Is TV the Gateway to Smart Home?
Introduction

The smart home concept holds great potential to transform consumers’ daily lives. For Service Providers, meeting the demand for a connected life provides an opportunity to add new services, which translates into increased revenue per user and greater customer stickiness. In this paper, we will address the opportunity for Service Providers to build consumer IoT into their bundled offerings to increase customer value while addressing what hasn’t yet been addressed:

- Consumer usability: What is the best user interface for the consumer to manage their smart home?
- Disparate backend systems: Should Service Providers invest in two siloed backend systems, one for smart home and another one for TV services, or should it be the same backend system?

The IoT and Smart Home Market Opportunity

“Internet of Things” (IoT) is the interconnection of our physical environment with the Internet. It is an ecosystem of devices that are connected to the Internet and have built-in software smarts for sensory and movement recognition, device data collection and management, as well as data analytics. It comprises digital thermostats, automobiles, surveillance, cameras, utility (energy) meters, and much more. The IoT market forecast is impressive: IoT is expected to grow from USD 130.33 Billion in 2015 to USD 883.55 Billion by 2022, at a CAGR of 32.4% between 2016 and 2022 (MarketssandMarkets 2016)

The IoT data market growth represents a greenfield opportunity for Service Providers, particularly in the emerging smart home area, which is a subset of IoT. Simply put, smart home is defined as a home equipped with lighting, heating, and electronic devices that can be controlled remotely by phone or computer. The smart home market is expected to grow from USD 46.97 Billion in 2015 to USD 121.73 Billion by 2022, at a CAGR of 14.07% between 2016 and 2022. (MarketssandMarkets 2016)
3 Use Cases

Consumers are considering smart home solutions for various reasons, including health, safety/privacy, and the ability to remotely control devices and things. Some consumers are using video monitoring to remotely care for a loved one (elderly grandma) or pets left at home alone.

Key use cases include:
- A gate, door, or driveway that alerts consumers there are visitors
- Sensors around the house that send alerts to consumers when detecting water or gas leakage
- A fish aquarium that informs consumers if the fish needs food or if the water needs more oxygen
- A wearable or video monitoring that tells consumers how grandma is doing
- A window or door that alerts consumers when it is left open
- An alert sent to a device that includes a short video synopsis allowing consumers to quickly review video footage of the past hour in 1, 2, 5 or 10 seconds.

4 Challenge and Opportunity

The challenge with the adoption of smart home solutions is not the technology, because it exists today. The crux of the issue is a matter of consumer trust.

Increasingly, consumers are being bombarded with multiple IoT and smart home offerings from multiple technology vendors. The problem is that consumers don’t know or trust these technology vendors. This opens a huge opportunity door for Service Providers to leverage their trusted relationship with consumers to offer smart home technology and services in home automation and security, as a starting point.

In fact, given the size of the market, a few Service Providers are already offering smart home solutions. These solutions are being marketed and deployed as siloed ecosystems, which are operated separately from the Service Providers’ core business (Data/Internet/Broadband/TV/Phone).
However, building, selling, and maintaining siloed technology ecosystems is not a sustainable or cost-effective approach overall. Also, siloed ecosystems imply that Service Providers are not fully capitalizing on their unique advantage, which is consumer trust. To do so, Service Providers must offer smart home services included with Internet, phone, and TV bundles. But, before bundling can happen, Service Providers must look strategically at their core business and smart home technology to identify common elements or requirements, and unify them where it makes the most sense.

5 What’s Needed

Smart home services require:
- Significant storage growth to support data capture and analytics from large data files like images and videos captured by home security cameras, as well as log-file data captured from sensors.
- Infrastructure that supports video processing and delivery to multiple devices
- Scheduling and updating of recordings/events
- Service provisioning and subscriber management systems
- Allowing users to manage and control a range of connected devices and appliances in the home using a smartphone or tablet app, anytime anywhere.

Finally, to tap into this massive smart home market, Service Providers must deliver unified solutions that can be bundled together.

6 Leveraging Existing Expertise

Service Providers are uniquely qualified to deliver smart home devices or systems requiring connection to the Internet, because they know how to manage customers and media delivery, and how to deal with regulatory compliance, including managing 3PP devices. In other words, Service Providers have built extensive expertise in delivering content, broadband Internet services, video, linear TV, VOD and OTT services into consumer’s houses and personal devices.

Despite the cord-cutting trend, consumers still trust their Service Providers more so than any other independent smart home technology vendor trying to get acceptance into their homes.

To fully take advantage of this opportunity, Service Provider must put in place an infrastructure strategy that accounts for the deployment of a unified infrastructure for TV and smart home services with consistent user interface. Also, Service Providers must collaborate (build alliances) with 3PP vendors in smart home solutions, and bundle these solutions with their TV services.
Key smart home services to consider:

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<thead>
<tr>
<th>ALERTS FOR SMOKE OR FIRE</th>
<th>ALERTS FOR CARBON MONOXIDE</th>
<th>ALERTS IF DOOR OR WINDOW IS OPENED</th>
<th>LOCK/UNLOCK DOOR</th>
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<tr>
<td>MOTION SENSOR TRIGGER ALERT</td>
<td>TURN ON/OFF LIGHTS</td>
<td>MONITOR, PROGRAM AND ADJUST THERMOSTAT</td>
<td>OPEN/CLOSE GARAGE DOOR</td>
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<tr>
<td>TURN ON/OFF OR CHECK STATUS OF APPLIANCE</td>
<td>CAR INFOTAINMENT</td>
<td>HOME VIDEO MONITORING</td>
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7 Ericsson: Connecting the TV and Smart Home Services

As part of IoT, smart home solutions generate a massive amount of data and, like TV services, it must deliver a high-quality user experience on any device, anytime, anywhere. With Ericsson, Service Providers can expand and evolve their bundled offerings with new services that account for the surge in connected and smart home devices.

Known for its IPTV, over-the-top, and cloud-based TV platforms—with cloud DVR, video-on-demand (VOD), and time-shifted TV services, Ericsson can help Service Providers to unify the infrastructure for both, TV services and smart home offerings, while delivering a consistent user interface and experience across all screens and services. With Ericsson, Service Providers can lower total cost of ownership while gaining a future-proof, unified platform for TV and IoT/smart home services.
How it Works

Ericsson’s approach aims at extending existing TV service functionality to smart home services. With a powerful, flexible, and common infrastructure, Ericsson helps Service Providers to offer and monetize a new service layer to replace current revenue losses from cord-cutting and cord-shaving, with the goal of increasing subscribers and adding value to their audio/visual (A/V) pipeline and bundling options.

The Ericsson solution enables Service Providers to deliver:

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<th>TV SERVICE</th>
<th>SMART HOME SERVICE</th>
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<td>SET-TOP-BOX (STB)</td>
<td>One-stop-shop for Pay-TV and OTT content with seamless and integrated experience.</td>
<td>Leverage existing STB seamless and integrated TV experience (UI/UX) to access, navigate, manipulate, and talk through the IoT (smart home) app – to turn the thermostat on/off, interrupt what’s being watched now, show security video on the corner of the screen, view security video synopsis.</td>
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<td>APP INTERFACE (Cross-platform mobile devices)</td>
<td>Consumers use Service Providers’ branded app on smartphones &amp; tablets to watch and record shows, as well as TV remote control.</td>
<td>Consumers use Service Providers’ branded app (same as TV) to manage and control their smart home services</td>
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<td>SCHEDULER</td>
<td>Consumers schedule the recording of their TV shows</td>
<td>Consumers schedule events such as turning on/off the dishwasher, lights, air conditioning, and more.</td>
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<td>VIEW-REWIND VIDEO</td>
<td>Consumers watch their TV, VOD, and time-shifted TV content - anytime, anywhere, and on any device.</td>
<td>Consumers watch surveillance videos of their homes or summer houses - anytime, anywhere, and on any device.</td>
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<td>VIDEO RECORDING</td>
<td>Consumers have “80” hours of cloud DVR recording of their programs from broadcasters</td>
<td>Consumers have “80” hours of recording of any video,</td>
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<td>QUOTA (Example)</td>
<td>including home surveillance videos.</td>
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<td>ALERTS MANAGEMENT (Example)</td>
<td>Consumers get personalized alerts and recommendations of available shows for binge-watching on any device. Consumers get real-time alerts and notifications based on data from smart appliances, smart home safety &amp; security systems, and energy equipment.</td>
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<td>MANAGEMENT OF SUBS &amp; SERVICE PROVISIONING</td>
<td>Service Providers manage customer acquisition, service entitlement, billing, services &amp; packages creation and activation/de-activation/change plan, subscriber account management, and TV service provisioning. Consumers are already familiar with it all. Service providers can leverage same TV service subscriber and service provisioning processes and workflows. Consumers are offered the option to subscribe to &quot;add-on&quot; smart home service packages.</td>
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<td>SECURITY</td>
<td>Video content and service delivery are protected with studio-approved Digital Rights Management (DRM). Smart home services can leverage the same level of video encryption DRM used in TV service.</td>
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### 9 Benefits

**For the Service Providers**
- Opportunity to retain customers (stickiness)
- Increased revenue streams
- Unified and cost-effective management and maintenance of TV and IoT/smart home backend and front-end systems

**For Consumers:**
- Consistent user experience between TV and smart home services
- Greater options for bundled services beyond TV, data, and phone services
- Anytime, anywhere access to services
Summary

There are real opportunities for TV Service Providers in the IoT and smart home market. With its distinct advantages based on trusted relationship with customers and extensive experience of in-home service management, entertainment and billing, Service Providers are uniquely qualified to fully capitalize and monetize this untapped business opportunity, with a unified approach.

Ericsson is uniquely positioned to empower the next generation of TV & media Service Providers. The innovative cross-section of making TV the gateway to IoT/smart home services is a step forward towards the future. Ericsson enables 3PP app developers, start-up companies, and established vendors in smart home technologies to work with Service Providers and the Ericsson’s solutions to build offerings for Service Providers to differentiate, grow revenue, and increase customer satisfaction.