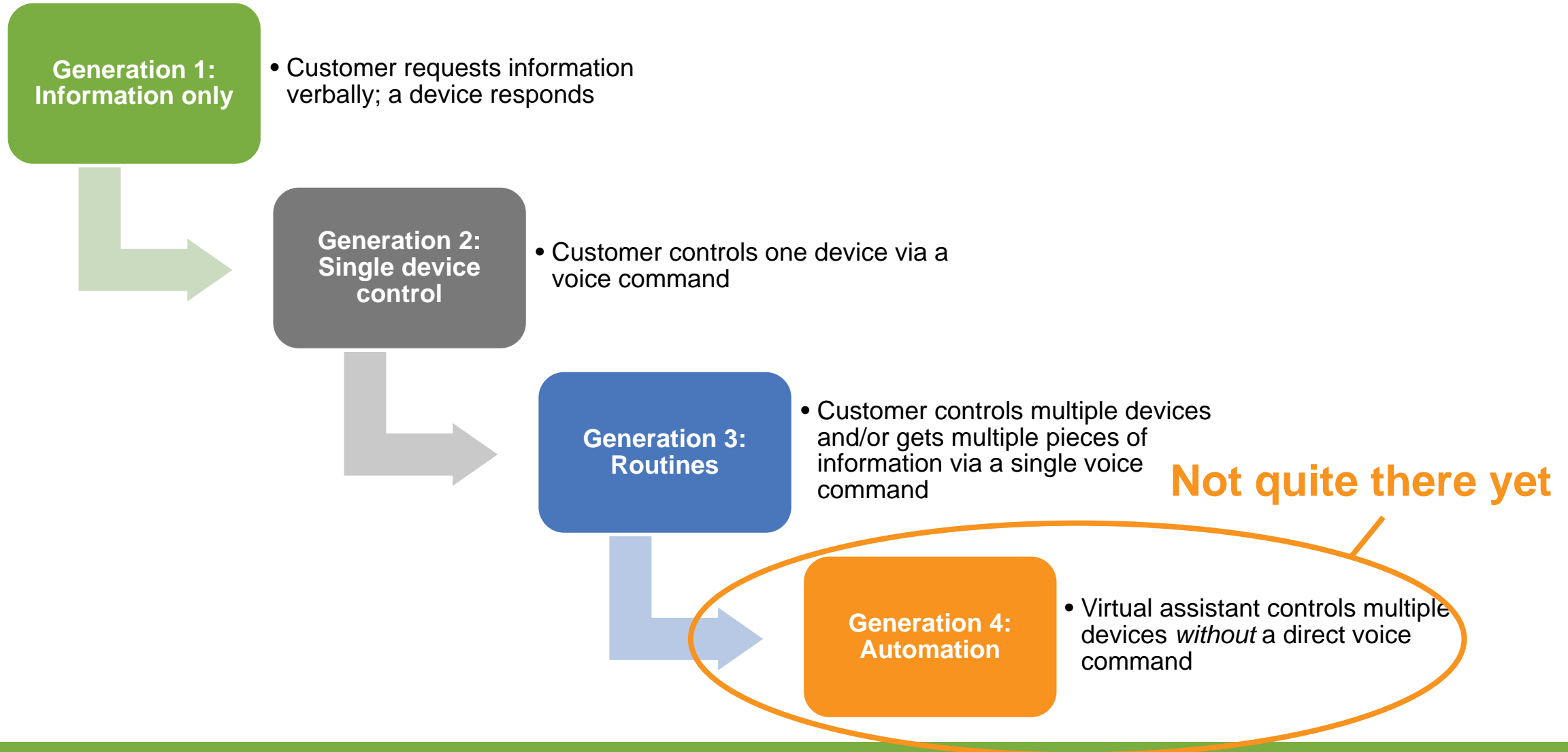
[START BUILDING](#) [LEARN MORE](#)

Conversation developers Design, build, and distribute fully-customizable conversational Actions across Google, using Dialogflow or one of our many templates. LEARN MORE	Smart home developers Build smart home Actions allowing you to connect, query, and control IoT devices through your cloud infrastructure. LEARN MORE	Content creators Make content you've already integrated in Google services (such as AMP news, recipes markup, and podcasts) more discoverable, by claiming and refining automatically generated Actions in our directory. LEARN MORE	Coming Soon! Android developers Create an Action by adding an Actions.xml file to your Android app and improve its discovery and re-engagement across multiple, billion-user Google products. LEARN MORE
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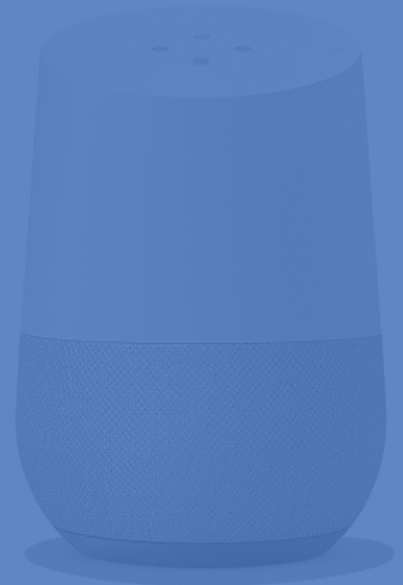
Hierarchy of complexity



Hierarchy of complexity



**How is all this
relevant for
utilities?**



“60% of smart speaker owners said they are ‘probably’ or ‘definitely’ interested in a utility app that utilizes voice-activated skills.”

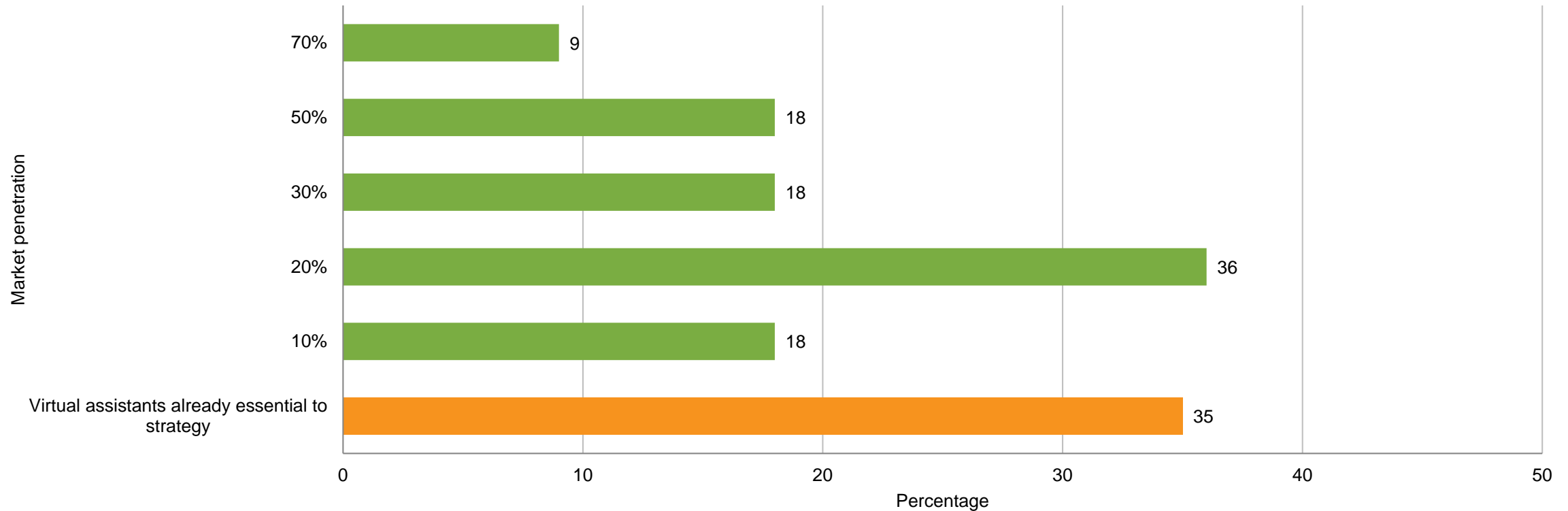
—E Source

**Virtual assistants ...
are an important new way to engage
with residential customers**

62% Strongly agree
38% Somewhat agree
0% Neither agree or disagree
0% Somewhat disagree

Utility survey respondents think virtual assistants are essential, or will be soon

Percentage market penetration for virtual assistants to become essential

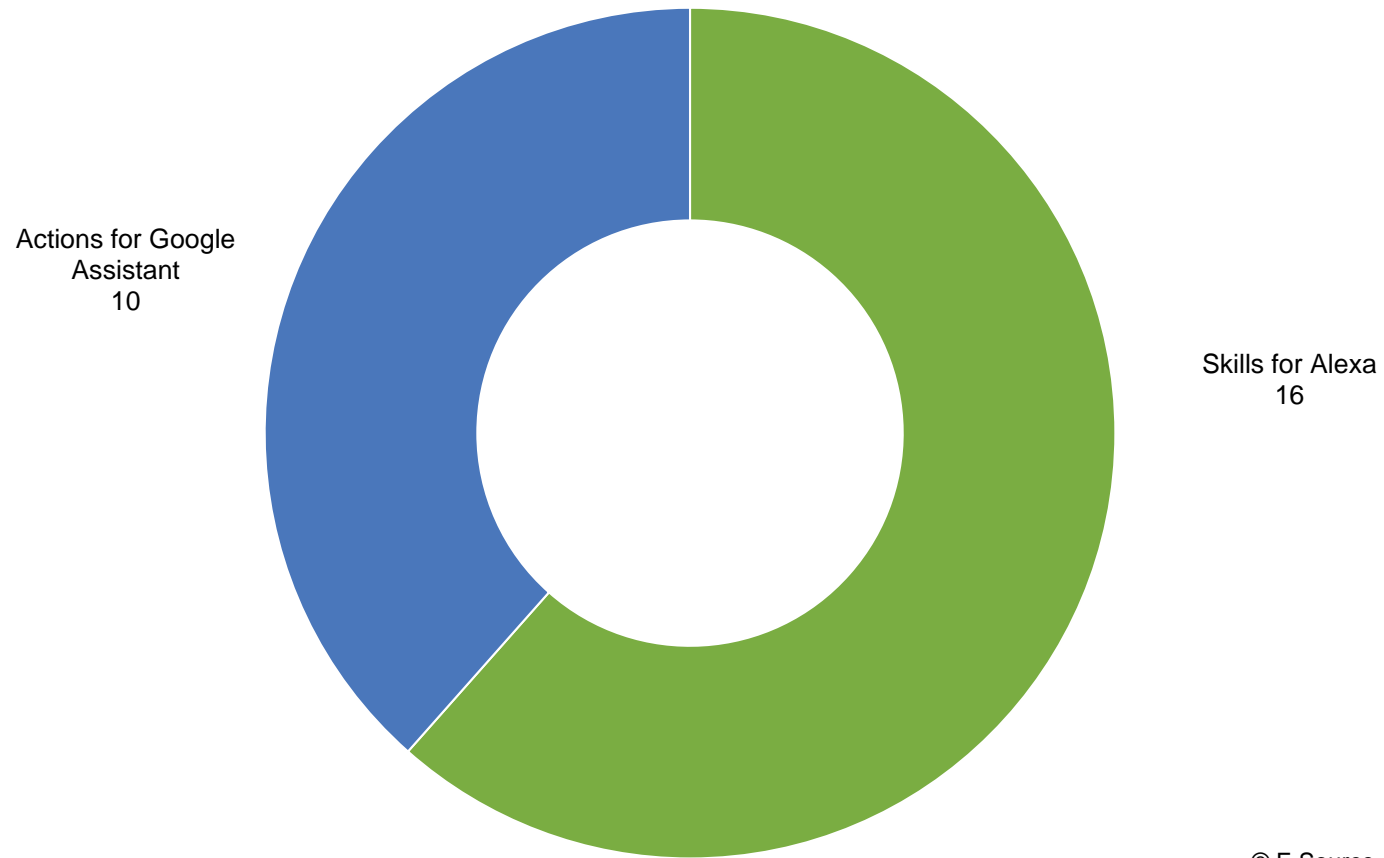


© E Source (Residential Utility Customer Survey 2017)

Nearly 20 utilities have created skills or actions to date

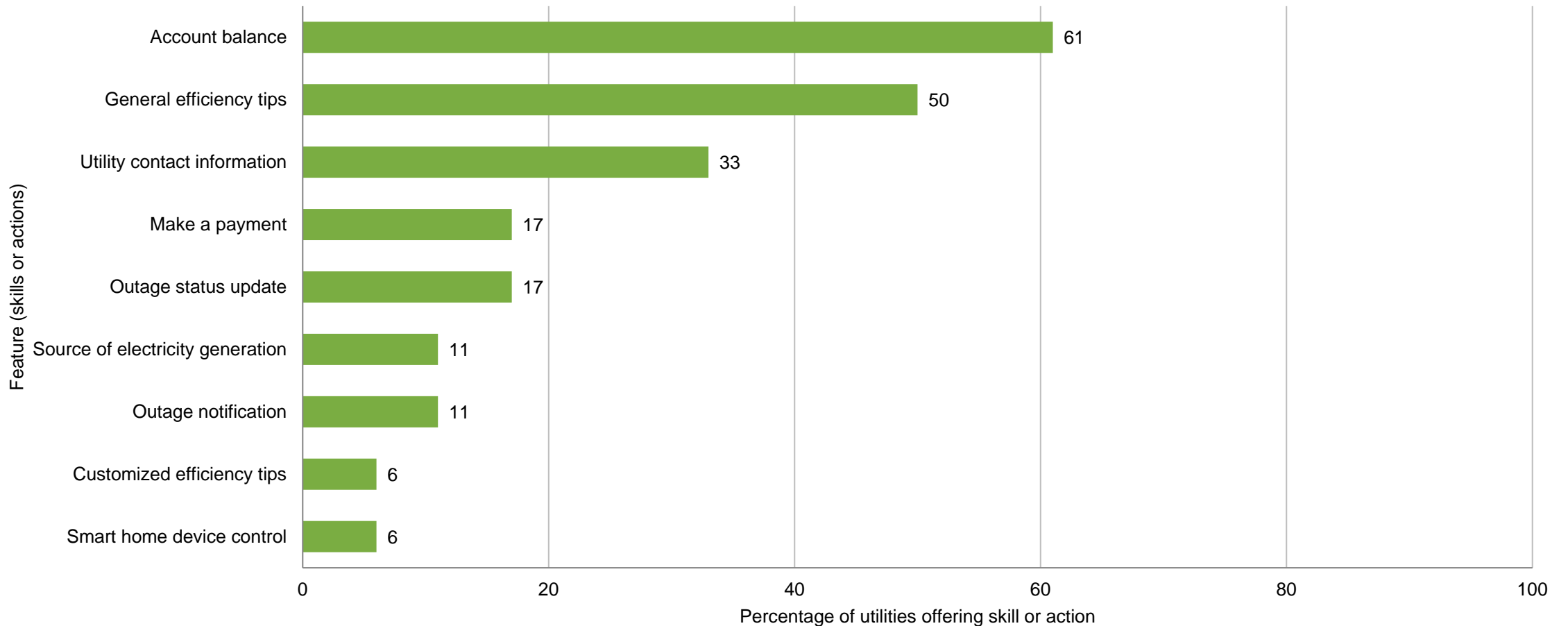


Utilities have built more skills than actions



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What features are utilities offering?

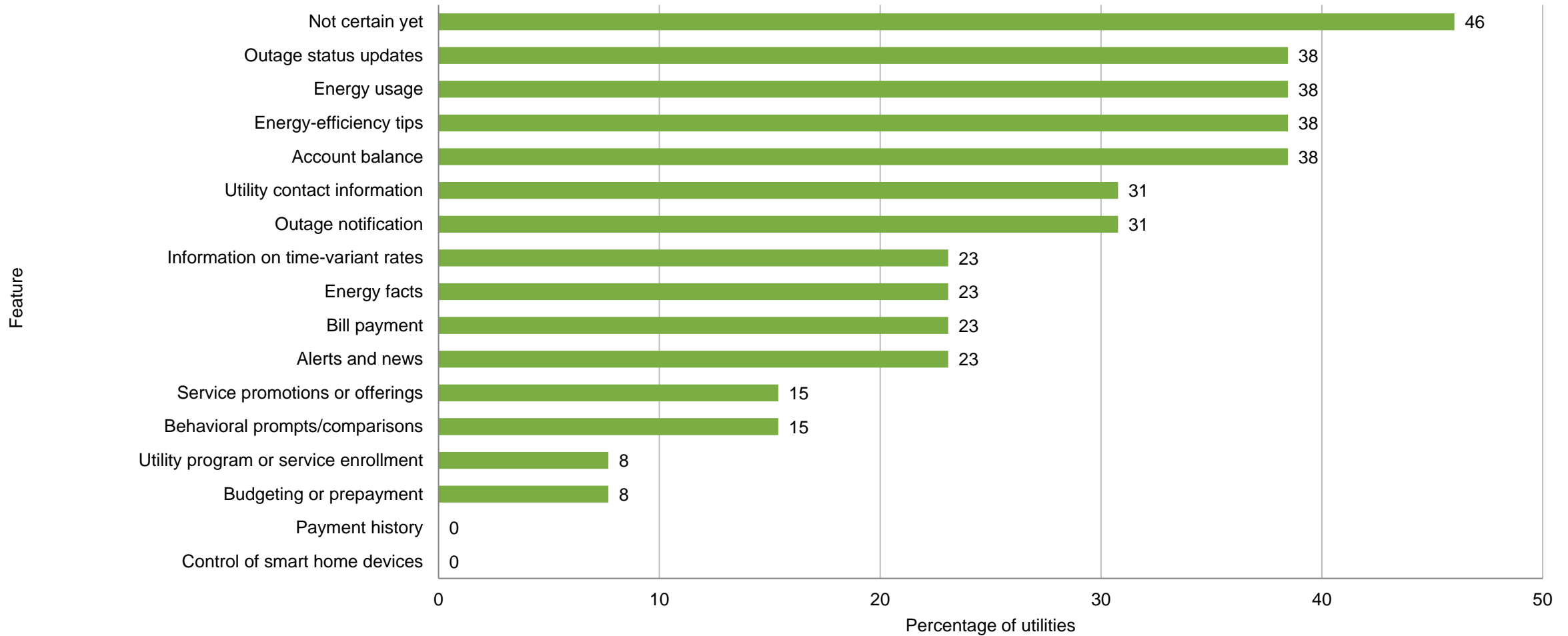


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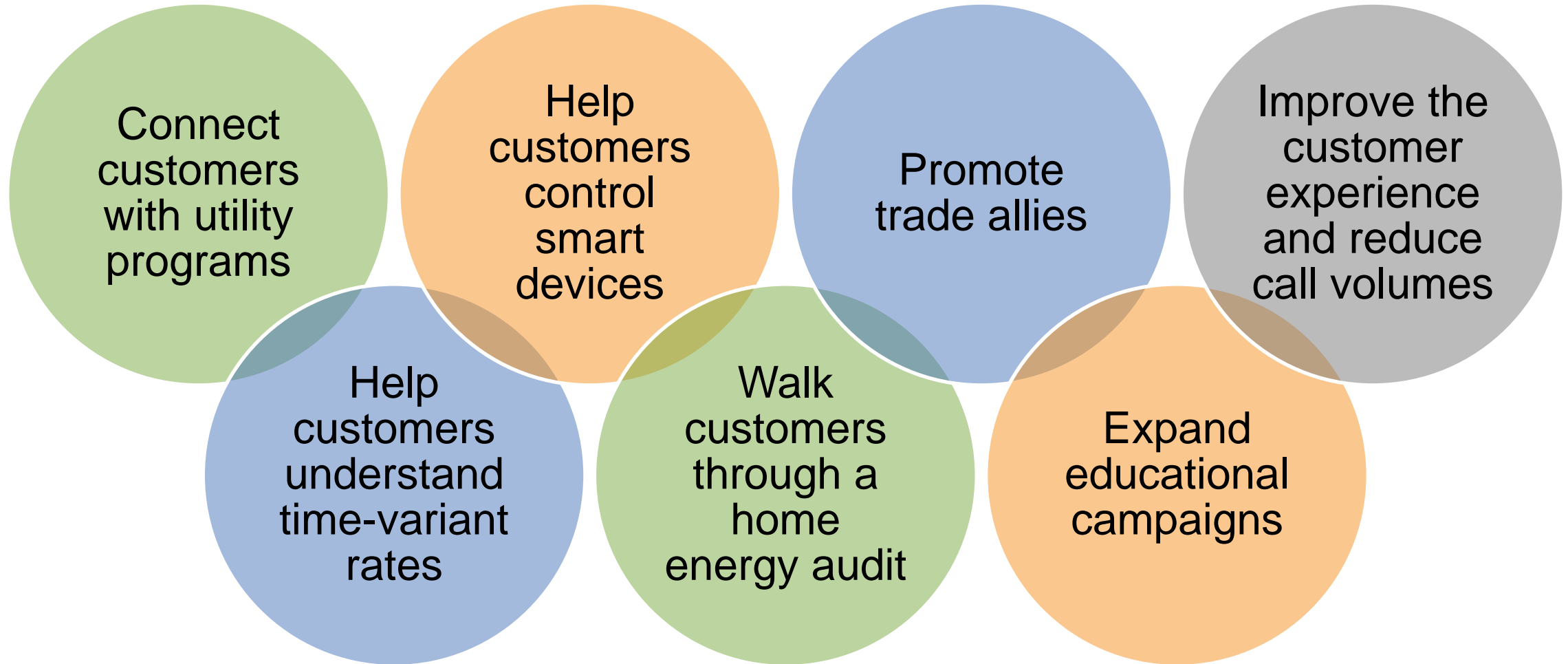
Planned features

Task-related features currently offered or planned within 12 months

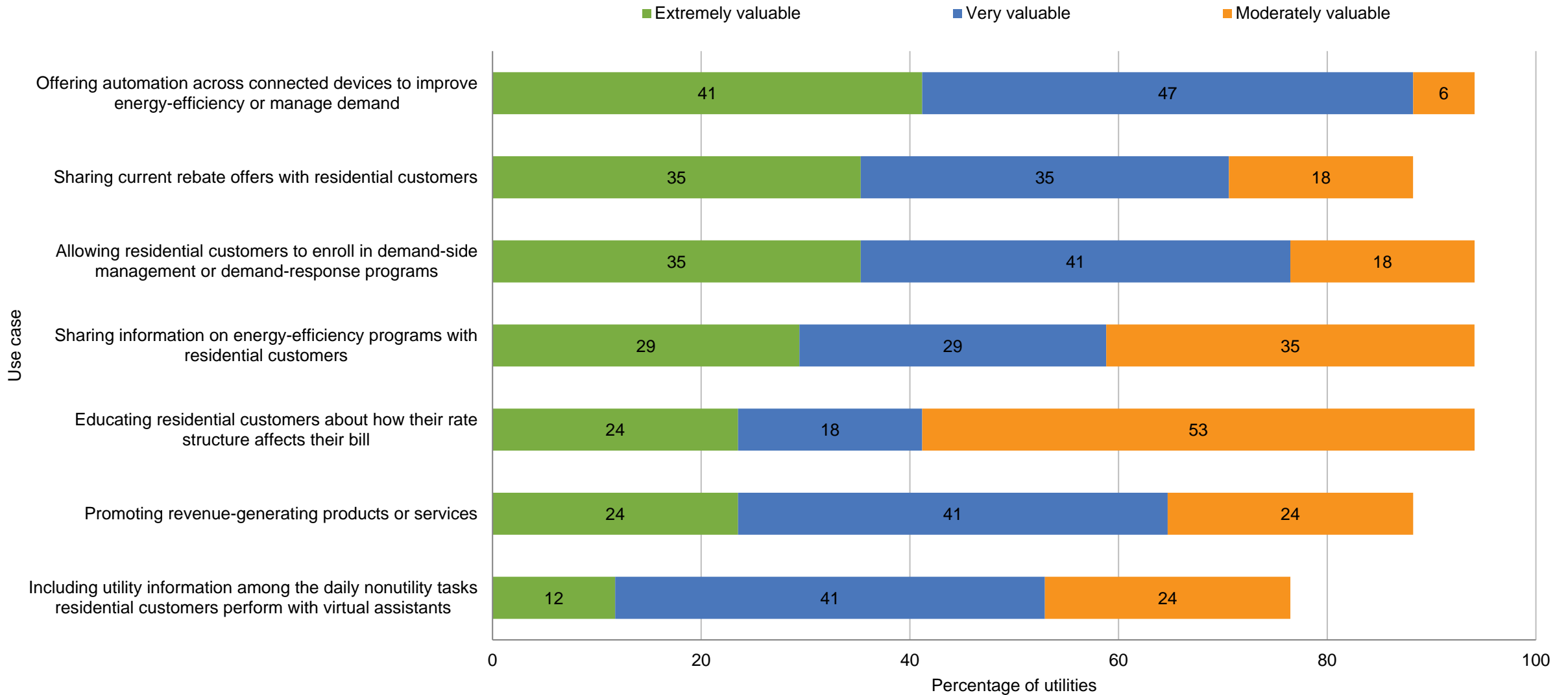


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There's much more that could be done!



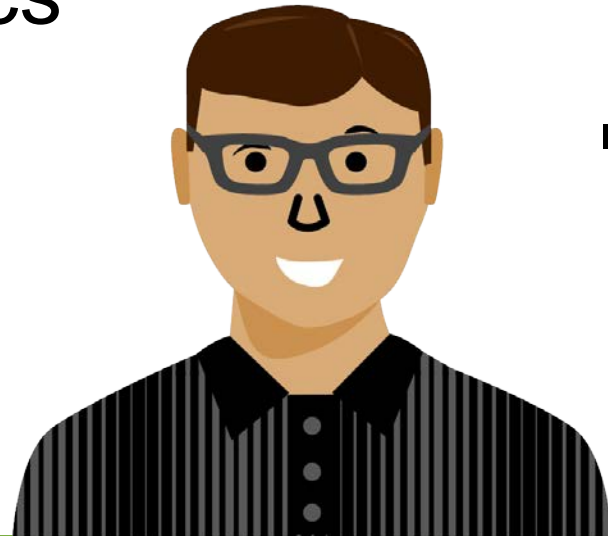
Benchmark: Use-case value



© E Source

Share information and connect customers with utility programs

- Smart speakers are responsive, not proactive, so they require different marketing tactics
- Consider folding relevant info into the daily tasks that customers perform with virtual assistants
- Daily news summaries or “flash” briefings may be an especially effective channel for news or advice



How are customers actually using smart speakers in a typical day?

5:00–9:00 a.m.

- Traffic
- Weather
- News

9:00 a.m.–
5:00 p.m.

- Order an item
- Listen to an AM/FM station
- Add to shopping list

5:00–9:00 p.m.

- Order food
- Play a game
- Find a restaurant or business

9:00 p.m.–midnight

- Control devices
- Read short stories
- Play an audiobook

Source: [The Smart Audio Report](#) (PDF), National Public Radio (2018)

Help customers understand time-variant rates and energy generation

- How their rate structure affects their bill
- What they can do to take charge of their energy use
- What the connection is between energy generation and current pricing



Walk customers through a home energy audit



Promote trade allies

- Let customers ask about trusted local contractors for home upgrades or maintenance
- Build in info on current demand-side management offerings
- Smart devices facilitating remote diagnostics could prompt this conversation



Source: iStock

Expand educational campaigns

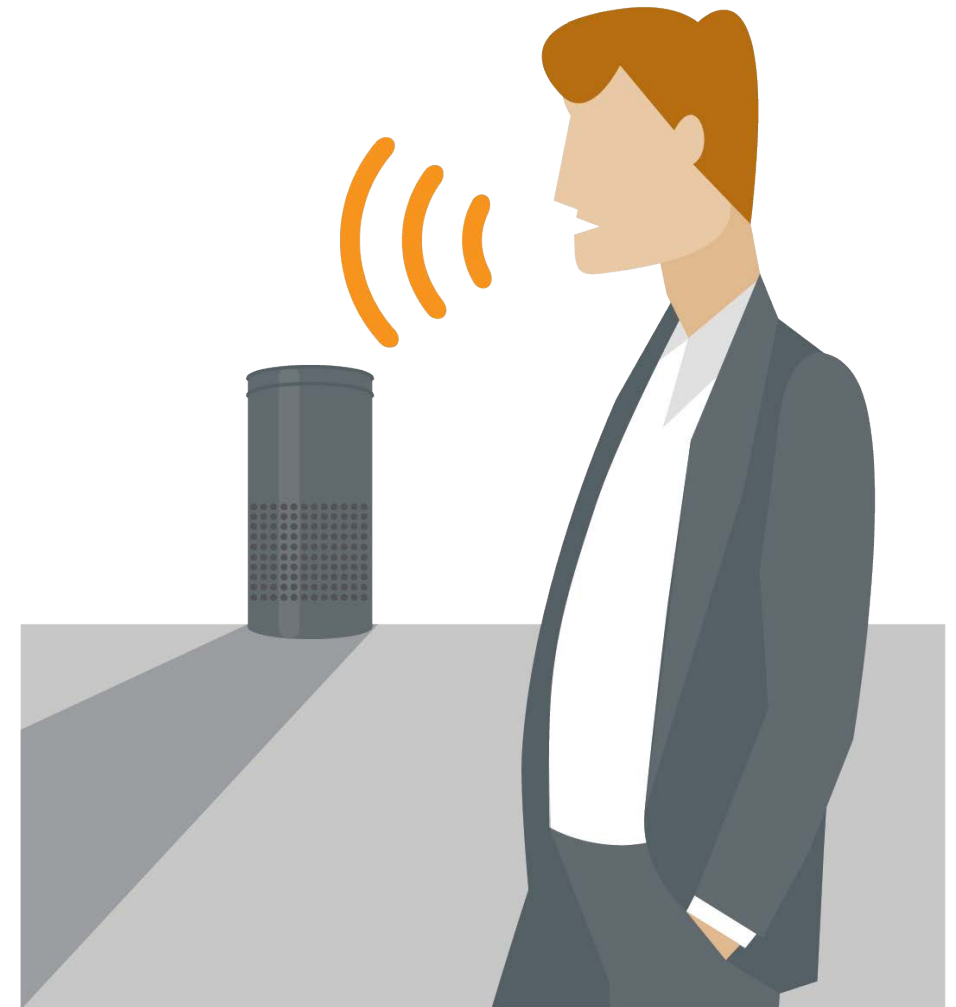


Source: iStock

Improve the customer experience and reduce call volumes

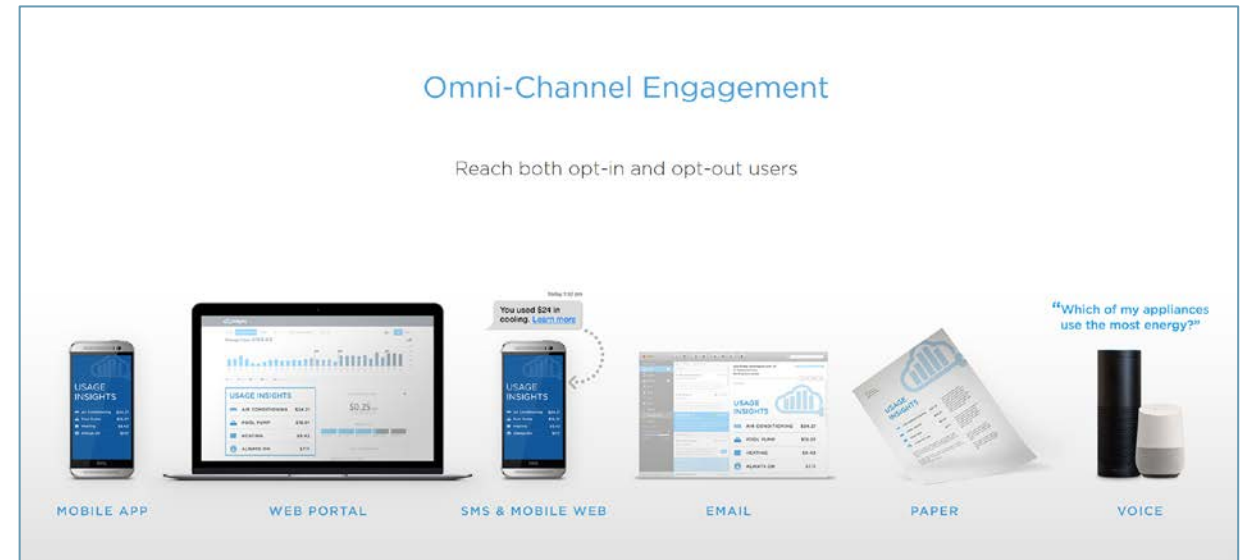
Virtual assistants are hands-free, intuitive, and simple for customers to use:

- Unlike interactive voice response systems (IVRs), websites, and even mobile apps
- Could provide an excellent platform for communicating with customers



Can disaggregation and advanced modeling/analytics help utilities provide better information and advice?

- Companies like Bidgely, Ecotagious, and Tendril are quickly moving into voice
- Lots of promise, but accuracy is still unknown
- Pilot results coming soon



Source: Bidgely

Help customers control smart devices



- Alexa and the Google Assistant can each control 5,000+ smart home devices
- NPR: 32% of smart speaker owners have controlled household devices with a smart speaker in the past week.

Sources: ecobee, ThinkEco

**Virtual assistants will ...
connect to most devices in the home**

38% Strongly agree
46% Somewhat agree
8% Neither agree/disagree
8% Somewhat disagree

**Virtual assistants will ...
help residential customers create
smart home systems to manage their
energy use**

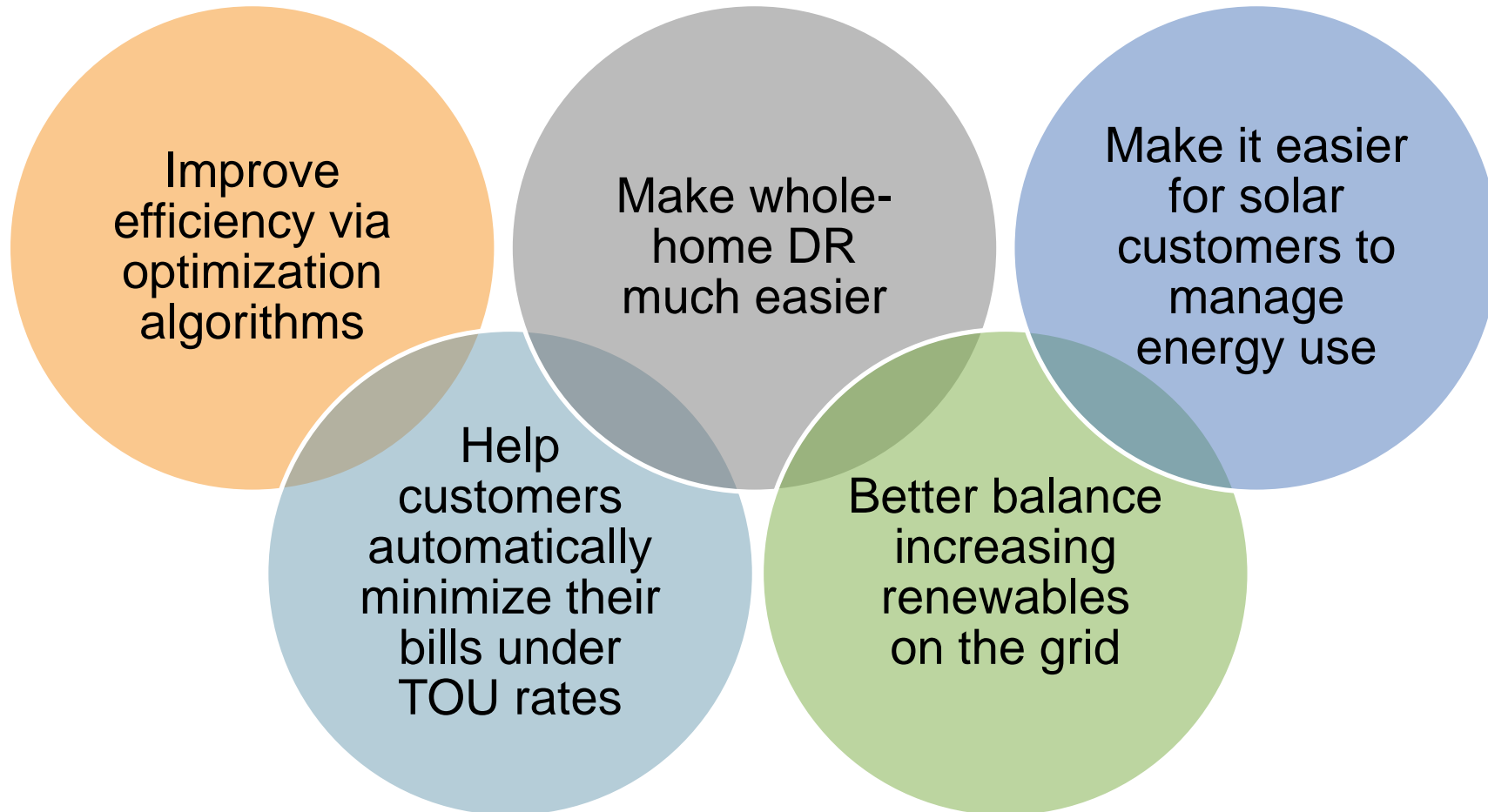
31% Strongly agree

54% Somewhat agree

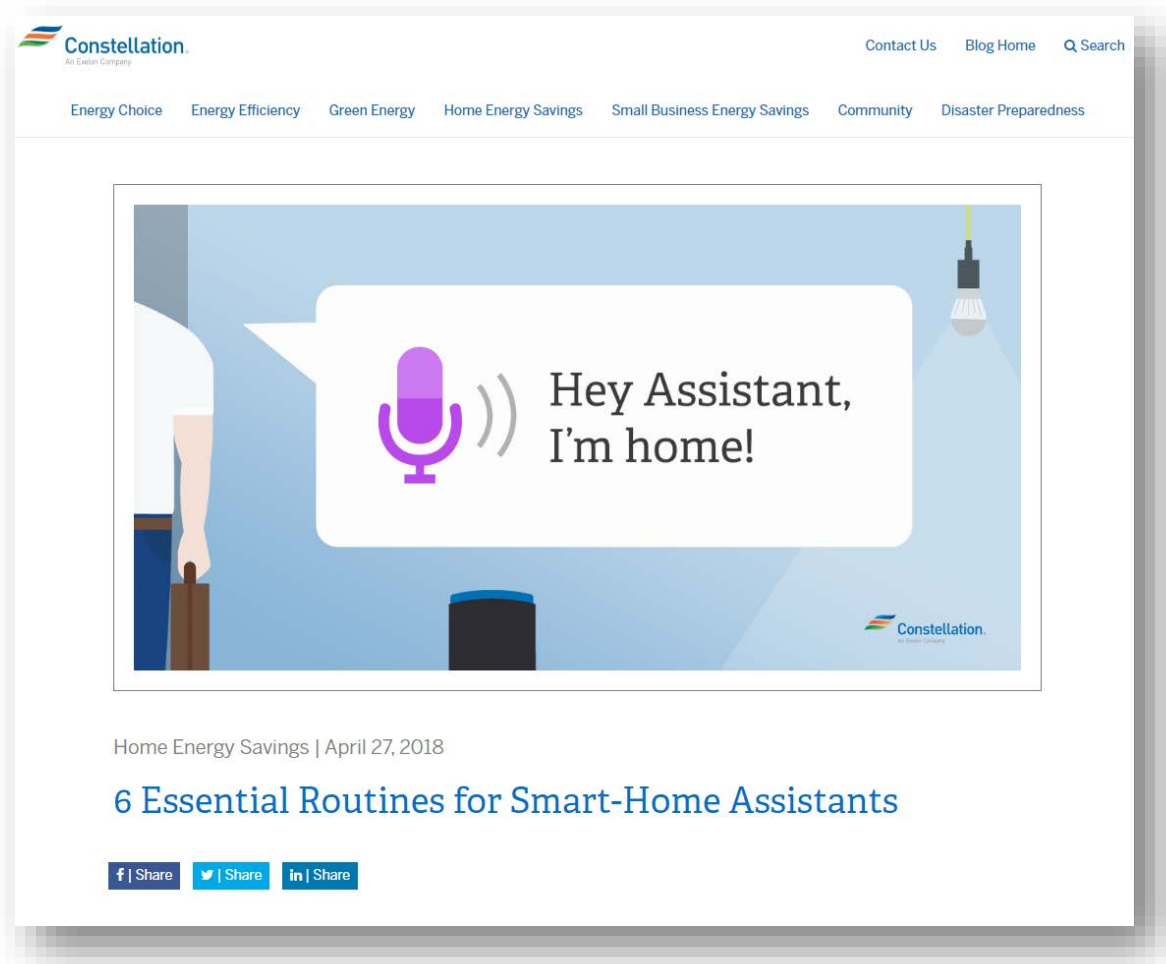
15% Neither agree/disagree

0% Somewhat disagree

More comprehensive automation offers more potential benefits for utilities



One approach: Help customers create routines



- “Here are the six essential routines for smart-home assistants:*
- 1. Good morning*
 - 2. Leaving home*
 - 3. Commuting to work*
 - 4. Commuting home*
 - 5. I’m home*
 - 6. Bedtime”*

Source: [6 Essential Routines for Smart-Home Assistants](#)

“Good morning” routines

- Adjust lighting and turn appliances on
- Adjust thermostat
- Tell me about the weather
- News headlines
- Tell me about my day
- Play music

Another approach: Create a home security system with smart home functionality



A third approach: Use a hub



RATES Energy Expert

by Universal Devices, Inc.

Rated: [Guidance Suggested](#)

☆☆☆☆☆ 0

Free to Enable

"Alexa, ask Energy Expert to
configure my devices"

"Alexa, ask Energy Expert
best time to charge" >

Get this Skill

Enable

Account linking required

By enabling, this skill can be accessed on all your available Alexa devices.

Share    

Description

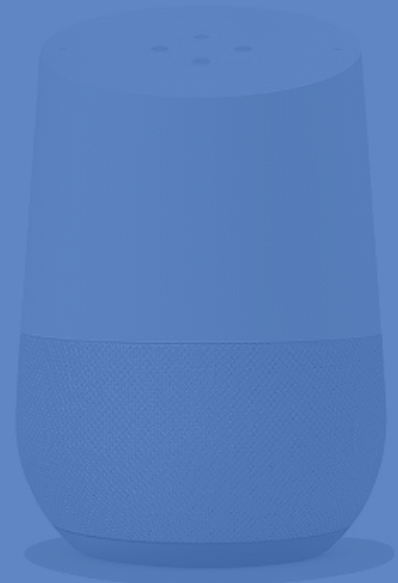
This skill is the voice interface to the RATES App. It allows you to configure your devices such as thermostat and pool pump. Once the system is set up, you can query your electricity costs, asks when is a good time to run your appliances, ask if you should open windows and tell the system you are home or away.

For the “best” automation, consider close relationships with partners like Amazon and Google

- Get manufacturers on board so devices can respond appropriately to signals
- Manage data privacy
- Maintain a positive customer experience



What are the downsides of virtual assistants?

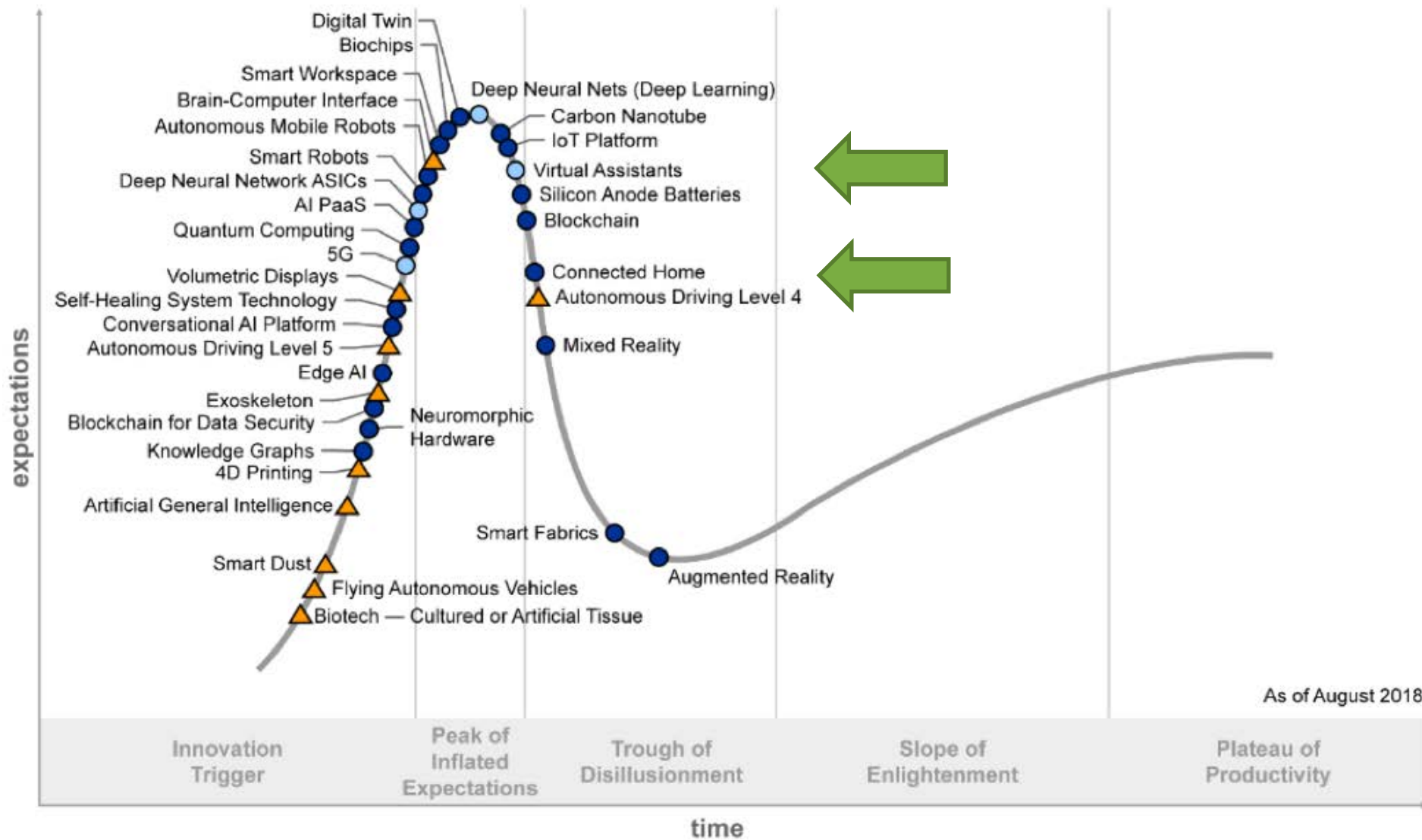


Virtual assistants aren't perfect

- Don't (yet) respond differently to different users
- Skills/actions can still be clunky to use at times
- Still not perfect at interpreting commands
- Tech glitches can freak people out
- Privacy and security concerns



Source: Michael Margolis



Plateau will be reached:

- less than 2 years
- 2 to 5 years
- 5 to 10 years
- ▲ more than 10 years
- ⊗ obsolete before plateau

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Smart home systems complicate things

Moving from smart speakers to full smart home systems poses a number of challenges:

- Devices are expensive
- Systems can still be difficult to configure
- Interoperability is still a challenge (but getting better)
- Managing personal data across multiple devices/vendors can create challenges
- Unclear where intelligence/automation should live (in individual devices or in hubs/virtual assistants)

Looking into the crystal ball



**Will skills/actions make mobile apps
and web portals obsolete?**

Is there a role for Energy Star?

The risks of disintermediation

What about transactive energy?

**How do you expect virtual assistant
technology to evolve in the next
3 to 5 years?**

How do you expect virtual assistant technology to evolve in the next 3 to 5 years?

“Coordination with other devices: connected products, mobile phones, cars, etc. Capabilities will exceed users’ interest in using voice. Need to include nonvoice-related control strategies as opposed to always requiring voice command.”

**How do you expect virtual assistant
technology to evolve in the next
3 to 5 years?**

“Geo-sensing will become more prevalent.”

How do you expect virtual assistant technology to evolve in the next 3 to 5 years?

“Virtual assistants can help transform the relationship with utilities and their customers. As more customers enroll in a time-of-use rate, virtual assistant technology could be very useful in making daily decisions, without requiring the customer to pick up a device or use a computer.”

How do you expect virtual assistant technology to evolve in the next 3 to 5 years?

“Instead of simply pulling information from the assistant, the assistant will use actual customer consumption and payment behaviors and proactively recommend offers, or be empowered to proactively place a customer on a program or rate.”

How do you expect virtual assistant technology to evolve in the next 3 to 5 years?

“Integrated experience across home life, transportation, work life. Intuitive interaction and information. Quick actions. Personalized service and interaction.”

How do you expect virtual assistant technology to evolve in the next 3 to 5 years?

“It’s a different tool to provide the same services a customer service rep would be able to provide or is available on the web. Instead of the phone app, it’s a voice skill. This could be for customer service or energy efficiency.”

How do you expect virtual assistant technology to evolve in the next 3 to 5 years?

“Rapid growth in connected products and consumer-facing applications give rise to new services pulling consumers away from utility relationships.”

**How do you expect virtual assistant
technology to evolve in the next
3 to 5 years?**

“Run the home.”

How do you expect virtual assistant technology to evolve in the next 3 to 5 years?

“... evolve from a ‘pull’ strategy (where people ask them questions) to a ‘dialogue’ strategy where they’re truly aware of the conversation, presence, and provide value to the user by assisting with reminders and tasks.”

Questions?



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