Capturing Next Generation Smart Home Users with Digital Home

A Huawei White Paper by Carol Wan & Don Low
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Executive Summary

In this whitepaper, we will attempt to explore the concept of digital home, its relationship with smart home and why it is important. The digital home trends that have been observed are actually signs brought about by improvements from technology. The need to stay communicated has pervaded in our lives so much so that our personal devices, e.g. our smart phones, can and should now be linked to most of our important things in life. This increase in digital lifestyle has translated into a big challenge for the operators.

As the path towards digital homes services provisioning and delivery needs to be thought through and managed carefully, the whitepaper explored various consideration factors, including factors like government policies, the availability of vendors for partnership/acquisition on digital home services provisioning, the changes and improvements on the operator’s infrastructure, organization structure as well as operations support.

Taking each factor into consideration, a set of guidelines is recommended. Operators would first need to strategize and model their businesses for digital homes, hence ensuring visibility on goals as well as addressing any gaps uncovered. Next, operators would need to establish collaboration models with their vendors and internal resources. The third would then be to catalyze the changes within the organization to prepare for digital homes services provisioning. Last but not least, the GTM strategies will need to be laid out to ensure a successful launch of the business.

Two case studies are shared, highlighting the various solutions from Huawei that will be able to help operators rapidly and efficiently create a digital home business, hence creating value for the operators, its customers and the society as a whole.
Section 1: Home Evolution through Digitalization

Through our intelligence and wisdom, human beings have been the only race on earth that has continuously made improvements to their lifestyle and well-being. Where we need to look for this major change in living would be our homes. From primitive caves lit by camp-fire to the modern built houses powered by electricity, advancements in technology have radically changed the way we live. Not only is our home a place of protection and shelter, it can now also be our entertainment hub, our center for communications and connectivity as well as a smart assistant in helping out with our living.

Operators, be it providers for mobile or fixed networks, can no longer ignore the fact that their traditional businesses have evolved. Not only should they be concerned about the quality of the access pipe, they must also look into providing services, bundled above the bandwidth that they are selling. As home has always been one of consumer’s basic needs, operators should now consider how to tap into the home market by offering digital home services.

1.1: Digital Home – Enabler for Smart Home Services

Just imagine your home is smart enough to help you with the following activities: taking care of your aged parents (assisted living) through monitoring of their health conditions and call for help when necessary; home appliances like refrigerators and washing machines are networked and are smart enough to automatically send out alerts or adjust settings based on situations; home lightings, air-conditioning and heating are synchronized with inputs from various electronic sensors to minimize energy usage, offering savings and environmental benefits (Energy management); surveillance cameras and door locks can be controlled remotely via authenticated means through the internet; and finally, a central gateway that helps link the connectivity of the earlier mentioned services, providing communications services and managed content and entertainment to create an enhanced, unified home experience.

What is mentioned above is no longer a vision but a full suite of services that are converged into the Smart Home concept, with the Digital Home (connectivity and entertainment) acting as the main foundation of this experience. Figure 1 shows the service categories for smart homes. Even though there exist 6 main options for now, but in reality, we would expect endless opportunities in the future for smart homes due to the benefits of innovation and ICT transformation.
1.2: What drives Digital Home?

While the smart home concept has been closely linked to “smart utility” (e.g. smart metering), energy-consciousness however, may not be the major driver for the adoption of smart home by home owners. The increasing savvy-ness of consumers in general, driven by the highly competitive market and advancement in technology has contributed much to the smart home concept. It is through such a technological breakthrough that provides a platform for service providers to use digital home’s connectedness to increase the adoption of smart homes.

1.2.1 Market

Consumers adopting a Digital Lifestyle

With the advancement of technology and changing expectation from home users, we see the needs for connected home services are evolving. The next generation home users demand for home automation, convergent experience on devices, real-time monitoring and remote management via mobility access.

Taking the home TV experience as an example--while iPTV is now readily available in many countries, operators and smart TV vendors are bringing a brand new TV experience to the home customers with VoD for movies, home commerce (shopping & ticketing), interactive quiz show, internet TV, content sharing between smartphone and TV, etc.

Besides, survey (see figure 2) also shows that home users are also becoming interested in other smart home application covering home security, energy management, online storage/back-up and even technical support consultancy for home.

Figure 2: Survey on Smart Home Services Preference

Survey of 9 countries by Ovum
Telecom Operators moving into Home ICT

Saturating market, threat from the OTT players, customer churn, stagnate revenue growth are the common drivers for many operators moving into the ICT arena. It is typical for broadband operators, in their early stage of market development, to focus on connectivity penetration and simple value adding services. As the market gets more mature, however, operators have to think about how to retain customer and increase APRU. Some operators have decided to launch digital home services as part of their connectivity service bundle.

Take for example AT&T Digital Life, a new division of AT&T, which announced its global monitoring and automation platform in February 2012. This offering, addressing multiple segments including aging-in-place, energy management and security, is available under license to service providers outside US.

In Europe, there are also active players, including Deutshe Telecom, who is offering its Qivicon Home Management Platform. This home gateway integrates many home management technologies and devices which can be managed via its One Portal on tablets and smartphones. In another example, Telefonica’s smart home strategy (within the Telefonica Digital division) plans to build different services on the home gateway in a stage manner and provide the product to its partner to commercialize and perform first line of support. It has started with an energy efficiency app and the gateway is made available to utility companies.

1.2.2 Technology

Growth of Broadband Access

Advancement in the communications technology has created new opportunities for not just faster transfer, but the birth of more innovative services, including that of digital homes.

Fixed Broadband

By 2015, there will be over 700 million fixed broadband connections, covering 33% of all homes globally, compared with 27% at the end of 2011. In mature markets, 76% will have fixed broadband connectivity by 2015. This is driven by national broadband policy, more sophisticated user lifestyles that demand broadband internet access and larger consumer technology wallets. On another hand for emerging markets, fixed broadband connectivity will be reach 22% by 2015. This adoption rate is motivated by lifestyle needs for internet access and affordability of fixed access network.

Mobile Broadband

Mobile broadband is increasingly becoming a necessity for subscribers on a global scale. The convergence of several factors such as availability of low end smartphones, strong demand for internet access, lack of fixed line access in some emerging markets, lower technology cost per MB, all mean that mobile broadband connectivity will grow rapidly with a CAGR of 35%.
Besides, according to a study from Google, about 93% of smartphone owners use their smart devices while at home. There is also a growing interest among the industry players to build applications on the smartphones to interact with other home devices, such as the TV, in a better and more integrated manner.

Cloud Readiness

Traditional home networking was concerned mainly with enabling devices within a home to share resources and content within that network. However, the cloud adds a new dimension by allowing some of that content and data to be hosted outside the home network in an away-mode that is still accessible. Many of the devices in the home today can connect individually to services in the Internet even though each may use different application protocols and APIs. Putting the intelligence into services in the network cloud helps to reduce the complexity of managing software & interoperability of devices in the home. Cloud enabled digital home services can offer many benefits, for example:

- To end users: As some of technical complexities and management are moved to the cloud (of service providers), end consumers will find it easier to adopt digital home services. The open nature of the ecosystem increases the choices and reach of devices and services.

- To service operators: Cloud computing technology offers operators an ideal environment for a highly efficient and highly flexible utility approach to services in the network. This will enable faster time to market, innovative business models, simplifies service support and more importantly better customer lock-in as customer data is stored in the service cloud.

Figure 4: Examples of Cloud-Based Digital Home Services
“App-ification” of home services

The industry is recognizing the role of smartphones and media tablets in making home automation more consumer-friendly. They will help the industry explore services that consumers will be willing to use and pay for. Examples of app-based models include smart phone and tablets as home automation controllers. For instance, Belkin has launched WeMo Home Control Switch, which is a smart device for lighting control. The other app-based models are smart appliances that support apps. At the Consumer Electronic Show 2012, Samsung showcased smart home appliances that support apps including a washing machine that can alert your mobile device when a load is completed. One will soon see popular consumer apps as well as appliance-specific apps being ported onto appliances.

![Figure 5: Smart Appliances Available in 2012/2013 by Manufacturer](image)

<table>
<thead>
<tr>
<th></th>
<th>GE</th>
<th>LG</th>
<th>Samsung</th>
<th>Whirlpool</th>
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<tbody>
<tr>
<td>Washing Machine</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Clothes Dryer</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Refrigerator</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Dishwasher</td>
<td>X</td>
<td></td>
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<tr>
<td>Cooking Range</td>
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<td></td>
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<td></td>
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<tr>
<td>Oven</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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Source: Gartner (March 2012)

Home gateway & automation network technologies

Home gateways are networking devices that connect a home to a broadband delivery network. These devices support remote control, detection and configuration by service providers, which makes them a focal point for delivering managed services in a home. There are efforts toward standardization of the service delivery and execution environment in a home gateway. In particular, the OSGi Service Platform specification defines a managed OS-like execution environment for multiple applications in a device such as a home gateway. Initiatives like the Home Gateway Initiative (HGI), is building on the OSGi specifications to standardize home network elements. The birth of HGI helped specify requirements and test plans for devices and managed services in the digital home, hence enabling many home gateways to support multiple network standards. As shown in Figure 6, there are several dominating wireless standards including ZigBee, Z-Wave and WiFi.

![Figure 6: Communication Protocols for Smart Home Networks](image)

<table>
<thead>
<tr>
<th>Network Type</th>
<th>ZigBee</th>
<th>Z-Wave</th>
<th>Wi-Fi</th>
<th>HomePlug Green PHY</th>
<th>6LoWPAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Band</td>
<td>868MHz, 915MHz, 2.4GHz</td>
<td>900MHz ISM</td>
<td>2.4GHz</td>
<td>N/A</td>
<td>900MHz, 2.4GHz</td>
</tr>
<tr>
<td>Peak Data Rate</td>
<td>20-900 Kbps</td>
<td>9.6-40 Kbps</td>
<td>54 Mbps(802.11g)</td>
<td>10 Mbps</td>
<td>20-250 Kbps</td>
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<tr>
<td>Cost</td>
<td>Low cost</td>
<td>Low cost</td>
<td>Higher cost</td>
<td>Low cost</td>
<td>Low cost</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Low power</td>
<td>Low power</td>
<td>Higher power</td>
<td>Low power</td>
<td>Very low power</td>
</tr>
<tr>
<td>Standard</td>
<td>Open</td>
<td>Proprietary</td>
<td>Open</td>
<td>Open</td>
<td>Open</td>
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6LoWPAN – IPv6 over low-power wireless personal area networks

Source: Gartner (March 2012)
Section 2: Digital Home Consideration Factors for Operators

Smart Homes, powered by digital home concept, requires a stable and consistent manner of delivery on connectivity by the operators in order to drive a high level of user experiences. This level of delivery is only possible when the external factors favoring the growth for digital homes exist.

The most crucial factor for all product and services sales is the market. For digital home’s growth, it is without a doubt that all the elements in the whole ecosystem of ICT will influence the rate of its adoption. The four main consideration factors that will determine an operator’s success in offering digital home services are Government Policies, Partnerships, Technology Platform and Organizational Capability.

1. Government and Communication Policies

The government always plays an important role on the countries’ level of communications and technological maturity. Their policies will directly and indirectly influenced the investments (internally driven or from overseas), R&D as well as the rate of adoption on communication technologies. Hence, digital home thrives best where the government made policies to better facilitate the adoption of faster broadband services.

Governments in various countries, like Singapore and Hong Kong, has taken steps to spur up their broadband initiatives; The ultra-high speed broadband network NGNBN (Next Generation High Speed Broadband Network) in Singapore aims to spur the development and deployment of innovative interactive digital services to use-case scenarios, including home use⁴, while in Hong Kong, the government had encouraged the roll-out of high-speed internet, which spurred the local operator(s) to roll out services like fiber-to-home connections that offer a maximum speed of up to 1 Gbps⁵.

2. Commercial Vendors and Partners

The other success factor would be the partnership with technology vendors, service/solution partners and standards groups. Partnerships can exist in different aspect of digital home service delivery - e.g. provisioning, distribution, content. Figure 7 shows the value chain of partners, where depending on services, the nature of collaboration could be very local or global in nature.

Figure 7: Operator’s Value Chain of Partners for Digital Home’s Critical Success

![Value Chain Diagram]

- Strategy
  - Strategy consultants (strategy development, market analysis)
- Business Model Development
  - Business consultants (business model creation)
- Services Design
  - ISVs, hardware / software vendors (service idea creation)
- Platform Creation
  - Content providers, ISVs, hardware vendors, apps developers (solution / services deployment)
- Go-To-Market
  - Distributors, Channel partners
- Operations/Provisioning
  - Managed services vendors
  - Service provisioning & technical support partner
Service delivery quality by these partners will determine directly the end consumer’s experience. Extending the bread and butter connectivity service to the offering of digital/smart home solution will test the operators on its ingenuity and ability to assess service vendors and to incorporate such services into the current workflow.

Another key success factor is the choosing and offering of a consistent, reliable solution (i.e. access gateways, set-top boxes) for the delivery of digital home services. Such solutions components are now commonly adopting one or more standards based on certain non-profit groups or business alliances (e.g. MoCA, DLNA). Operators can either join (self-capability) or partner with other solution company that possesses such know-how. In the current development, there are no single unified platform that governs the existing diverse protocols available (e.g. Z-wave, ZigBee, X10) in the market, hence there is a need for operators to choose vendors that can provide reliable solutions and products that will often include ease of installation, remote support and trouble-shooting.

3. **Cloud, Access and Devices**

From the infrastructure to the end-devices (e.g. home gateways, smart TVs, smart refrigerators, remote surveillance cameras), digital home technologies is a hybrid of communication technologies that requires an end to end effort on the operator’s part. To support the delivery of the whole ecosystem, operators needs to look at three key solutions-related elements: the cloud, the access pipe & infrastructure, and the end-user devices.

**Cloud:** Cloud Computing will play an important role in operator’s offering of digital homes services. Having the advantage of controlling the access part of the whole delivery chain, owning a part of the content delivery and applications will help to maximize the value of the businesses.

**Access:** How does the operator bring the services (data, voice) to the home users? For Fixed Broadband operators, the key to delivering good data services would be a high speed high bandwidth fiber-optics network. Similarly, mobile broadband operators will have to rely on high-speed high bandwidth network (i.e. LTE) for such a delivery. Key note is that band-width demanding services like IP video will be the likely service for digital home users, hence operator will need to consider a balance between coverage and capacity.

In the digital/smart home ecosystem, the operator needs to ensure that the home is always connected to the outside world as well as delivering a consistent quality of service. With improvements on new network planning and monitoring solutions, operators now have access to technologies that will enable to fulfill their Service Level Agreements (SLAs) and drive a continuous service experience for digital home users.

**Devices:** The current evolution of devices have helped to provide a variety of services into digital homes, forming a mash web of connected devices:

- **Smart TVs/ Set top Boxes / Smart Phones / Tablets:** Various electronic vendors have innovated and designed the end-devices to be able to smartly interact with the back-end systems (e.g. Content Delivery Networks), and more popularly with applications and content hosted on a cloud platform. The multi-screen concept is becoming a de-facto where many equipments / software manufacturers innovated for the same content to be made available across different devices.
• **Smart Utilities**: Smart metering is something that many countries and operators have begun testing upon (Germany, US etc.). It is without doubt that operators can now form new partnerships with utility companies for a joint go-to-market strategy.

• **Smart Appliances**: A snapshot on some of the M2M equipments include smart refrigerators that replenishes supplies automatically (online order), and remote control of door locks, security surveillance, temperature, lighting and curtains via tablets or smart phones. Operators hence need to consider the robustness of the network solutions so that it will be able to handle the future boom of volume and variety of devices per home.

Overall, operators will need to take note of the interconnectivity of these devices offered so that the whole solutions sold would work well together, sharing the same transfer protocol and discoverable on the same management platform.

4. **Organization and Operations Support**

Services support is one of the key elements for digital homes services delivery. Both operators and their partners will need to collaborate effectively and efficiently. From services conceptualization, applications and content development (IPTV, home surveillance, content download etc.) to services provisioning and delivery, a service workflow is required to ensure a good service delivery from end to end.

Bundled together in digital home services are the operations support and the respective new workflows that needs to be introduced. In addition to needing rotation of existing employees or inflow of new talent, there will be impact to operator’s internal work modules, including inventory change, returns and repair, warranty control, trouble-shooting & technical support, billing system change, product development and firmware upgrade.

The challenge would be how operator and its partners/vendors can help to bring value by streamlining the whole workflow and processes to fast provisioning and issues resolution. There is also the consideration of minimal support for customer’s devices not owned by the operator, and how they can interact with the whole smart home.
3.1 STEP ONE – Business Strategy & Modeling

If the operator is able to determine the completeness of all the factors for the market it is operating, it will mean that the operator will be in an optimal position to plan on rolling out digital home services.

A detailed level of business strategy for digital home will have to take a deeper dive into the type of business collaborations, internal enablement as well as go to market strategy (covered in later sub-chapters) to form a complete picture on the general direction the company has to adopt to drive the whole services roadmap from digital home to smart home business. In addition, the change in infrastructures, workflow or organizational structure has to be conducted to support the service launch. Hence it is very important for operators to consider also its services strategy, what are the services to be delivered, what methodology to adopt to make these home services a success.

The end-to-end business model of how the operator pushes out the services needs to be carefully built and planned out. From what services required from the partners to how the services are to be charged to the end customers, operators have to ensure the ownership of various service modules are well assigned and taken care of.

The final deliverables of developing the strategic plan would be a service roadmap, which will allow operators to understand how, what and when to achieve the required milestones, thus bringing clarity to the management team, the execution units and other stakeholders involved, as well as paving way for the required changes ahead (i.e. Internal Enablement).
3.2 STEP TWO – Business Collaboration

Figure 9: Digital Home Driven Ecosystem Diagram

Figure 9 shows the whole digital home driven eco-system, which consist of many elements. As the operator’s most important asset is with its customers, making sure that the services (Hybrid TV, communications etc.) delivered to the customer is of high importance. Of equal importance is the infrastructure that supports the whole service delivery. The key to success however, is the Business Collaboration that will bind the stakeholders together to create the infrastructure and support the services.

Whether the operator decides to choose organic growth via R&D or acquisition of companies, the eco-system will require some form of business collaborations with these vendors to achieve the “smartness” of the services. Operators having its business strategy mapped out will know which of the following business model to adopt.

a) Partners / Channels Development Program: For operators whose strategic goals gearing towards business collaboration, partnerships development would be the means to roll out digital home services. The benefits for the operator would be that it will not need to grow its own capabilities, hence taking a faster time to market and a lower initial investment.

b) Autonomous Innovation Unit: Similar to an incubation center, the operator can run an innovation excellence center, at the same time partnering with external scientists, innovators, entrepreneurs or developers or even vendors (Joint R&D Centers) to explore the possibility of introducing new digital home solutions. Although this move would incur some capex and requiring a longer turn-around time, but it would allow the operator to acquire unique capabilities that may present the chance of discovering a “killer application or use-case” for digital home.

c) Business/Innovation Acquisition Unit: The alternative would be to set up a separate unit that explores the possibility of acquiring vendors or providers of services for digital home solutions / services provisioning and support. This could incur a huge capex, but would allow the operator to acquire skills & capabilities within a short period of time.
3.3 STEP THREE – Internal Enablement

Having the business strategy and model mapped out, the next crucial step for the operator will be to work on the internal enablement of its organization to support the offering of digital homes services.

1. **Infrastructure**: Operator’s most important asset (other than their customers and employees) would be their network platforms. The smooth running and continuous improvement of these networks will ensure a safe (security), consistent (SLA) and fast (network and end-devices management). At the same time, in order to cater for the smart devices, the level of multi-media support, the vast availability of applications, the operator’s network must be equipped with advanced monitoring and business intelligence tool to gain insights into digital homes solutions provisioning status, usages, and utilizations.

Some Recommendations & Benefits:

a) **FTTx / LTE & Roll-out**: Certain Vendors provide best practices on fiber optics network roll-out (Nationwide) and planning. Experiences in such delivery are important as it ensured operator’s bandwidth management and quality assurance of the network. This will fulfill the fundamental requirement of digital homes’ solution on bandwidth for delivery of High Definition contents. In addition, LTE can be used to supplement or directly support the use of smart home services, thereby ensuring availability of services.

b) **Platforms ensuring Quality of Experience (QoE)**: From the customer point of view, they will want to have a smooth and uninterrupted connectivity. An overall QoE management solution would be required to help ensure that the network is running smoothly with smart decisions be made (policies, bandwidth control etc.) and that the customer’s service level expectations met.

c) **Cloud Computing platforms for ISVs (Independent software vendors)**: As suggested earlier (Under “Cloud, Access, Device”), operators should build a cloud platform that is robust and flexible for ISVs to provide their services to the end customers.

d) **CPE & End-user Devices**: As Figure 10 has shown, user’s end devices and services / support would define the consumer’s experience on Digital Home. Operators need to choose not only devices (i.e. home gateways, wireless routers) that are of good quality, but also devices that can interoperate to form the Digital Home ecosystem as shown in Figure 9. Having that sorted out will ensure customer satisfaction, and lesser load on the supporting services required for troubleshooting.
2. **Digital Home Services:** Here, digital home service provision and delivery will be a key success on operator’s revenue generation and customer retention. Some operators like T-Mobile® has taken the approach to deliver their own suite of services to compete directly with OTT service providers.

Some Recommendations & Benefits:

a) **My Digital Home Store:** The key concept to this service is that everything that will make the home “digital” and “smart” can be delivered through one main portal and accessible from any devices. The cloud platform as recommended earlier will provide easy access for any vendors/service providers to push their services from the Operator to the customers. Akin to the App store concept, customers will be attracted to the availability of reliable and “intelligent” solutions (Apps) that fulfill their home needs and requirements.

b) **My Home Network:** With the technology now available to share home content from anywhere, Virtual Home Networks promises flexibility and access of contents and information from anywhere in the world, including stored or rented movies from the paid/cable-TV services from the user’s home country.

c) **Friendly U.I. (User Interfaces):** Giving consumers the ease of setting up their digital homes, as well as having comprehensive features and user interfaces are choices that operators have to decide when rolling out Digital Home. Good usage experience will drive customer advocacy, hence driving more sales of the services and leading to evolvement of future services roadmap.

3. **Service Provisioning and Technical Support:** The digital home user touch-points usually comprise of when the customer first starts to know the services, buys the services, setting it up, using it and trouble-shooting it. Operators have to plan for either their vendor’s or their own service support to handle issues not just in the Access domain, but also in the Devices domain. Good customer experience on provisioning and delivery will translate customer retention and customer advocacy.

4. **Organizational Change:** Operators may need to decide if an existing unit or an entirely business team will head this digital home initiative. Autonomous business team will usually be more reactive and dynamic in reacting to market changes or critical issues; existing units will usually be bogged down with existing KPIs or workloads, hence not making the whole processes faster.
3.4 STEP FOUR – Go-To-Market Strategy

The last but crucial step would be for the operators to execute the go-to-market (GTM) strategies that it has planned earlier. The following highlighted two (among the others) more important aspects:

1) **Product & Services Bundling**: From operator’s point of view, one of the key revenue generators that digital homes will bring in will be through “Access”. It is crucial for operator to bundle the access, together with end-devices (i.e. set top boxes, PLC connectors, WiFi routers, apps for remote control), plus support and services (via vendors and/or channel partners) to appeal to the to-be digital home users. The convenience and practicality of the digital home lifestyle will increase customer experience and improve customer retention and advocacy.

2) **Market Channels**: The first launch of the services is important. The avenues of which an operator has decided to enter will determine the success of digital/smart home services. Some examples that operator can opt to work with:

   a) **Property developers**: wholesale end to end solutions roll-out for the entire property.

   b) **Vertical Industries (e.g. Healthcare)**: Case-by-case basis, solutions-based services for the needs of different vertical industries.

   c) **Hotel**: Premium solutions for the up-class markets.

A successful market channel decision will not only create revenue growth, but will also increase brand awareness for the operator.

The four steps are primary guidelines for the operators to reference when they design their digital home strategy. As the technology evolves, there are bound to be more exciting products and services they may not only complement, but revolutionize the whole concept of Smart Home.
Section 4: Learning from Some of Our Customers

4.1 Case 1 – UK TalkTalk provides online protection for families

….HomeSafe, the UK’s first and only network-level broadband security service provided by fixed operator TalkTalk, is a parental control and anti-malware solution for all devices that use the home Internet connect – including PCs, tablets, smart-phones, and even game consoles – putting parents in charge of what their children can visit online and when.”…..

Since its founding in 2002, TalkTalk has steadily grown into the UK’s leading value provider of fixed broadband and voice telephony services, serving some five million customers. Their customers are primarily households, where children are likely to be sharing the same Internet connection as their parents, and a lot of that time is unsupervised. TalkTalk’s own Life Online study has shown that at least 14% of children aged 6-10 have encountered adult content on the Internet. In addition, according to a security report, the spam level in the UK in June 2012 was 67%.

TalkTalk identified a need in the marketplace for a simple, effective security service for multiple device categories. In 2010, TalkTalk partnered with Huawei to jointly develop a network-level security solution that provides safer broadband access for homes, with parental control as the key element. Huawei provided its Service Intelligence Gateway (SIG) solution, which can be deployed on a fixed, mobile or converged network. Its architecture is simple, consisting of a front end, back end, upgrade centre and cloud security center. Huawei’s SIG solution facilitates the launch of value-added services such as parental control. Through operator’s portal, parents can subscribe to or cancel their service plans, and enable/disable/configure their online policy at will. Parents can also restrict access to online gaming and social networking sites at specified times of the day. Based on an industry-leading malicious code detection technology, SIG can filter malicious URLs dynamically, keeping viruses and other malware out of the home and across various connected home devices.

HomeSafe solution was launched in mid 2011 with three primary parental control/network security functions. Kids Safe allows parents to choose websites for blocking by category. Homework Time allows parents to set a timeframe during which children cannot access online gaming and social networking. Virus Alerts, blocks access to infectious websites. Since its launch, HomeSafe has enjoyed positive feedback and appreciation from various organizations in the society as well as from the British government. As a result, TalkTalk has earned itself two industry awards for innovation and network security. On the business side, HomeSafe users have hit 500,000 after a year and half since launch. This number is expected to reach 1 million by Q1 2013.

4.2 Case 2 – Telekom Malaysia delivers an enhanced TV experience to Malaysian home users

…..Telekom Malaysia (TM) has launched its high-speed broadband (HSBB) service to the market since 2010 under the UniFi brand. Apart from digital voice and high speed broadband access, TM also offers the new generation of IPTV services which is branded as HyppTV…..
Through a public-private partnership (PPP) agreement with the Malaysian Government and with a project value of USD3.8 billion, it is believed that HSBB will boost the country’s national GDP by 0.6% while creating 100,000 jobs by the year 2017. Telekom Malaysia’s UniFi service is currently available at 81 exchange areas with over 1 million home pass. Subscriber growth has been encouraging and reached over 340,000. This broadband foundation helps TM to deliver an enhanced and integrated digital lifestyle to the homes in Malaysia.

Telecom Malaysia’s IPTV service, branded as HyppTV has proved to be a good differentiator from competition, and customer also believe this will be the game changer for digital home service expansion. HyppTV has changed the perception of many Malaysians about TV service. In Malaysia, many customers have subscribed to satellite TV but service is not readily available due to rainy weather conditions. When it rains, people would simply switch off the television as they do not expect a service. HyppTV however does not just ensure the delivery of continuous entertainment but also HD viewing experience. Today they offers customer 88 channels with 12 HD channels consisting of 19 free channels, 34 premium channels, 17 VOD genres and 18 interactive channels featuring YouTube, Facebook and games.

In its effort to ensure the successful implementation of HyppTV, TM had set high benchmarks for its IPTV solution vendors who need to have extensive experience in this area and the ability to deliver service within just three months. The vendor must also have a strong “experience-over-time” track record (the ability to provide, end-to-end solution, business consultancy, planning, operations, training and transfer services). Huawei was finally selected as TM’s project partner after going through a stringent technology and service assessment. Having fully committed to TM’s success in HSBB, Huawei indeed delivered its solution within two months, fulfilling TM’s strict requirements in terms of KPI and QoS. The service platform provided by Huawei facilitated the launch of new innovative services like time shifted TV, Near VOD, Personal Video Recording, YouTube, Facebook, thereby setting a high benchmark for the pay TV marketplace in Malaysia. It can also support future digital and connected home solution such as OTT (over-the-top) content and multi-screen video. From now on, the Malaysian would never be bored at home!
Conclusion

This whitepaper has looked at the vision of smart homes and the important role of the digital home concept as the foundation of smart homes. It further explored the trends and drivers of digital homes and pointed to a growing trend for its adoption. This has been widely driven by several factors, including the advancement in modern information and communications technology, as well as the internal need for operators to look into providing digital home services to bring up revenue.

The path towards digital homes services provisioning and delivery needs to be thought through and managed carefully. Various consideration factors are explored, including factors like government policies, the availability of vendors for partnership/acquisition on digital home services provisioning, the changes and improvements on the operator’s infrastructure, organization structure as well as operations support.

With a set of guidelines / steps, operators will be able to successfully launch and operate their digital home businesses. Taking each factor into consideration, the operators would first need to strategize and model their businesses for digital homes, hence ensuring visibility on goals as well as addressing any gaps uncovered. Then they would need to establish collaboration models between vendors and internal resources. The operators would also be advised to catalyze the changes within the organization to prepare for digital homes services provisioning. Last but not the least, the GTM strategies has to be laid out to ensure a successful launch of the business.

In each of the strategic recommendations, Huawei can offer help to operators on its transformation path to offering digital home services. These technological solutions include the delivery of network infrastructure, QoE management systems, cloud computing platform, CPE / devices design and manufacturing, and application / UI development for specific services. Huawei also provides strategy and business consultancy that will help operator with strategy formulation, market analysis, services transformation, business planning and go-to-market strategy. The two case studies included illustrate how Huawei has helped two operators succeed in their vision for connected digital homes in the smart home era.

As Albert Einstein has once said “It’s not that I’m so smart, it’s just that I stay with problems longer.” The launch of smart home services for operators will also require similar dedication and effort to make it a success. By working with its vendors and partners with an open and innovative mindset, operators will be able to transform any problems encountered into a smarter solution.
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