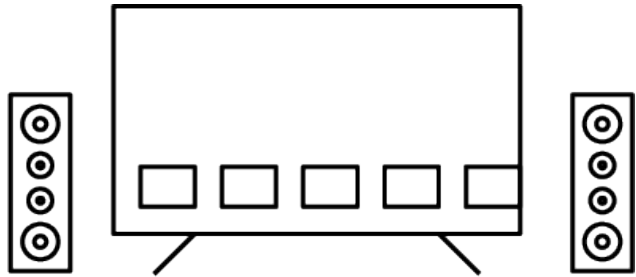
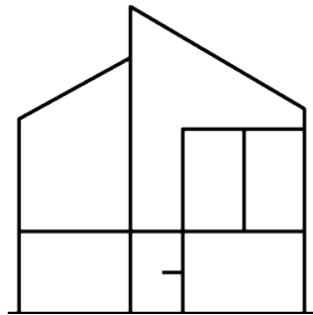


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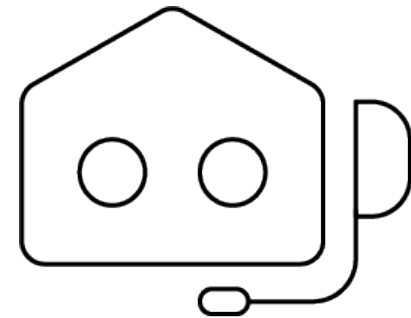
# QuickSet for Set-Top-Box



Better Entertainment Experience



Better Smart Home Experience



Better Support Experience

OUR SOLUTIONS



# QuickSet Cloud, software and services



Universal Electronics - QuickSet

## QuickSet Cloud is the industry standard for home control

- Launched in 2008, QuickSet has been deployed in over 600M devices with ~225B transactions
- Device and system knowledge base for discovery, control protocols, functions and system behavior
- Control data for over 27.6 million unique fingerprints across nearly 1.2 million devices from 13,000 consumer brands, offering true interoperability between home entertainment and smart home devices and ecosystems
- QuickSet Cloud architecture is built with control engines and discovery, automation and management frameworks with capability for IP, RF4CE, Zigbee, Bluetooth and Infrared

---

ENABLING NEW CAPABILITIES

## QuickSet for Set-Top-Box

QuickSet solutions provide:

1. Set-up & control of Entertainment devices
2. One touch view experience for accessing content across devices
3. Advanced discovery & control capabilities of connected devices and their services over multiple protocols
4. Blends Entertainment & Smart Home experiences

# QUICKSET<sup>®</sup>

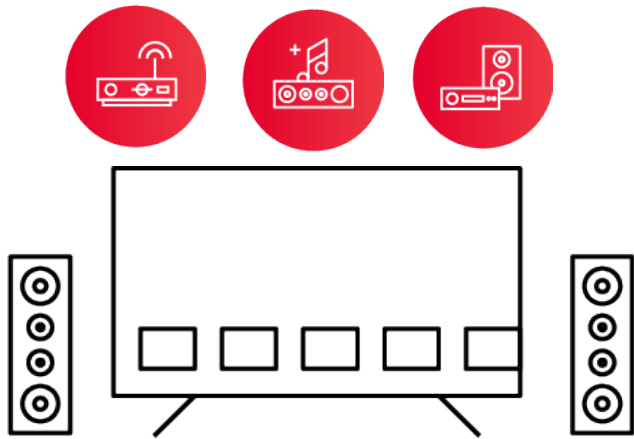
*Detect, control and interact with virtually every device within the home using the largest knowledge graph of devices.*

QuickSet use cases

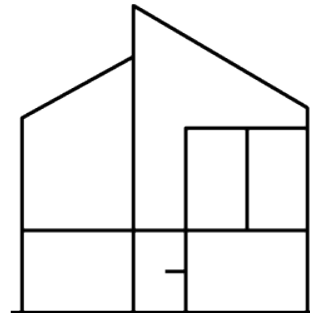
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# Simplify Setup and Control with QuickSet Cloud

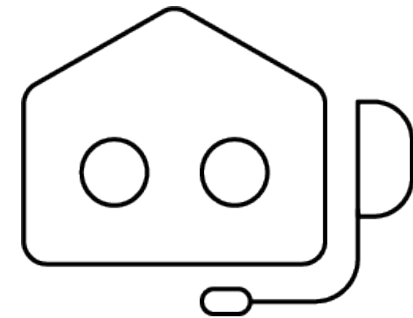
Automatic Setup  
One-Touch View



Better Entertainment Experience



Better Smart Home Experience



Better Support Experience

## Top three remote control pain points

### Setup confusion

- How to program?

### Input confusion

- What input is my device on?

### Don't understand the remote

- So many keys, what do they do?



Remote controls can be confusing

# Traditional programming

## Programming methods

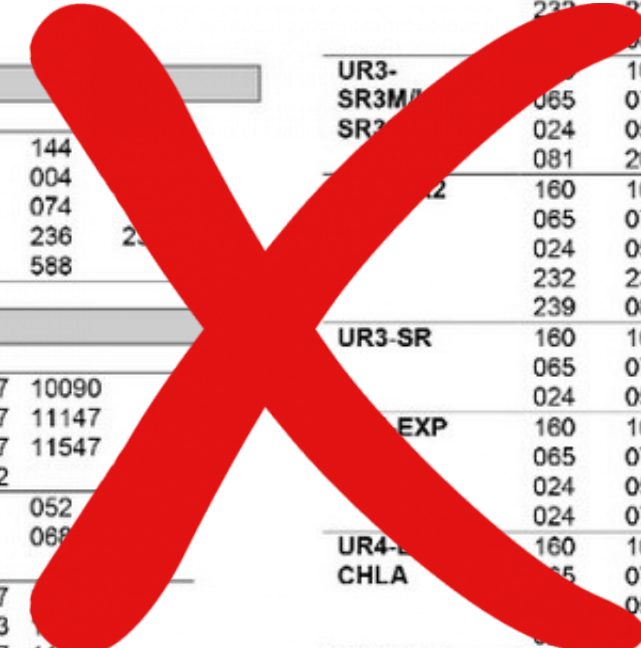
- 4, 5 or 6 digit code lists: trial and error

## Success rate

- Time consuming to achieve 100% match if even

## Upgrade / reprogramming

- 15% increase in service calls for reprogramming



Cox	065	006	004	023	
DIRECTV	024	056	074	152	
DISH NETWORK	081				
TIME WARNER CABLE	UR2-DTA	160	161	144	156
U-VERSE	065	070	004	023	
VERIZON	024	056	074	152	
		232	233	236	238
			081	588	
<b>Cable Vision</b>	UR3-SR3M	160	161	144	156
Silver	065	070	004	023	
Optimum	024	056	074	152	
		160	161	144	156
		065	070	004	023
		024	056	074	152
		232	233	236	238
		239	081	588	
<b>Charter</b>	UR3-SR	160	161	144	156
MOTOROLA	065	070	004	023	
OCAP-4	024	056	074	152	
		160	161	144	156
		065	070	004	023
		024	056	006	023
		024	074	152	
MOXI MC3	UR4-CHLA	160	161	144	156
	065	070	004	023	
		024	056	006	023
		024	074	152	
CHARTER	UR4-EXP	160	161	144	156
1060BC2/106	CHD1	065	070	004	023
0BC3		024	056	006	023
		024	074	152	081
	UR4-EXP	160	161	144	156
	CHD2	065	070	004	023
UE ATLAS 5					
DVR/PVR					

Code entry is complicated



## GUI-based programming

### Brand-based setup

- User needs to select a brand on set-top-box GUI and then try if they work one by one.

### Model-based setup

- User needs to select a brand and model number on set-top-box GUI and then try if they work.

### Automated setup (Unique to UEI)

- QuickSet automatically discovers the TV and pairs the Set-Top-box remote with the TV; no intervention required.
- QuickSet Cloud keeps adding new control protocols and codes and keep you up to date.



No more setup confusion as  
devices automatically work

## 15% of TV users struggle with switching inputs

### Streaming leads to more input switching

- Many people watch streaming services on other device than their pay TV set-top box
- Smart TV is most used platform for streaming video and growing

### Gaming forces input switching

- Game consoles are using other HDMI port; even in sleep mode, game consoles keep active input

### Switching input creates confusion

- Several major TV brands will not automatically select the latest active input of the set-top box; needs to be manually selected each time



Streaming and gaming  
creates input confusion

## One Touch View

- Single button to instantly get user to watching content
- Powers up required devices automatically
- Switches inputs on TV and AVR

## Dynamic Key Mapping

- Remote keys map automatically to devices based on activity
  - Volume goes to AV receiver
  - Channel goes to STB
  - Play/Pause goes to STB/DVR
  - Input goes to TV
  - Power goes to ALL

## Adaptive Control

- Shows only the keys you need
  - Digit keys in Live TV mode
  - Fast forward in Recorded Content mode



No more input confusion with  
One-Touch View

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# QuickSet Data Insights

A series of white, curved lines that originate from the bottom left and fan out towards the right side of the slide, creating a sense of motion and data flow.

## QUICKSET DATA INSIGHTS

# QuickSet for Connected AV Home Entertainment

Use QuickSet Cloud Data Insights to determine what devices are connected to the TV

- What devices are connected to the HDMI network?
- What is the make and model of the TV?
- What is the age of the TV?
- Does the TV support HD, Full HD or 4K?



Understanding the installed base

DATA INSIGHT CRITICAL FOR PRODUCT FEATURE,  
PRODUCT USAGE ASSESSMENT

# Data Insights

Provides insights for customer on device ownership, usage and user behavior

- Device: model/make, year, capabilities
- Network: inputs, active usage, other devices
- Services: downloaded apps, app usage

Predicting and reducing customer support

- Understanding means predicting customer support (especially on CPE installation)
- Understanding where customer is watching streaming services (which device, how often, etc.)



## QuickSet Cloud Data Insights

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# QuickSet Advanced Entertainment use cases

IP Discovery & Control

## USE IP DISCOVERY & CONTROL CAPABILITIES

# QuickSet for Connected AV Home Entertainment

Expand discovery & control capabilities across devices

1. Use IP control capabilities
  - Discover Smart Home devices in the home network
  - Add control capabilities for IP devices, such as Sonos speakers
2. Provide insights
  - Which VOD apps are installed
  - How often are VOD apps used
  - From which device are Apps used



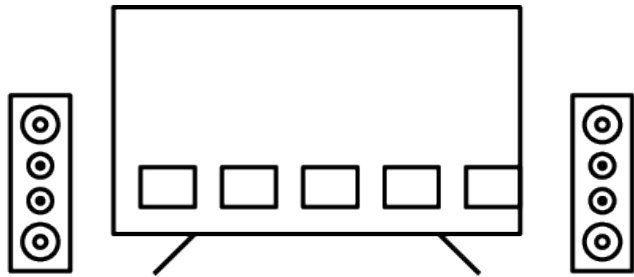
Discover & control devices in the home network and their installed apps



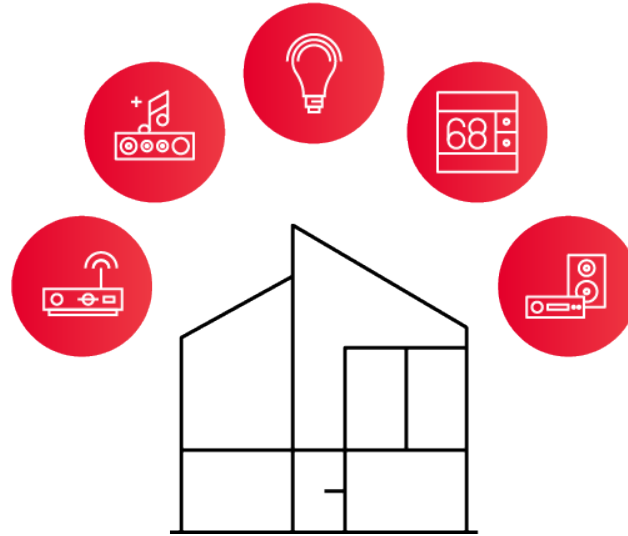
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# Blending experiences with QuickSet

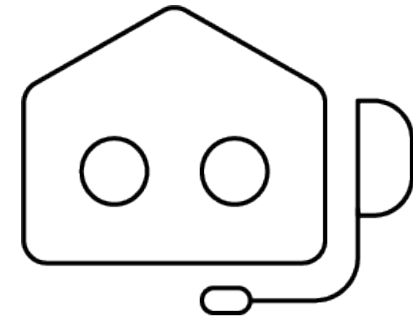
Blending smart home and entertainment experience



Better Entertainment Experience



Better Smart Home Experience



Better Support Experience

## BLENDING SMART HOME WITH ENTERTAINMENT EXPERIENCE

# QuickSet in the Connected Home

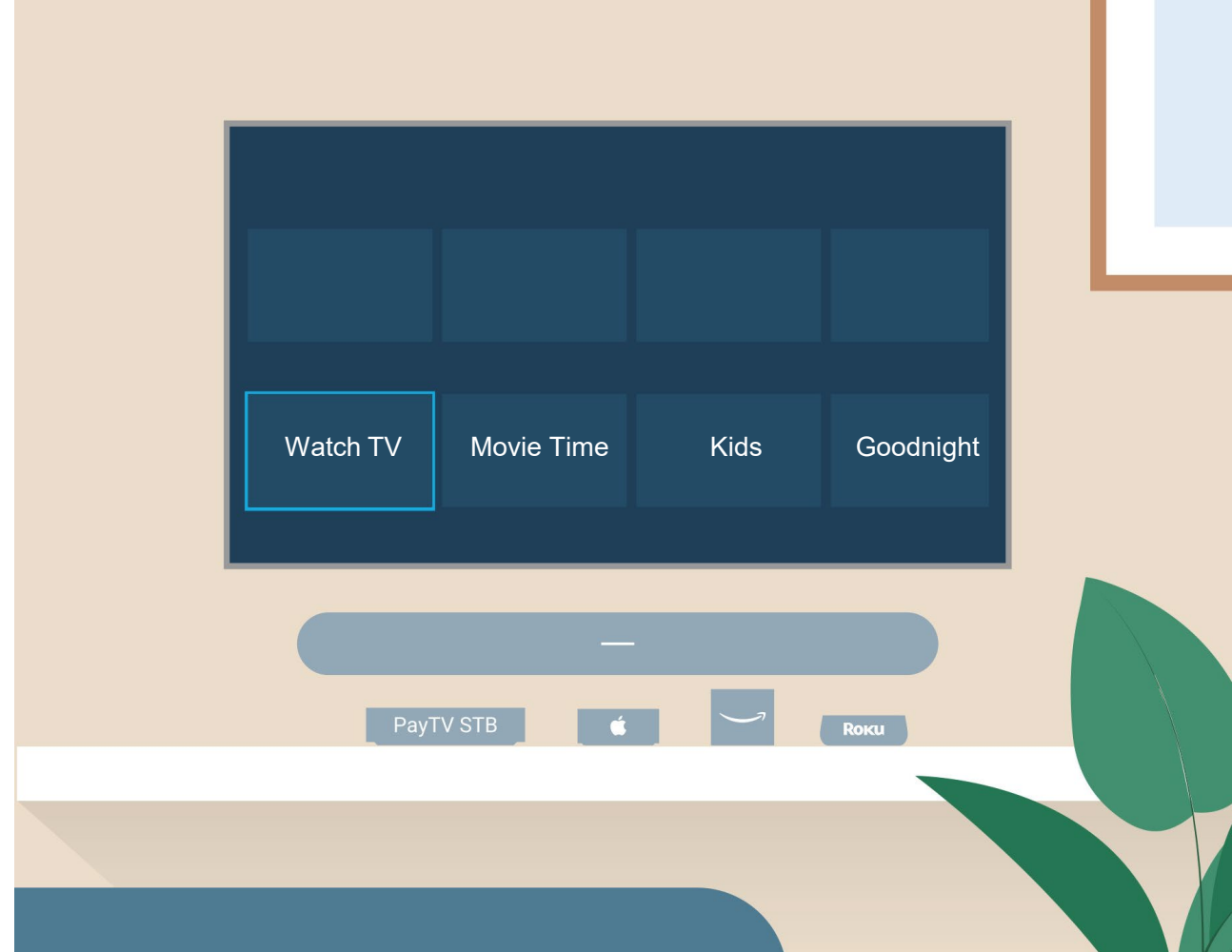
Enhance control capabilities with voice assistants or own Smart Home capabilities

Add interoperability with 3rd-party voice assistants

- QuickSet interoperability offers compatibility with third-party assistants offering the “One-Touch View” experience

Offer own Smart Home capabilities

- Integrated into the UI



## Extending with Smart capabilities

# Interoperability with third-party voice assistants



Alexa,  
Watch  
ESPN



Ok



PayTV STB



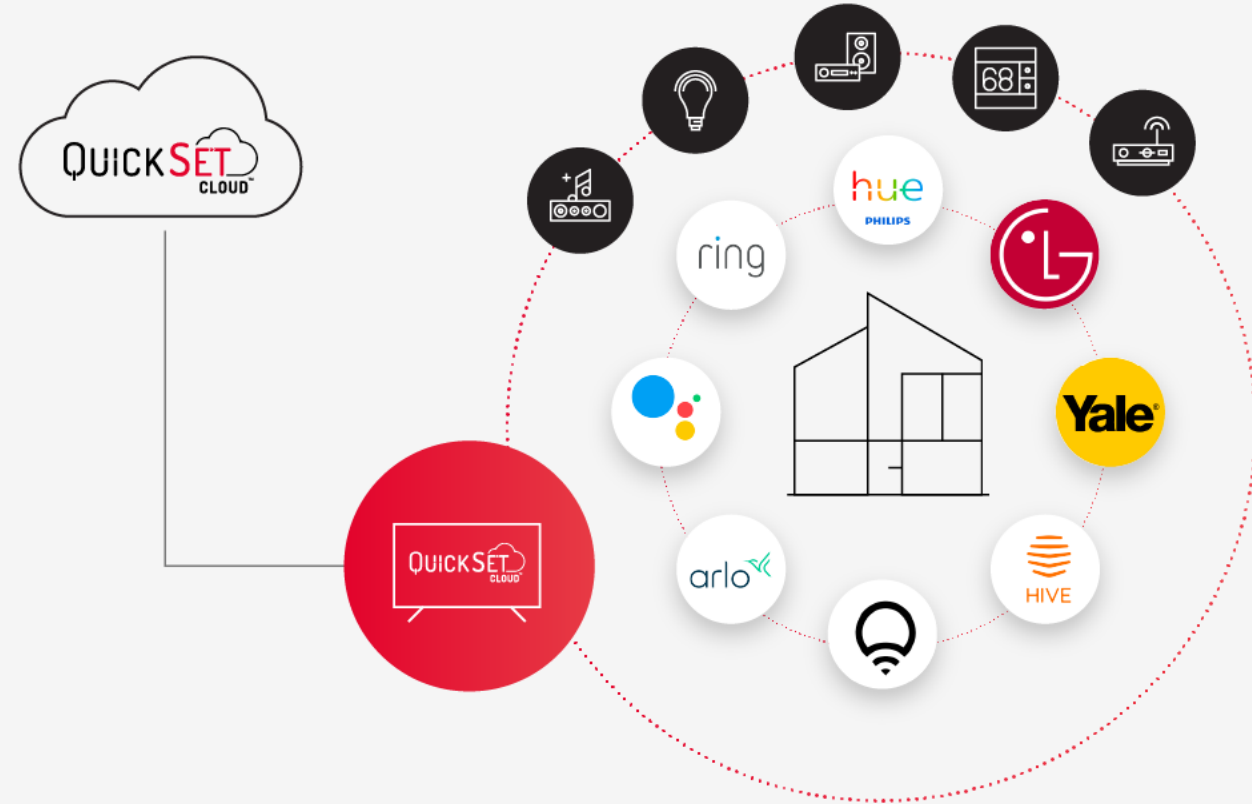
Roku

INTEROPERABILITY AS A SERVICE

# Interoperability

Reduce friction, improve compatibility and lower operating cost.

- Unifying entertainment control with smart home automation to deliver a complete smart home experience
- Managed and maintained interoperability means a pain-free path
- Ensures compatibility with what consumers already have within their home
- Extends existing retail voice assistant's features (Google Assistant / Amazon Alexa)



## Experience seamless interoperability with QuickSet

- Make your device compatible with the **600 million devices** running QuickSet.
- Make your device compatible with major IoT hubs.
- Make your product work with other assistant devices.

# Blend Entertainment and Smart Home experiences





# Smart Home – a curated experience

Unifying Entertainment & Smart Home Control

**Provide**

Provide curated list of devices for easy entry into Smart Home Lifestyle device starting with Lights, Plugs, Thermostats...

**Bring**

Bring Interoperability and intelligent onboarding to blend Entertainment and IoT devices  
Made easy with other UEI Offerings like Virtual Agent

**Support**

Support for existing and new devices within the home across varied protocols



CURATED LIST OF SUPPORTED DEVICES

# Smart Device Expansion (IP)

The Works With QuickSet program is a curated ecosystem blending the entertainment and smart home experiences. Ensuring a product is compatible with what consumers already have in their home including existing entertainment devices, smart speakers and a wide range of IoT Smart devices such as:

Lights	Switches/ Plugs	Thermostats	Hubs	Locks	Cameras/ Doorbells
<ul style="list-style-type: none"> <li>•Philips Hue</li> <li>•LIFX</li> <li>•OSRAM</li> <li>•IKEA</li> <li>•TP-Link</li> <li>•Yeelight</li> <li>•Eufy</li> <li>•Sengled</li> <li>•Nanoleaf</li> <li>•Hive</li> <li>•Wiz</li> <li>•Nexlux</li> <li>•Magic light</li> <li>•Smartthings lighting</li> <li>•...</li> </ul>	<ul style="list-style-type: none"> <li>•Belkin Wemo</li> <li>•TP-Link</li> <li>•Leviton</li> <li>•Etekcitey</li> <li>•D-Link</li> <li>•Hive</li> <li>•IKEA</li> <li>•iHome</li> <li>•Awair</li> <li>•Homematic</li> <li>•Eufy</li> <li>•ConnectSense</li> <li>•Meross</li> <li>•...</li> </ul>	<ul style="list-style-type: none"> <li>•Honeywell</li> <li>•Hive</li> <li>•Radio Thermostat</li> <li>•Tado</li> <li>•Netatmo</li> <li>•...</li> </ul>	<ul style="list-style-type: none"> <li>•SmartThings</li> <li>•Philips Hue</li> <li>•IKEA</li> <li>•Hive</li> <li>•Wink</li> <li>•Insteon</li> <li>•Bosch</li> <li>•Homeatic</li> <li>•Hunter Douglas</li> <li>•OSRAM</li> <li>•August</li> <li>•Sengled</li> <li>•...</li> </ul>	<ul style="list-style-type: none"> <li>•August</li> <li>•Yale Assure</li> <li>•...</li> </ul>	<ul style="list-style-type: none"> <li>•Amcrest</li> <li>•August</li> <li>•D-Link</li> <li>•Doorbird</li> <li>•Garmin</li> <li>•...</li> </ul>

WORKS WITH

**QUICKSET**

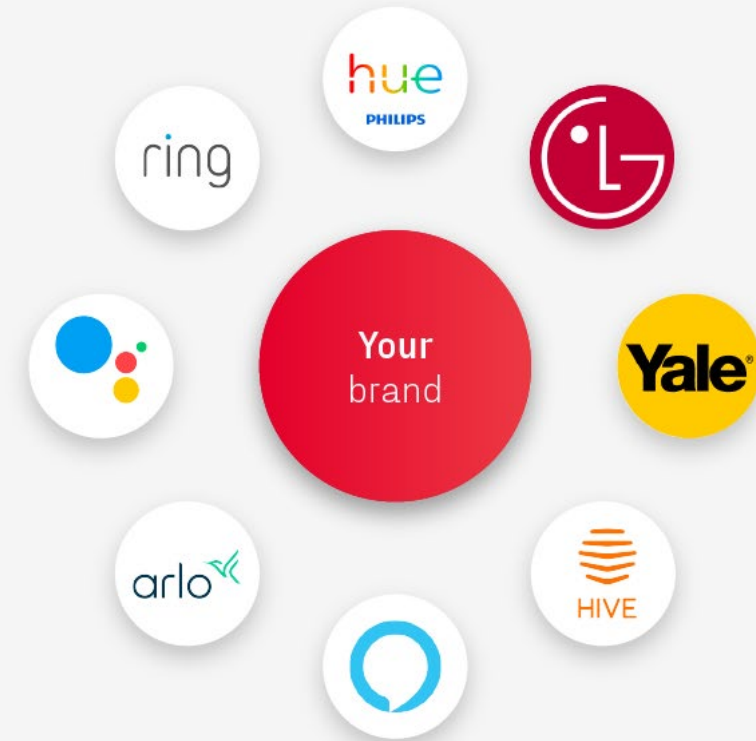


Provide curated list of devices for easy entry into Smart Home lifestyle device starting with Lights, Plugs, Thermostats...

COMPATIBILITY WITH DEVICES AT HOME IS THE  
NUMBER ONE DRIVER FOR PRODUCT PURCHASES

## Interoperability as a Service

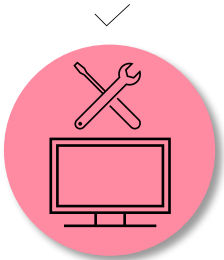
- Addresses consumers' needs as well as manufacturers' challenges
- Ensures the product is compatible with what consumers have in their home whether it be an existing hub, smart speaker or automation platform as well as those devices Powered by QuickSet



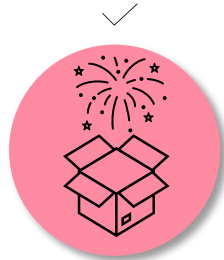
# Interoperability as a Service



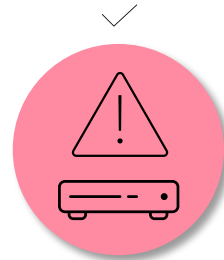
## Self support service for



Guided Device Onboarding



Feature Discovery



Troubleshooting

When combined with QuickSet it is enhanced with the knowledge of existing devices at the home including real-time access to secure remote troubleshooting features.

POWERED BY

**QUICKSET**<sup>®</sup>



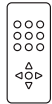
An integrated tier 0 support service for Entertainment and Smart Home devices.



## Video Service Providers



Helps the user with Self Install Kits



Set Top Box and Remote-Control Onboarding



Troubleshooting for TV and Audio Devices



Integration on Customers Support Site



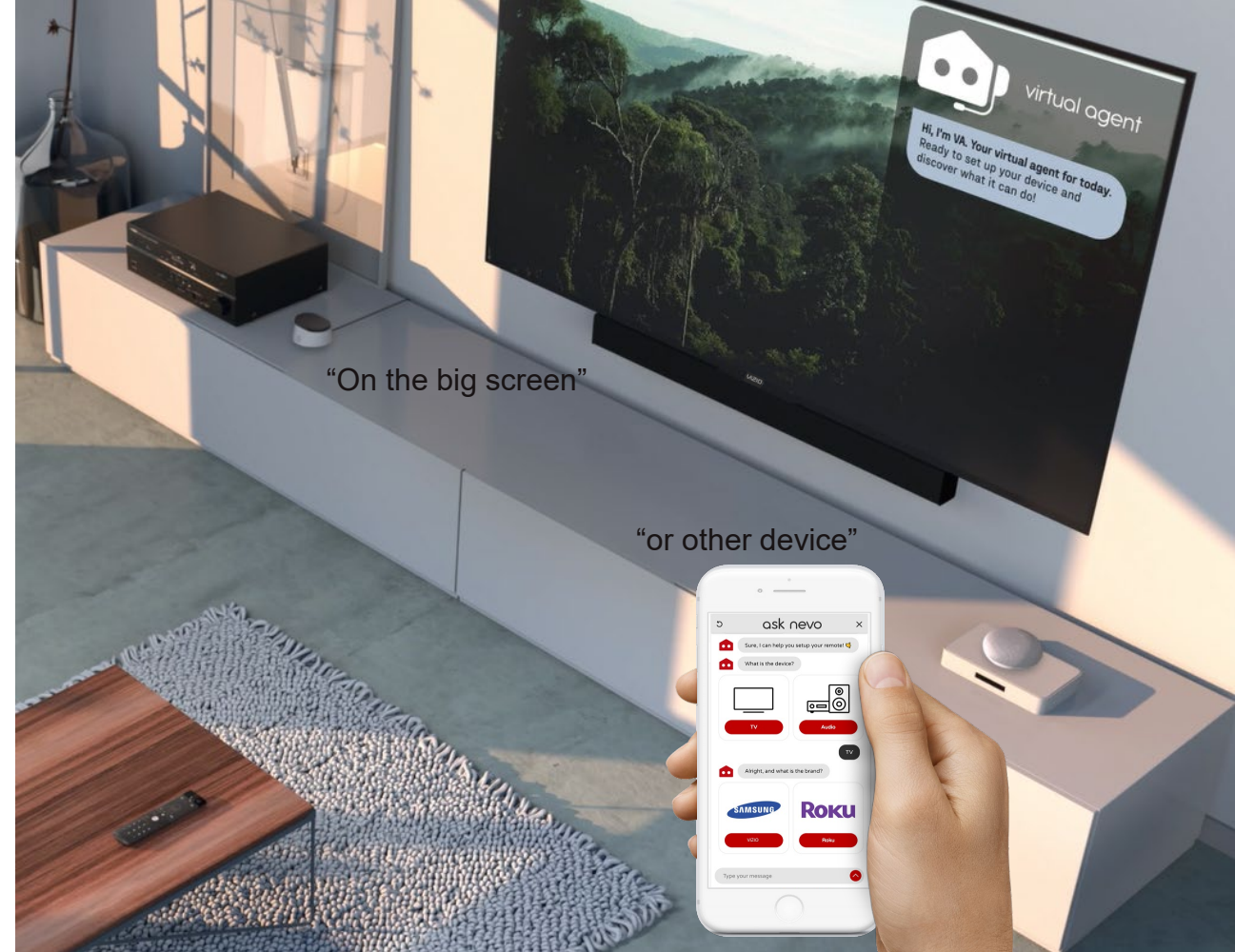
Hand Off to Live Human Agents



Customer Branded Experience

POWERED BY

**QUICKSET**<sup>®</sup>



An integrated tier 0 support service for Entertainment and Smart Home devices.

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# Matter

*Matter addition to QuickSet*

# With the Promise of MATTER, Why QuickSet?

## The Reality of the Industry

The goal of the standard is to make all smart home devices interoperable **BUT not all devices will be Matter addressable.**



---

### Strategy Alignment

The Matter strategy does not align with some manufacturers' strategy  
*e.x. certain providers do not wish to participate in the multi-admin nature of Matter.*  
*e.x. Most non-Android TV STB will not support Matter*

---

### Technical Feasibility

Majority of deployed devices simply cannot achieve matter compliance due to hardware constraints  
*e.x. Some deployed smart home devices only have sufficient RAM and Flash to run either zigbee, Thread or Wi-Fi protocol, but insufficient to add Matter stack on top of that which today is ~ 12MB*

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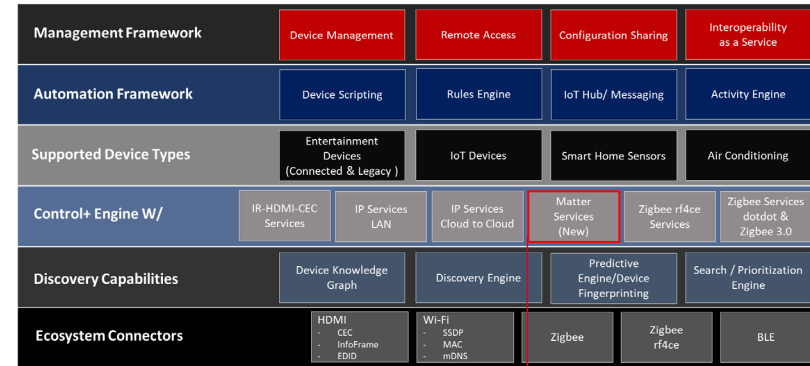
### Upgrade Path

Many devices will not be matter upgraded  
*e.x. Signify has announced that it's updating the bridge for its Philips Hue smart lights to support Matter while Belkin (Wemo) announced that existing Wemo products will not be upgraded to support Matter*

WITH THE PROMISE OF MATTER, WHY QUICKSET?

# Enhanced Control

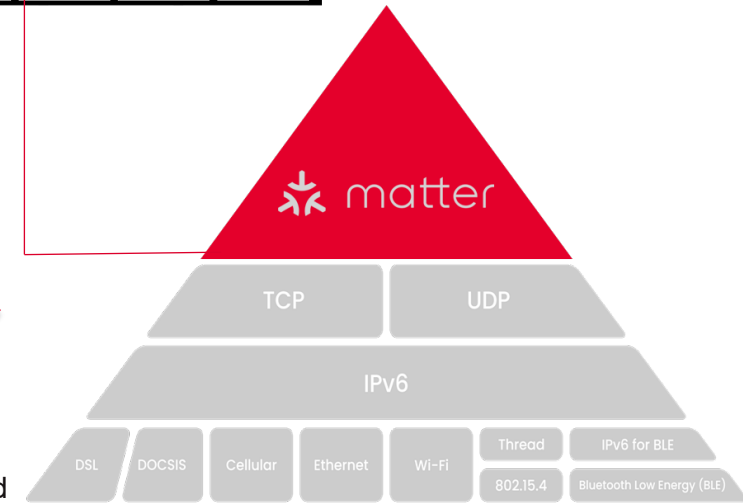
- A powerful and simple **single interface** for customers to merge and **expose** devices with varying **protocols & capabilities**.
- **Matter open stack, made simpler:**
  - Knowledge graph that understands device specific steps and APIs for onboarding of both devices as well as controllers
  - Continuous testing, updating and maintaining device knowledge graph to include new variations, and regions as an on-going dedicated effort
  - Device specific virtual agent to support on and off device troubleshooting and assistance
- Simplifies onboarding of devices through device specific onboarding and other offerings like Virtual Agent
- Simple and Unified API and device model to discover, onboard and control Matter enabled and legacy devices



QuickSet Framework



Matter Standard



## Control+ Engine with Matter

Discover, onboard and control for Matter compatible devices. *QuickSet works as both a Controller and an Accessory to provide compatibility and interoperability with other existing or new Matter devices in the home.*

# Interoperability enhanced

- Connect with legacy & new devices to cover devices that already exist in the household as well as the new ones introduced
- Extend the interoperability to HVAC devices – Which today primarily are controlled through infrared
- Support non Matter enabled IoT devices such as lights, switches, etc. irrespective of the protocol used

QUICKSET®

- M** Matter compatible devices
- Q** Work With QuickSet devices





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Thank you!

