Smart 2025: The Future of the Connected Home and Community

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Introduction

The connected home and community are vital topics because they have an impact on how we spend our time with family, friends, neighbors and broader communities. As we have seen with everything from TV and broadband to smartphones, consumers are more than happy to adopt new technology when it brings real benefits such as saving time and money, or building meaningful new connections with those they care about and depend on in their everyday lives.

It is a good time to survey the status and outlook for the connected home and community segments in the US, given that both recently have seen a flurry of activity that suggests many see the areas as the next big thing. Just a few of the many notable developments last year are:

- **January:** Connected home and the Internet of Things were the hot topics at the Consumer Electronics Show, with literally hundreds of announcements of new connected home products and services from a huge variety of companies
- **February:** Google acquires Nest, which makes connected home thermostats and smoke alarms, for $3.2bn
- **February:** Internet equipment giant Cisco and AGT, which provides city solutions, announce a global strategic alliance to support smart cities and communities
- **April:** AT&T celebrates the first anniversary of Digital Life, its new home security and automation business which is available in 75 markets across the country
- **June:** Apple announces Home Kit, a new framework which enables iOS devices to communicate and control other connected devices within the home
- **July:** Google-owned Nest acquires Dropcam, which makes connected home cameras, for $555m
- **July:** Office supplies retailer Staples expands the availability of its Staples Connect line of home automation products to 500 of its 1,800 stores nationwide, up from the 32 stores that were trialing the new products
- **July:** Home improvement retailer Home Depot announces the nationwide launch of its new line of connected home devices that all work with its new Wink hub and application
- **August:** Samsung acquires SmartThings, a US start-up developing a smart home platform
- **October:** Qualcomm acquires CSR, a UK-based company specializing in Bluetooth, Bluetooth Smart, and audio processing, in a bid to improve its reach in the Internet of Things.

This research, produced by Ovum in association with Windstream, assesses the current state of the connected home and community in the US, in order to form a vision for its likely shape and direction in 2025. The research is based on Windstream’s experience as a telecoms service provider in the US, and Ovum’s experience researching the telecoms, media, and connected home markets in the US and worldwide.

Gauging the scale of the current connected home market

The connected home of the future will naturally be an evolution of today’s connected home, which is built on the key foundation of broadband Internet access both in the home and on the move, with the latter typically provided by smartphones and other portable devices. At the end of 2013, 74% of US households had broadband, and 60% of the population had smartphones. That defines a huge addressable market of close to 100 million households with the key foundations in place to support connected home devices and services.

However, the current connected home market is at a relatively early stage in the US, with many households still struggling to see the value of investing in devices and services that are relatively complex and costly. One indication of the current status of the connected home market comes from ADT, the leading home security provider in the US. The first point is that ADT has nearly six million home security customers and claims 25% of the market, which suggests there are 24 million home security subscribers in the US out of 132 million households, a penetration of 18%. In other words, home security services, which are an early example of the connected home, are still at a relatively early phase of adoption despite being available for decades.

Another point is that ADT offers a home automation service named Pulse, which enables remote control of ADT security services from smartphones and tablets, as well as remote control of other home systems such as lights and thermostats. However, only 12% (or 700,000) of ADT’s customers were subscribing to Pulse at the end of 2014. On the other hand, ADT says that its Pulse subscriber base increased 19% in 2014, and that 64% of its new residential customers took Pulse. This helps to explain why ADT sees its Pulse
home automation service as one of its key growth areas.

**Connecting the dots of the connected home**

ADT is far from alone of course; a host of players have expanded from their core businesses into the connected home market. These include: home improvement retailers, such as Home Depot and Lowe’s; telecoms service providers, including AT&T and Verizon; home appliance manufacturers, such as GE and Honeywell; Internet giants including Google; and a number of equipment and device providers ranging from Qualcomm and Intel to Apple, LG, and Samsung.

This trend highlights the fact that one of the drivers of the connected home market is simply supplier innovation and push, with a wide range of companies seeing it as a growth segment, which in turn has led to an array of new products and services to entice consumers. There is a variety of providers moving into the connected home market, often by augmenting existing products and services for the home (see Figure 1).

While the proliferation of companies targeting the connected home has led to a significant increase in the products and services available in the segment, it has also led to a fragmented market where different products and systems often do not work together. In fact, fragmentation is one of the key inhibitors of the connected home market, along with security, trust, and cost.

One illustration of the relative cost of connected devices comes from Home Depot’s new line of products that work with its Wink home hub and application. The retailer offers a new connected home deadbolt lock from Schlage for $200, while a traditional unconnected deadbolt of the same brand is available for $40. While the connected lock obviously has additional features such as keyless entry, unique codes for different users, and remote locking and unlocking, many consumers would struggle to find enough value in these features to justify an initial cost five times as high as a traditional alternative.

**Needs and wants will drive connected home adoption**

Given the barriers to connected home adoption cited above, what will drive it forward, apart from the host of companies working to develop the segment? In such a complex and nascent segment focused on something as important as our homes, it is useful to refer to Maslow’s classic Hierarchy of Needs. In particular, connected home segments can be mapped on to Maslow’s Hierarchy to identify which segments support more fundamental needs and thus may happen later and on a smaller scale (see Figure 2).
Mapping in this way suggests that applications such as smart energy could drive the connected home market forward, and yet, despite being around for a number of years, products such as smart thermostats remain niche. The reason for this is that other basic issues around cost, interoperability, and trust still remain. Some “smart-energy” solutions are also still largely about automation, rather than true control. Additionally, while smart meter technology is being deployed in many parts of the US, the solutions suffer from being part of a closed network designed simply to collect meter data – with limited connectivity to a home network that would allow the consumers more sophisticated control of their energy consumption. The energy industry also suffers from a lack of trust among consumers, who see such technology as actually being deployed in the industry’s interest—that is, to lower costs—rather than their own. For connected home solutions to break into the mass market, all stakeholders must start to work together so that solutions can be developed that are cost-effective, interoperable with other systems in the home, and provide the targeted segment with some true value.

### How media services will evolve in the connected home of the future

An important part of the connected home, and possibly the most advanced, is media services and entertainment. However, greater smart home integration will lead to even more connection between media services, satisfying the consumer’s desire for entertainment while also giving ISPs and their partners more insight into the customers’ interests, leading to better advertising.

As a first step, the entertainment hub and the broadband hub will effectively become the same device – this is already in motion, as most consumers take bundles with integrated TV and broadband offerings, frequently with VOD and DVR functionalities (see Figure 3). With a single hub delivering all services, it will be easier to integrate other devices, such as wearables and connected appliances, with the service and deliver information across all the connected devices in the home, rather than just the one currently in the user’s hand.

Examples include controlling the thermostat from the TV, or receiving audio notifications that a message has arrived over speakers while listening to music. This interoperability will also make it easier for voice control over devices, similar to smartphone-based personal assistance services like Microsoft’s Cortana or Google Now.

As TV content has become more dispersed among each family member’s devices, on-demand video has become more important as well, driving improved user experience by creating individual profiles showcasing each user’s preferred content. Advertisers have the opportunity to use these profiles, as well as the data generated from the smart home’s other connected devices, to deliver ads tailor-made to the family member and their device.

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**Figure 2: Maslow’s Hierarchy of Needs applied to the connected home**

<table>
<thead>
<tr>
<th>Hobbies, travel, education</th>
<th>Self-actualization</th>
<th>Wearables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars, luxury goods, latest gadgets</td>
<td>Esteem</td>
<td>Home automation</td>
</tr>
<tr>
<td>Clothing, grooming products, socializing</td>
<td>Social needs</td>
<td>Well-being/fitness, entertainment/media</td>
</tr>
<tr>
<td>Insurance, security, investments</td>
<td>Safety and security</td>
<td>Home security, personal security</td>
</tr>
<tr>
<td>Food, electricity, heating, shelter, health</td>
<td>Physiological needs (survival)</td>
<td>Smart energy, e-health</td>
</tr>
</tbody>
</table>

Sources: Maslow, Ovum
Users will also be able to take their entertainment with them wherever they go as Wi-Fi roaming deals between broadband providers expand, and as mobile data allowances grow. The phone will evolve from a separate computer, storing its own apps, photos, and other content, to a cloud-connected client that provides access to all media content, wherever the user is. It would interface with the user’s connected car, plugging in to deliver music and GPS navigation, provide access to company documents in the office, and connect to public Wi-Fi networks to deliver the user’s TV and VOD content while out of the house.

How the connected home will be connected

The connected home will not rely on a single technology, but rather will depend on a variety of technical solutions working together to enable a truly smart home (see Figure 4). This is because of the differences in data transmitted between the home gateway and other devices – technologies like M2M/cellular are better for monitoring applications that connect to, for example, a utility, whereas Bluetooth would work better for connecting lightweight devices that do not require large amounts of data. Wi-Fi, by contrast, is more suited to connecting devices that do transmit or receive large quantities of data, and that require a constant power source. An example is the Nest smart thermostat, owned by Google, which connects to the home Wi-Fi network and can be controlled by a user’s smartphone. The Nest collects large amounts of data, such as a user’s preferred temperature at various times of day throughout the week, and uses this data to set itself automatically.

Proprietary standards like ZigBee or Z-Wave (which is used in ADT’s Pulse home automation system),
meanwhile, could be used for mesh networks allowing data to be transmitted between devices using other devices in the network, as well as routing all data through the home hub. This would be useful for transmitting commands or displaying notifications directly to a specific device (for example, displaying the current temperature reading by a smart thermostat on the screen of a connected TV).

Given the relative strengths of each standard or protocol, no one standard will dominate the connected home. Instead, each will use its strengths to permit greater interoperability – the main inhibitor currently to the connected home.

**Connected home 2015**

The connected home concept has been around for many years, but the past two years have seen a significant increase in new developments, product announcements, and, to some extent, consumer adoption. This is especially the case in the area of media and home entertainment, with online/cloud media solutions becoming commonplace in many US households. More “smart home” solutions focused around home security, energy, and automation are still in the early adopter phase, but with consumer electronics/Internet heavyweights such as Apple and Google now getting in on the act, Ovum expects mass market infiltration over the next one to three years.

More fundamental, however, has been the increase in broadband connections in the US (see Figure 5), and the subsequent growth in home Wi-Fi networks encompassing devices beyond the user’s primary PC. The movement from desktop PCs to laptops, and then more recently to portable, high-quality video-enabled devices such as tablets and smartphones, led to the need for broadband access at all points in the house. The increased availability of high-speed broadband, together with a wider range of connected video devices, led to the development and incredible growth in popularity of services like Netflix. The popularity of these services has spurred TV manufacturers to add Wi-Fi connectivity to their own products while pay-TV service providers have been adding Internet TV features, applications, and services into their own portfolio.

**One screen to rule them all**

Overall, US consumers still love their TV: The average live viewing time (not time-shifted, i.e. DVR, on-demand, or streaming content) for an adult in 1Q14 was 5 hours and 10 minutes per day – this is only a decline of 1 minute per day compared with the previous year. However, it is also clear that time-shifted viewing is growing more popular, having edged up by 5 minutes per day over the past 12 months to 34 minutes.
These trends are distributed unequally among different age groups, however. The greatest decline in traditional TV viewing has come from viewers aged 18-24, followed by even younger viewers aged 12-17. Although this is due in part to other media, such as video games and social media, competing for their attention, it is also due to an increase in the consumption of time-shifted or on-demand (or pirated) content. The greater increase among young adults, compared with teenagers, is likely to be due to the fact that the 18-24 demographic is no longer living at home and therefore has less access to pay-TV, particularly premium bundles containing channels like HBO. Like their younger siblings in the 12-17 age group, they are more willing to seek out free content, whether legal or not.

The other trend suggested by these declines is the fragmentation of TV viewing in the same household. The growing number of screens (in the form of smartphones, tablets, or secondary TVs), and the increasing popularity of OTT and “TV Everywhere” offerings, means that several family members can be watching TV at the same time, even in the same room, but are all watching different shows or channels.

Looking forward to 2025, time-shifted viewing will grow among all age groups, particularly among viewers who have grown up watching content on their phones or tablets. Faster and more widespread networks – both fixed and wireless – will make it easier to consume video content on the go (see sidebar). However, the primary TV set will remain a focal point for families, even if not all family members are paying attention to it. In part this is because consumers’ willingness to seek out free content wanes as their income increases, meaning they are more likely to pay for TV packages. In addition, for certain content, like movies or sports, larger screens are preferred; as a result, even so-called “cord-cutters” will still want Internet-accessible TVs for watching content communally.

Bringing it all back home
The explosion of interest in both connected media and smart home applications has led to fragmentation in apps and services, with each new device communicating with its own cloud and little integration between services. Many solutions also use a variety of networking technologies, significantly complicating the communication between one device and another. This fragmentation has also meant downloading a separate app for each device, leading to “app bloat”. In response, a number of OEMs and vendors have begun the move toward allowing connected devices to talk to one another, for example, Qualcomm’s AllJoyn protocol (see Figure 6).

Qualcomm’s AllJoyn is a bridging technology allowing connected devices to communicate directly with one another, rather than solely through the cloud. Other vendors such as Revolv have developed stand-alone home hubs that have a single purpose of connecting independent smart home solutions together and providing them to the user in a single interface.

TV Everywhere
Tying into the connected home is the “TV Everywhere” concept, which a number of ISPs and content providers are increasingly promoting to their customers. This is generally to take advantage of the ubiquity of mobile devices, like tablets and smartphones, as well as of services such as Netflix. The HBO Go app is a notable example, allowing HBO subscribers to watch shows whenever and wherever they want – even early, by taking advantage of different broadcast times between the East Coast and the West Coast.

TV Everywhere is already becoming a crucial part of any TV provider’s offering, allowing live broadcast viewing and on-demand catch-up content. Another factor that will contribute to the growth of TV Everywhere is the growth in public or municipal Wi-Fi networks. New York City, for instance, has been expanding Wi-Fi availability on the subway, with access across the whole network expected by 2018.
The DIY smart home
While some of the more successful smart home offerings require professional installation, in 2025 the smart home will be easier to build on your own. Individual components, like Nest, are already available and, as they become more and more interoperable, the connected home will turn into a plug-and-play proposition, with each new device connecting easily to the main hub. This can already be seen in offerings like SmartThings, which has just been purchased by Samsung, and startups like IFTTT, which allow users to pull together multiple services and devices themselves, whether they are designed to work together or not.

Large CE vendors such as Apple and Samsung have also started to get in on the act. For example, in June 2014, Apple unveiled Home Kit to enable connected device developers to integrate their apps with iOS more easily, and allow users to control the devices directly from their iPhone (or other iOS device).

Tying connected home solutions together and removing siloes between devices will make the technology simpler for customers to use and allow new use cases to be developed. For example, if independent solutions could be joined together, a user could set up a use case that allowed a home security system to automatically switch off as they enter the home, switch on lights to a pre-defined level, and turn on the home sound system playing the same music that the user was listening to on their way home in the car. Such integration makes individual smart home solutions more attractive, benefitting the individual vendors as well as the end users.

Energy companies are also looking at using smart energy meters to monitor consumers’ power use, and to implement demand-based pricing. However, this development is currently often in parallel with the main connected home ecosystem, which is more an outgrowth of the home hub and uses independent cellular wide area networks (WANs). Technically, links between the smart meters and the home hub are possible and certainly some hub vendors are already building such capabilities into their products for future use cases, but this will require greater partnerships between the telecommunications companies that run the broadband networks and the utility companies that own and control the energy networks.

Issues still outstanding
There are a number of other key issues to be solved before the connected home truly becomes mainstream (see Figure 7). While fragmentation and processing are the two issues that are likely to occupy developers in the short term, questions of privacy and security are also growing more important in consumers’ minds, as well as more fundamental issues such as the basic cost of implementation.

Beyond the connected home
The connected workplace: connected home and telecommuting
One trend that will dovetail with the rise in connected devices is the increasing use of teleworking/telecommuting. Employers, in both the private and public sectors, are increasingly encouraging their workers to work from home as a way to save on electricity and other facility costs in their main offices. An estimated 2.6% of the US workforce telecommutes – and this is across the for-profit, non-profit, and government sectors (see Figure 8).

Business continuity is also an important driver for the increase in telecommuting as it increases workers’ flexibility in response to

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<th>Figure 7: Issues to solve</th>
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<td><strong>Issue</strong></td>
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<tr>
<td>Privacy and security</td>
</tr>
<tr>
<td>Fragmentation</td>
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<td>Cost of implementation</td>
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Source: Ovum
emergency situations, whether natural or man-made disasters, or simply loss of electricity or network access. For instance, federal government employees who worked from home during four “snow days” are estimated to have saved the government $32m.

There are already a number of telepresence solutions available on the market, for various platforms (e.g. Apple, Windows) and devices (laptops, tablets, smartphones). The key driver, therefore, will be improvements in fixed broadband infrastructure, which will make telecommuting a more seamless experience for employees.

The connected community
With the increasing integration of mobile technology into users’ cars, as with automotive Bluetooth and LTE connectivity, there has come the sense that the home should be as smart as the car. For instance, AT&T has signed a deal with GM to supply LTE for its OnStar subsidiary – providing entertainment services such as music (whether via satellite radio like Sirius XM, or apps like Spotify), in addition to telematics relating to engine diagnostics and fuel usage.

At a more personal level, healthcare – particularly in preventative care and monitoring – will also see improvements thanks to teleworking. Health monitoring solutions based on Web applications – such as journals to record sleep patterns, food consumption, or stopping smoking – will be easier to enter in real time without using company resources. At the same time, equipment to monitor more serious conditions will also benefit from the improved connectivity that will enable better teleworking – effectively allowing homebound workers with disabilities or chronic conditions to rejoin the workforce.

The connected classroom
As communities become more connected, another beneficiary will be classrooms and education. Initiatives such as Google Classroom already allow students to experience field trips virtually, using Google’s Hangouts, and the same technology could be made to connect teachers and students on a more regular basis. A number of universities are already offering online courses, but, as rural communities become more connected, and as average speeds rise with technology improvements, school-age pupils in rural or underserved areas will have access to seminar-style lessons as well as one-on-one tutoring with teachers across the US.

Physical classrooms will also be affected by the move toward connected education. Shifting to adaptable learning spaces and tablets for pupils will make it easier for teachers to reconfigure seating according to the needs of a specific lesson plan. Studies have found that adaptable learning spaces improve students’ engagement, and a key part of that engagement is being able to access and share connected learning devices and apps.

Connected homes and communities in 2025
Given the current state and likely evolution of the connected home and city markets as outlined above, what could these markets look like in 2025?

The smart community
One criticism often made about today’s society is that it has lost its sense of “community.” However, connected home technology is helping reverse this trend in a number of ways. By 2025, superfast broadband will enable more flexible working and home working, reducing the amount of time we spend commuting. It will also enable more people to improve their quality of life by living where they choose and telecommuting, thus reducing the need for people to migrate to the large cities to find work. Working as a community, greater facilities for education, healthcare, and social care will be created on the back of next-generation access and smart devices.

Social communications offers a new way for local people to exchange ideas, recommendations, and
resources. This allows for new local initiatives, such as public-service solutions start-up PublicStuff, which provides a platform for sharing problems, such as vandalism or damage to public spaces, with local government and among neighbors. Users with the app on their smartphone can report a problem to local government and, if their city or town uses PublicStuff as its digital customer service platform, can track the progress of their request and be notified when it is closed. A few thoughts for discussion:

- With the expected growth in urban populations by 2025, communities will have to manage traffic flows and resources like parking much more effectively.
- Sensor networks will be a key means to capture the data on where and how to make changes and reduce crime, traffic, or pollution.
- Private companies will partner with communities of all sizes, from large cities to rural or suburban areas, to provide insights into public transportation, infrastructure, and other services.

**From smartphones to smart homes**

The killer app for smartphones was not just that they allowed users to access the Internet away from their computer – it was that this access allowed users to turn their phones into a number of other devices, from musical instruments to TVs to fitness monitors. The connected home will come into its own when it can enable similar experiences for mundane household objects, delivering additional value to end users: floor lamps that flash when severe weather warnings are issued; TVs that offer notifications from the kitchen; smoke detectors that can call emergency services; and so on.

As in the smartphone space, the connected home will coalesce around two or three different open-source standards, each of which will enable these experiences. Differences will be minor, in terms of which appliance manufacturers or OEMs sign onto a standard, or which connection protocols are supported by the standard. Meanwhile, homes will have a wired backbone network, but will use wireless technologies such as Wi-Fi to connect the end devices. The home hub will easily be able to control the network, and the user will not have to worry about technology compatibility, as any device brought into the home will connect automatically.

Having this integrated backbone will enable smart household appliances not only to work in isolation, such as controlling the thermostat from a smartphone, but also to work together to provide richer experiences. For example, the thermostat will automatically turn itself down as the home security system comes on, which is triggered by the last person leaving the house. From this point on, the home will monitor the location of the inhabitants, and then start to heat the home as they start to return, making sure the home is the perfect temperature as the owner steps through the door without wasting energy in-between. Only when devices are able to communicate across the different platforms can this reality come into being. A few thoughts for discussion:

- Broadband networks will not only be dramatically faster by 2025, they will also support literally billions of new connected devices, many of which will enable smarter and more efficient homes.
- Video calling will be common over existing devices such as TVs and smartphones, as well as a host of new devices such as smart watches and glasses.
- Voice control of the home will be routine, making it easier to interact with everything from individual devices to the home itself, which may well have its own name (similar to Siri), preferences, and personality.

**From smart islands to smart living**

By 2025, the question of which platform or protocol will connect the smart home and the smart community will be settled, and the important question will be how to enable new experiences for consumers. More important than the “cool factor” of a single connected device will be how that device interacts with the rest of the smart home – whether by turning on the TV, lowering the air-conditioning, or dimming the lights. Beyond that will lie the question of how events in one part of a street or city will affect other parts.

The key to all of this is that there will no longer be independent “smart islands,” such as the smart device, smart home, smart car, or even smart city – by 2025, the necessary links between all these will have been made to provide us with a truly smart living experience. These links will enable decisions to be made and different applications to be carried out based on our location, our personal preferences, and what is going on around us. A few thoughts for discussion:

- Obvious flaws in current home security systems – such as false alarms and slow response times – will be resolved by a proliferation of sensors in the home, intelligent systems to identify false alarms and other problems, and tighter integration with public safety services.
• Home security is likely to become part of a larger family security system that will include location and health tracking, on-demand communications, and safety-aware recommendations on everything from driving routes to hotels and restaurants.
• Basic home systems, such as water, electricity, lights, heating, air conditioning, and appliances, will be highly automated and optimized to support personal preferences while reducing costs and the environmental impact.

Smart entertainment
The connected home in 2025 will be more than controlling household items and appliances. It will enable more access to entertainment among all members of a household on the devices they choose. This functionality is certainly already starting to appear in US homes today, but in a highly fragmented way. Access to content channels is limited by device, requiring consumers to buy into a number of separate ecosystems to pull together the content they want. By 2025, such barriers will have broken down.

Content providers will also be experimenting with different business models. Unlike today, channel bundles will be much more personalized around the tastes of the household, and individuals within the home will have their own personal settings so that their favorite content is highlighted in the main user interface. TV will be, as it has always been, a social as well as a personal event. However, the social contact will no longer be restricted to the boundaries of the home. Using social media, fans of a football game can watch the game together, even if they are located in different states. A few thoughts for discussion:
• Virtual reality will be mainstream entertainment in 2025, with technology allowing us to attend events virtually rather than physically. This will be supported by the widespread deployment of cameras and microphones capable of transmitting increasingly rich experiences between homes, event venues, and elsewhere.
• Media will be far more tailored to both individual taste and context, and will be delivered via a host of new systems and devices. For example, you will be able to ask your kitchen to suggest the best dinners you can make based on the ingredients and time you have available, and who is having dinner.

Connected cities
Just as in the connected home, the connected city will coalesce around a series of standards, although each deployment will be customized to a given city’s specific needs. As sensors in the city are added and improved to offer better communication, they will also connect with sensors carried by private citizens, whether in the form of smartphones, wearables, or other beacons.

The backbone of this connectivity will be through the improvement of wireless and wireline networks, carrying the ever-increasing quantities of data to enable healthcare, resource management, or entertainment experiences. As a result, fixed and wireless broadband providers, which already have intimate knowledge of consumers and what they want, will be ideally placed to deliver the connected home and connected community in 2025. A few thoughts for discussion:
• Sensor networks to manage traffic and pollution will also be instrumental in managing public safety, reducing crime, and letting community managers know where to allocate resources.
• Improved traffic flow will make emergency services able to respond more quickly and efficiently, deploying the necessary resources to the spots where incidents have been detected.
• Improved traffic flow will also be crucial in improving law enforcement, as it will allow local police to keep track of where crime is most likely to occur and route squad cars and investigators accordingly.

Conclusion
The future of the connected home will depend on improved wireless and broadband networks, powering the increasing data needs of customers and cities. But the future will be distributed. As more and more homes are connected, adding smart solutions to manage energy and other data, the wider community will become smarter as well. Healthcare providers will be able to visualize which areas typically need more emergency or long-term care, and city planners will be able to shift resources accordingly. At the same time, connected homes will mean that services like education will no longer depend on physical proximity to schools or universities – students will be able to learn from teachers and tutors across the US.
ABOUT OVUM

Ovum is a leading global technology research and advisory firm. Through its 180 analysts worldwide it offers expert analysis and strategic insight across the IT, telecoms, and media industries. Founded in 1985, Ovum has one of the most experienced analyst teams in the industry and is a respected source of guidance for technology business leaders, CIOs, vendors, service providers, and regulators looking for comprehensive, accurate and insightful market data, research and consulting. With 23 offices across six continents, Ovum offers a truly global perspective on technology and media markets and provides thousands of clients with insight including workflow tools, forecasts, surveys, market assessments, technology audits and opinion. In 2012, Ovum was jointly named Global Analyst Firm of the Year by the IIAR.

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- Competitor tracking
- Customer segmentation and targeting
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- 1-5 year planning
- Market entry planning [dynamics/demand]
- Competitor tracking [investment/activity]
- Information systems support
- Numerical and analytical tracking

OUR SERVICES

- Benchmark reports
- Surveys
- Webinars
- White papers
- Country reports
- Company reports
- Forecasts
- Go-to-market reports
- Case studies
- Event facilitation
- Speaking engagements
- Workshops

For more details on Ovum and how we can help your company identify future trends and opportunities, please contact us at enquiries@ovum.com or visit www.ovum.com. To hear more from our analyst team join our Analyst Community group on LinkedIn www.ovum.com/linkedin and follow us on Twitter www.twitter.com/OvumTelecoms.