The Importance of the Home Network for Delivering High-Quality Digital Applications

How service providers can use the home network to differentiate their broadband services

Summary

In brief

Digital services and applications have become critical to everyday life, and the network that delivers them down to the device is an essential element for ensuring a high quality of experience (QoE) and meeting customer expectations. As the final link in the chain of that network, the home network has increased in importance, and broadband service providers can no longer simply provide a "best-effort" service in this area. Based on an Ovum survey of 1,000 end users across three countries – Spain, the Netherlands, and Sweden – this report offers insights on consumers' perception of their home network performance, helping service providers understand what is required to improve QoE.

Ovum view

- **The home network is a critical part of the end-to-end network.** Digital services and applications have become a critical part of everyday life. Huge investment has been put into the core and access networks to deliver these services to end users, but service providers must also take responsibility for the final leg of that network – the home network. Wi-Fi has become the technology of choice for the home network, but even though it has significantly improved over the years, the typical home network remains relatively simple in nature and far from perfect for streaming high-definition media around the home.

- **Value for money gains customers, but it is QoE that keeps them.** Consumers are always looking for the best deal, but they also value quality and reliability. Although price remains the number one factor when choosing a new service provider, it is not the main reason consumers churn service providers; they are more likely to churn because of poor speed and reliability.

- **Broadband speed alone is not enough.** If a broadband service is not reliable, or indeed available, in all required rooms of the home, then simply offering the fastest speed will not get service providers very far. Consumers value speed, but reliability, availability, and good customer support come top of their priorities.

- **The industry needs to take responsibility for the home network if a good-quality service is to be experienced by all.** In Ovum's survey only 20–30% of users never experience Wi-Fi issues such as poor range or limited bandwidth. Even when issues are only experienced on an infrequent basis, they have an impact on the user's perception of the QoE they receive. However, few respondents feel confident they know what to do to improve the quality of their home network. The majority believe the responsibility of doing so lies firmly at the door of their broadband service provider.

- **Service providers should look to turn the home networking issue to their advantage.** According to Ovum's research, by investing in the home network, service providers reduce customer churn and increase ARPU. As the power of the traditional service bundle wanes, differentiating around features such as the home network will become increasingly important.

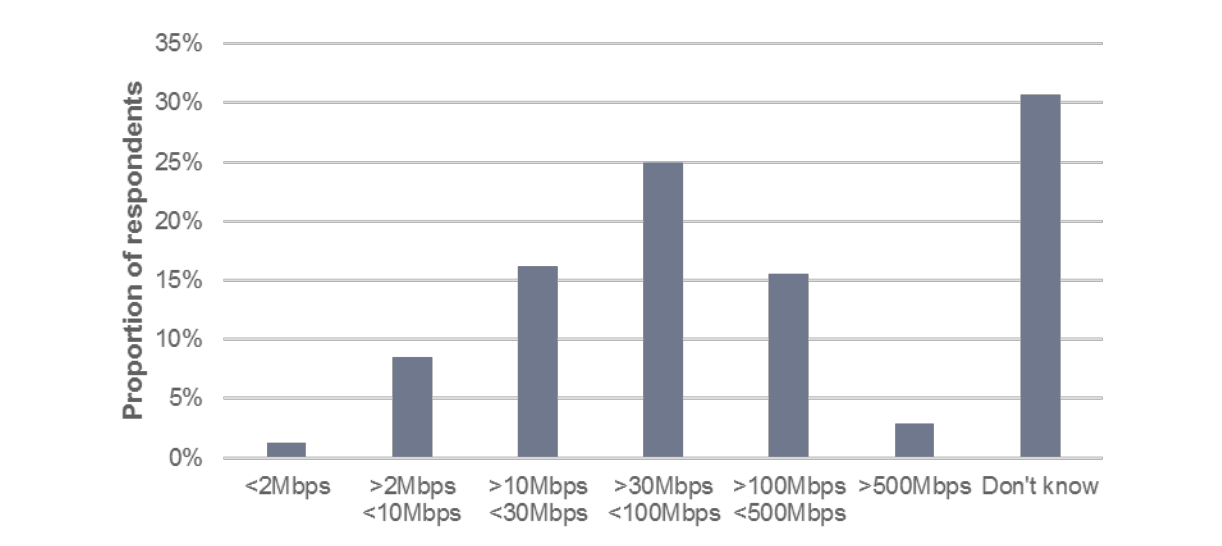## Recommendations for service providers

- **Treat the home network as a strategically important part of your network, not simply as a cost burden to be squeezed as much as possible.** Customers judge their service providers on the performance of the end-to-end network. In order to differentiate around quality, service providers should explore business models that enable them to invest in the home network rather simply treat it as a cost burden on their bottom line.

- **Look beyond a one-box-fits-all strategy.** No home is the same, so a single home network solution is unlikely to work. Broadband service providers therefore need to develop a more flexible home networking solution that will meet the needs of all customers.

- **Position more advanced products carefully.** Service providers need to think carefully about how they position home networking products. Not every home will require the most advanced home networking solution, but at the same time service providers need to be careful when advertising such products not to make customers with standard solutions feel they have an inferior product. The trick is to deliver the right solution to the right customer, while maximizing QoE at the right price for all.

- **Be prepared to help your customers.** The vast majority of customers have little idea about how home networking technology works, what different solutions are available, what the difference is between products, and what is going to be the best solution for them. In a nutshell they need help, and service providers need to develop cost-effective solutions that enable them to provide such advice.

The Connected Home Survey

Ovum's Connected Home Survey was carried out in December 2016 and included 1,000 respondents across three countries: Spain, the Netherlands, and Sweden. All respondents had access to fixed broadband at home, with 33% based on DSL access, 25% on cable modems, and 42% on fiber. The respondents had relatively advanced broadband services, with 63% of respondents who knew what speed they received claiming to have services of more than 30Mbps (see Figure 1).

In terms of living arrangements, 62% of respondents owned their own home, with 32% renting and 6% neither owning their own home or paying rent. The largest proportion (42%) lived in a house with more than three rooms. Across all types of household, 65% of respondents lived somewhere with more than four rooms and 23% with more than six rooms. Some 33% of respondents lived in an apartment with fewer than three rooms.

Figure 1: Respondents by speed of their home broadband service
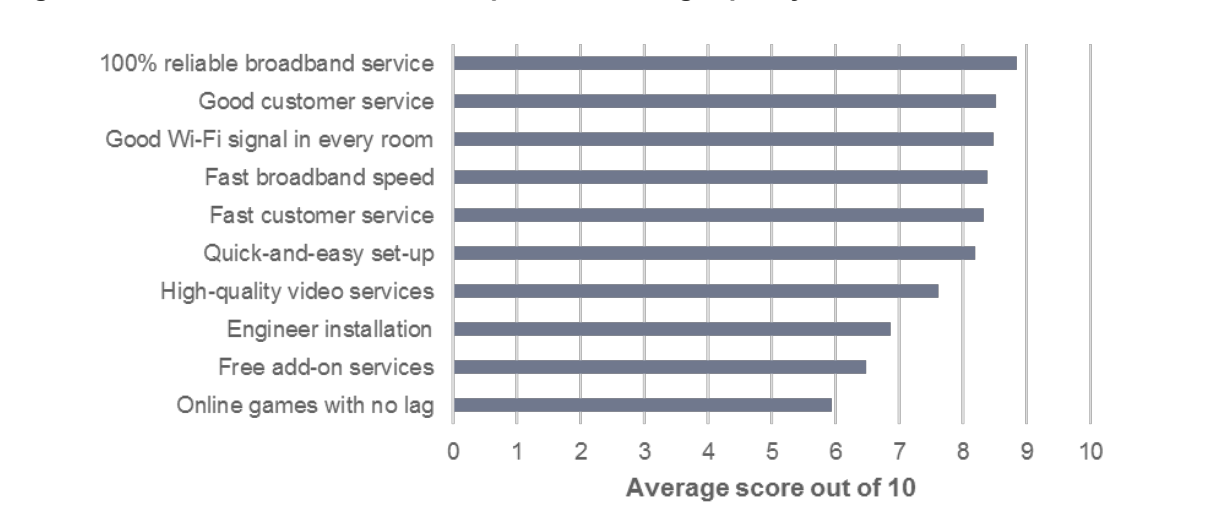

Source: Ovum

Speed alone does not deliver QoE

Speed is nothing without reliability and availability

Without providing a reliable service that is available in all parts of the home and backing it up with high-quality customer support, service providers will get nowhere simply delivering the fastest broadband service on the market. However, marketing campaigns still focus on "headline speeds" – to the point where 1Gbps residential services are becoming increasingly common even though a UHD video stream (one of the most bandwidth-hungry mass-market apps on the market today) from services such as Netflix and Amazon only requires a bandwidth of 25Mbps.

As shown in Figure 2, when respondents in Ovum's survey were asked about which characteristics they believed made up a high-quality broadband service, broadband speed was not top of the list.
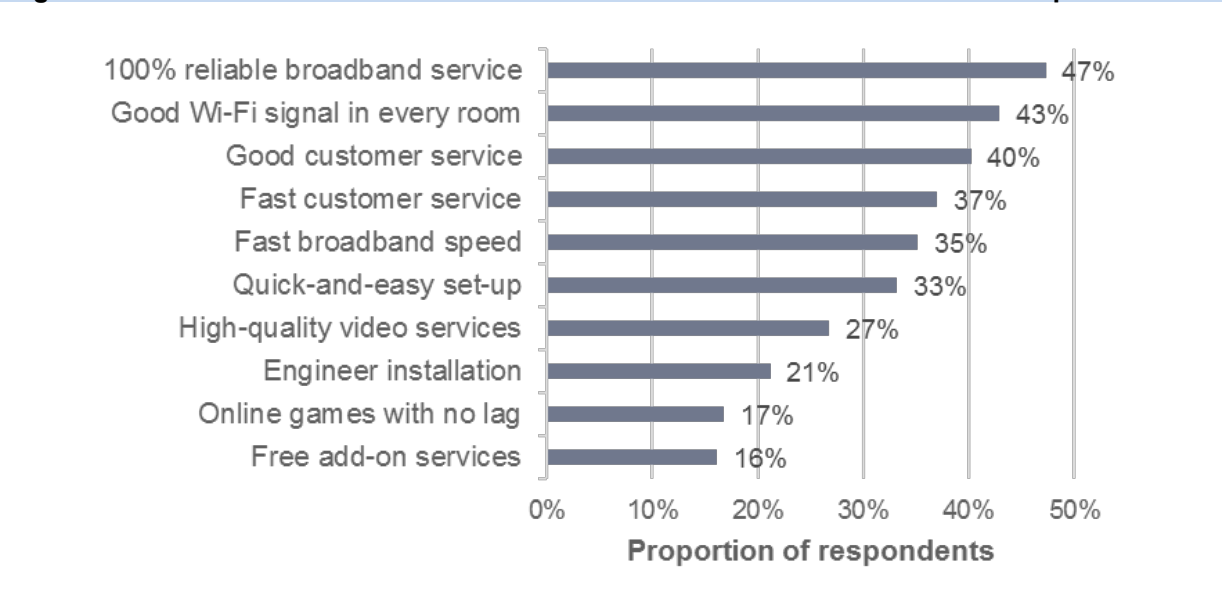
Figure 2: Which characteristics are important for a high-quality broadband service?

Source: Ovum

When respondents were asked to score the importance of various characteristics on the quality of their broadband service, broadband speed of course was an important factor, scoring on average 8.4 out of 10. However, it came out fourth in terms of importance behind reliability (8.8), good customer service (8.5), and good Wi-Fi coverage (also 8.5). Other characteristics with scores above 8 were a quick-and-easy set-up and quick access to the customer service desk. If we only analyze the 10-out-10 scores in terms of importance (see Figure 3), the difference in perceived importance between reliability and good availability to basic speed is even more striking.

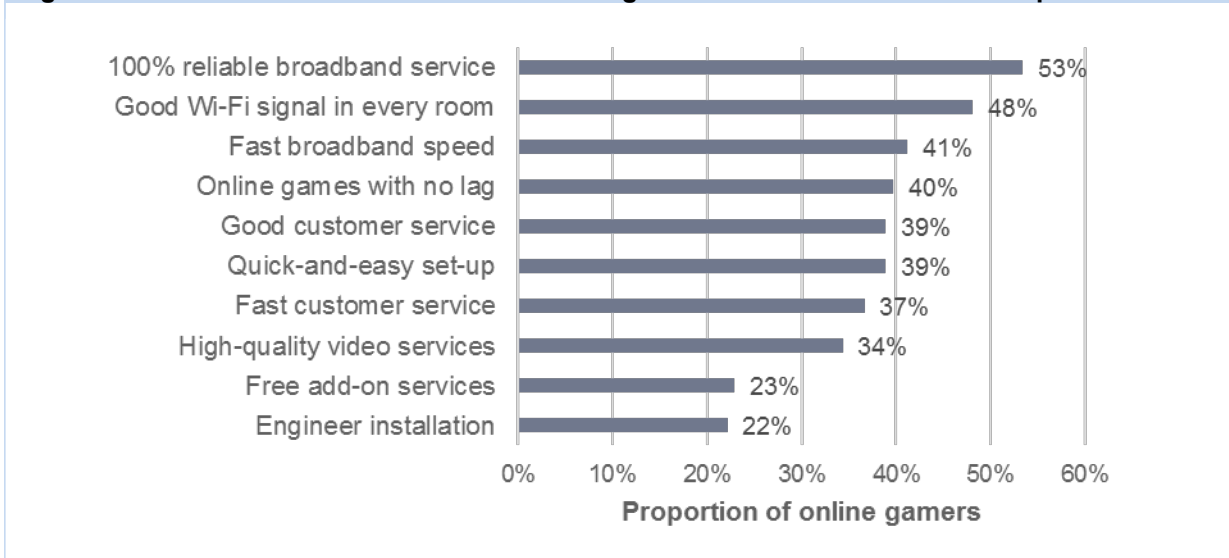**Figure 3: Broadband service characteristics that scored 10 out of 10 in terms of importance**

An opportunity to segment beyond heavy and light users

Categories of broadband customer tend to be fairly simplistic, usually based on whether a customer is a "light" (low-value), medium, or "heavy" (high-value) user of broadband access services. However, within this spectrum – and even probably within the same household – there will be a mix of different types of user with different needs and different ideas for what they consider to be of value. For example, looking at the whole sample group as shown in Figures 2 and 3, a low-latency broadband service that can enable better online gaming is pretty low on the scale of importance. However, if we analyze the same data but filter out all but those respondents who are heavy online gamers, the results are very different, as a broadband service that enables these respondents to play online games with no lag becomes much higher up in importance (see Figure 4). Although this is just a single example, it is clear that depending on what applications customers use their broadband service for, they will value different features from their broadband service provider.
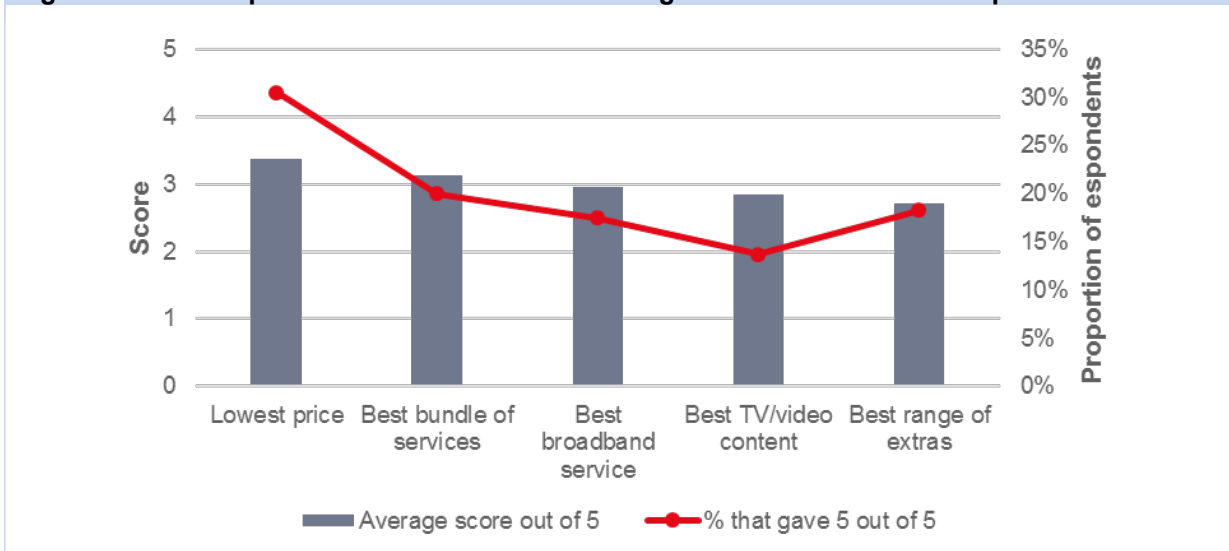
Figure 4: Broadband characteristics that online gamers ranked 10 out of 10 in importance

Value for money gains customers, but it is quality of experience that keeps themConsumers are naturally always looking for the best deal, but they also value quality. It is no different when they come to choosing their broadband service provider. Figure 5 shows the most important factors that consumers look for when they choose a broadband service. As expected, price and the service bundle (i.e. what you can get for that price) still come out top, but having the best-quality broadband service comes out a close third with an average score of 3 out of 5. As broadband markets mature and service bundles become virtually ubiquitous, differentiating around the bundle and price becomes increasingly difficult. Differentiating around having the best-quality service therefore is likely to only increase in importance over the next few years.

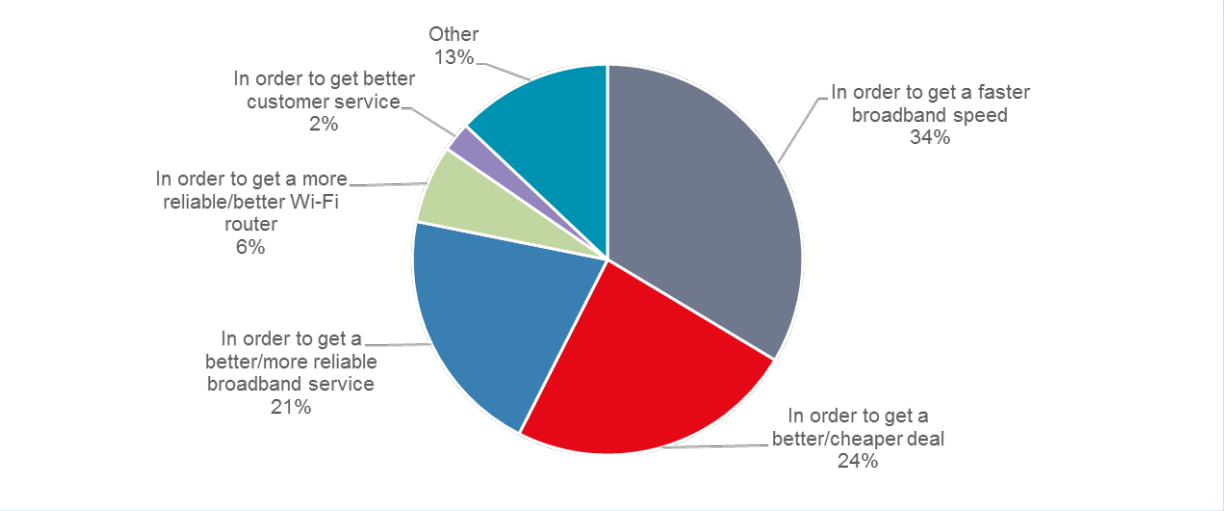**Figure 5: What respondents look for when choosing their broadband service provider**

Although price remains an important factor when choosing a broadband service provider, it is not the main driver for consumers to switch service providers. In the survey, 25% of respondents had changed their broadband service in the past 12 months, and in over 60% of cases, this was to gain a

more reliable or faster broadband service. Only 24% of cases were down to the customer looking to get a cheaper or better deal (see Figure 6). Indeed, when respondents were asked if everything else being equal, could they be persuaded to change to a new broadband service provider if the service provider promised to deliver a better overall broadband experience, 16% of respondents stated they would definitely change, a further 24% would probably change, and 27% stated they would possibly change. When it is no longer economically possible to compete on price, having the best broadband service on the market will be essential for maintaining market share.

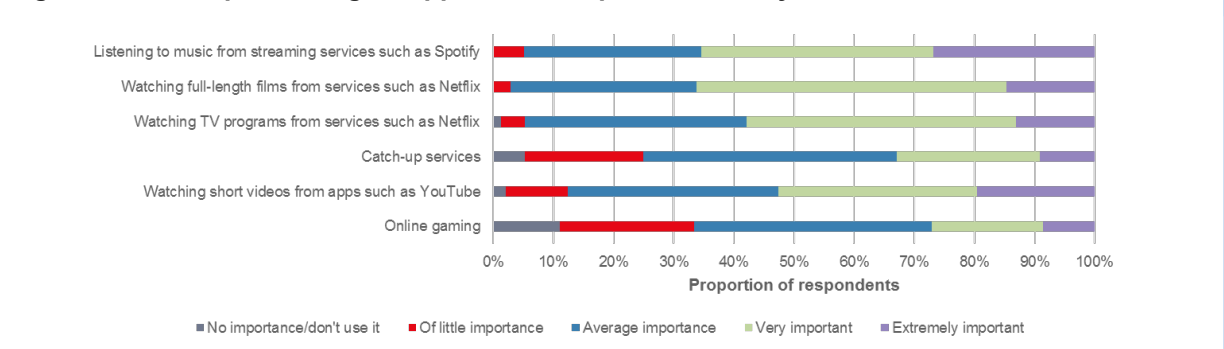**Figure 6: Why respondents switched their broadband service provider**

Source: Ovum

The home network has become a critical element of the end-to-end network

Digital applications are essential to everyday life

Digital applications, especially music and video applications, have been essential elements of daily life. In Ovum's survey, more than 50% of all respondents stated that digital music and online film and TV services (e.g. Netflix) were very or extremely important to their everyday lives. For respondents aged between 16 and 24 years of age, this figure increased to over 65% for music and videos and over 50% for TV and YouTube-type services.
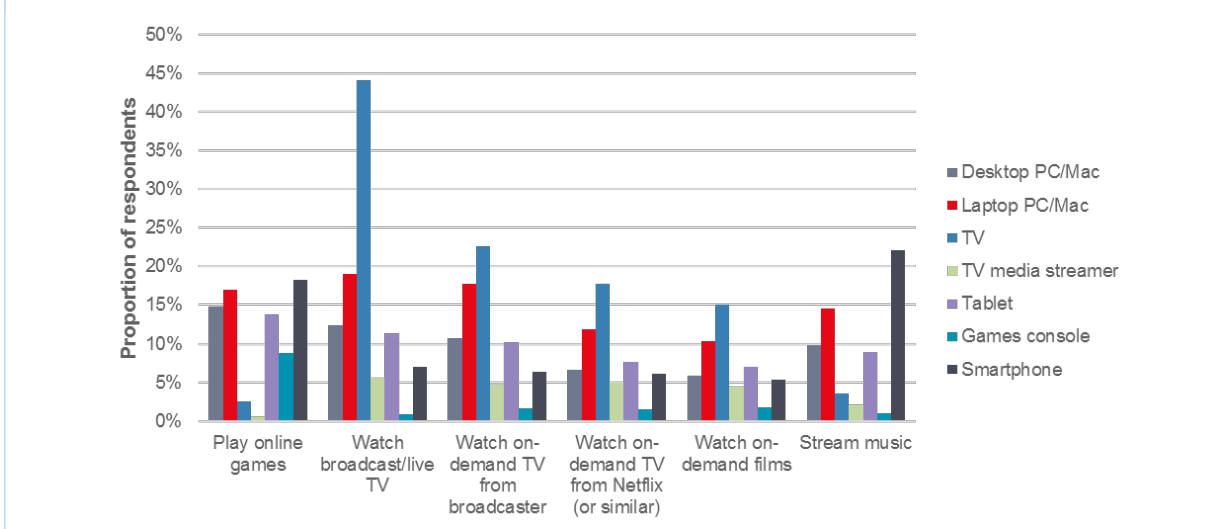
Figure 7: How important digital apps are to respondents' daily lives

Source: Ovum

The increase in connected video-enabled devices in the home means that digital content is increasingly consumed across a wide range of devices. According to Ovum's survey, watching broadcast/live TV is the only activity still dominated by a single device, the TV; however, even then, nearly 20% of respondents watched broadcast TV on a laptop and 10% on a tablet (see Figure 8).

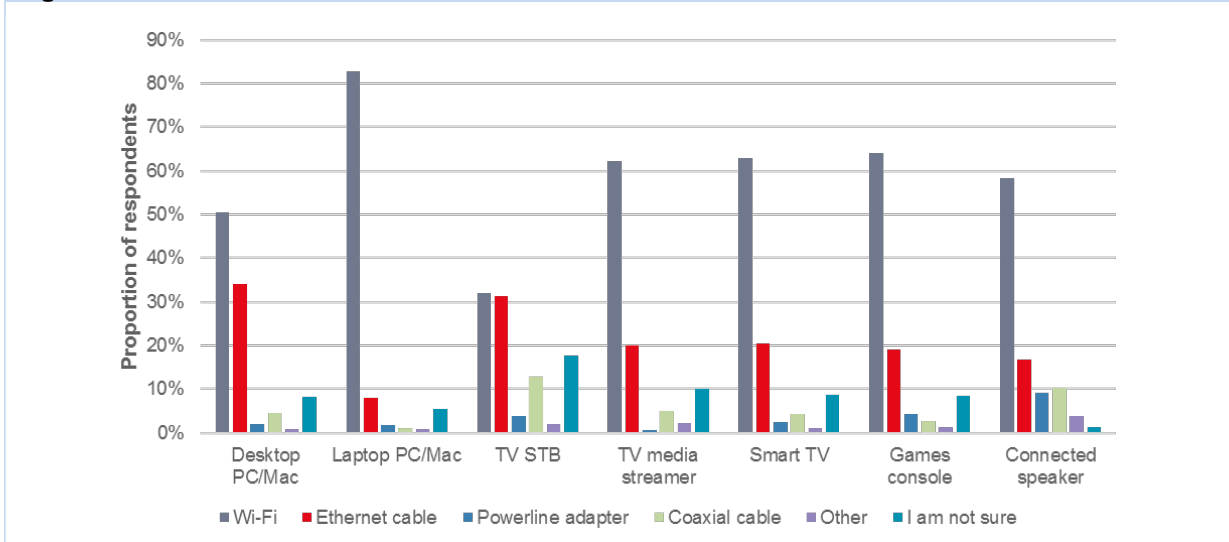**Figure 8: How respondents use devices for particular activities**

Source: Ovum

Wi-Fi has become a critical network technology for digital applications

An increasing number of connected devices are reliant on Wi-Fi technology to connect them to the home router, which in turn means that the overall QoE of applications that are so important to our daily lives has become by default dependent on the reliability and capability of this network medium. As illustrated in Figure 9, the dominant type of home network connection for media devices other than TV STBs is now Wi-Fi.

Figure 9: How connected devices are connected to the broadband router

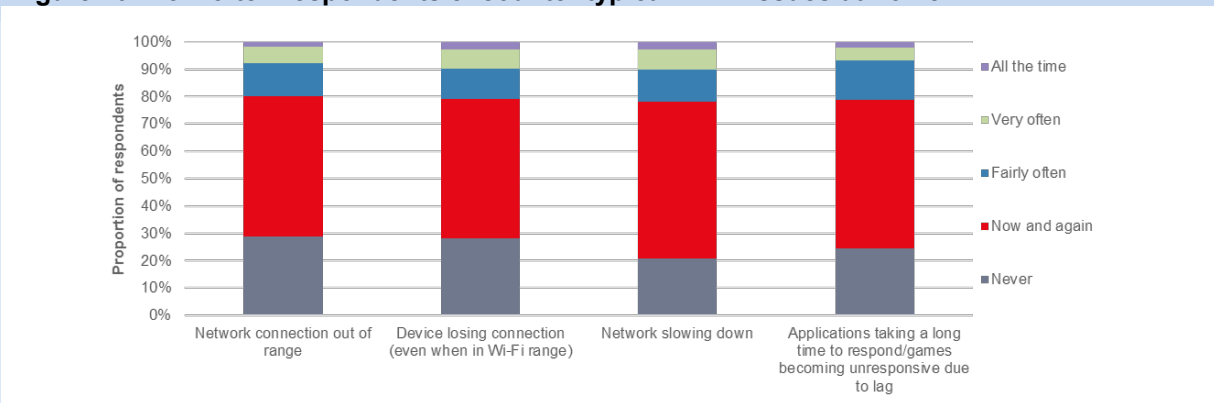Source: Ovum

It's not all about entertainment

Just over 20% of respondents in Ovum's survey worked from home at least one day a week and, overall, 40% of respondents worked from home on at least an occasional basis. For those who worked from home on a regular basis, the reliability of the home broadband network understandably became very important. Over 70% of respondents that worked from home on a daily basis stated that a reliable broadband network was of extreme importance to them.

Wi-Fi is still far from perfect

Majority of users still encounter Wi-Fi issues

Even though Wi-Fi technology has come a long way since it was first introduced as a home networking technology in the late 1990s, the majority of users still encounter Wi-Fi-related issues at home (see Figure 10). Only 20–30% of respondents claimed to never experience issues such as losing connection, network slowdown, or network latency, which given the importance of the Wi-Fi connection in terms of delivering digital applications, equates to a major issue for service providers.

Figure 10: How often respondents encounter typical Wi-Fi issues at home

Source: Ovum

Of course how often such issues are experienced differs based on such factors as size of home, building materials used in the home, applications used and frequency of usage, and level of local interference from other networks and other electrical devices. According to Ovum's survey, a small apartment with fewer than three rooms is approximately twice as likely not to have issues with Wi-Fi reach than an individual house with more than three rooms. It is clear that if all consumers are to experience optimum QoE, those in the latter category will need help.

Frequent issues decrease users' QoE

More than 80% of the respondents in Ovum's survey who never experienced Wi-Fi issues rated their Wi-Fi network as good or excellent. However, only 60–70% of respondents who experienced Wi-Fi issues now and again and 25–35% who experienced issues on a more regular basis felt the same way. As Figure 11 shows, different issues have a similar effect on Wi-Fi rating, suggesting that the respondent only had to experience any one of these issues to degrade the overall experience by the same level.

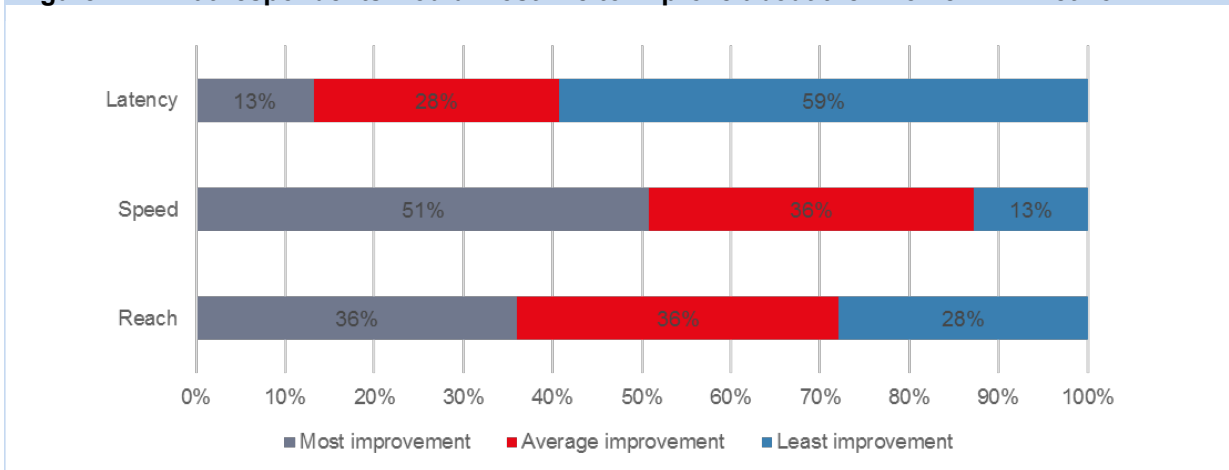**Figure 11: Respondents' rating of their Wi-Fi network by frequency of Wi-Fi issues**

Source: Ovum

Increasing the quality of the home network

Some 40% of respondents wanted to improve the quality of their home network over the next 12 months. Overall, respondents felt that increasing the speed of the Wi-Fi network would bring about the most improvement, followed by improving reach. Respondents believed that improving latency would bring about the least improvement – although this was not always the case among respondents more likely to notice lag (e.g. frequent online gamers).

Figure 12: What respondents would most like to improve about their home Wi-Fi network
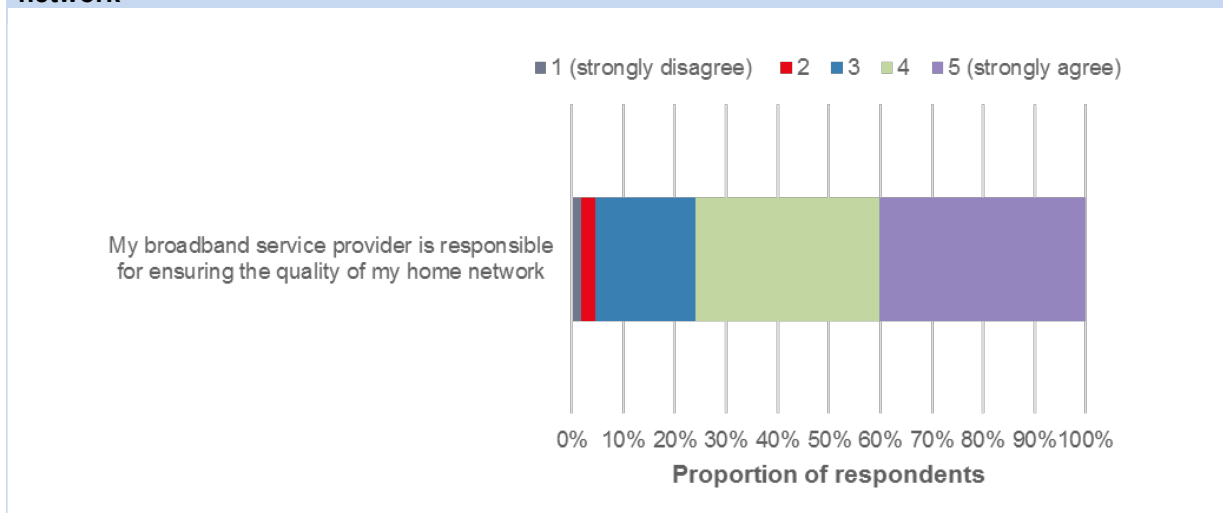

Source: Ovum

Although a significant proportion of respondents wanted to increase the quality of their home network, many did not feel they had the necessary expertise or knowledge to do so. Only 13% of respondents felt confident that they knew what to do to improve their home network.

What this means for broadband service providers

Consumers believe the home network is the responsibility of the broadband service provider

Whether technically correct or not, the home network is perceived to be the responsibility of the broadband service provider by the majority of consumers. When asked if they agreed with the statement "My broadband service provider is responsible for ensuring the quality of my home network," on a scale of 1–5 (with 1 being strongly disagree and 5 being strongly agree), 40% of respondents gave a score of 5 and nearly 80% gave a score of 4 or above.

Figure 13: Consumers believe that broadband service providers are responsible for the home network
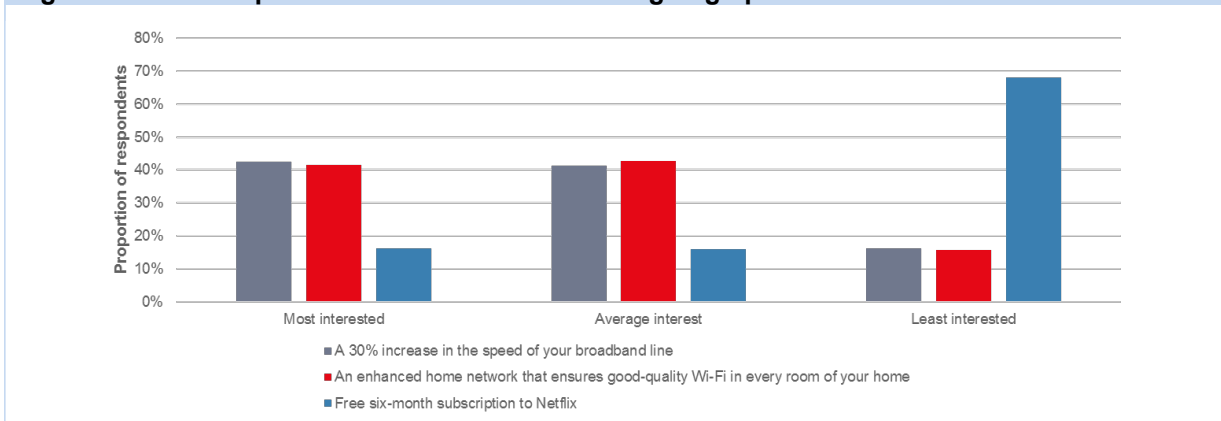

Source: Ovum

Because it is perceived to be part of the overall network, the home network is a key element of broadband service providers' offerings. Having a "make it as cheap as possible" strategy will lead to the perception of a low-quality offering not just within the home network, but for the broadband service as a whole. It is imperative therefore that service providers take control of this part of the network and enable the best end-to-end service that they can.

Turning a curse into a blessing

For many years, in order to reduce both capex and opex, broadband service providers have tried to reduce the level of involvement they have in the home network – in some cases to the extent of trying to push the responsibility of the home router onto the end user. However, as illustrated in this report, a low-quality home-networking strategy will only lead to increased calls to customer services and higher customer churn, whereas investing in the home network not only increases the stickiness of the service but also potentially increases consumer ARPU. Figure 14 shows that offering an advanced home network solution is as powerful as offering a 30% increase in broadband speed in encouraging customers to sign for a new 12-month broadband contract, and significantly more powerful than offering free access to a video service such as Netflix.
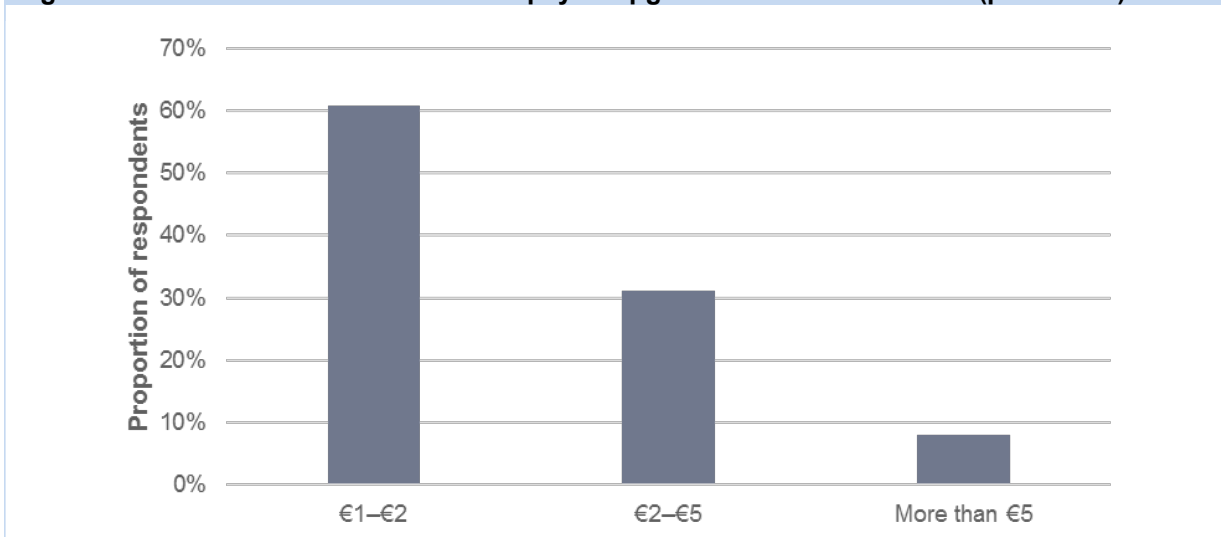
Figure 14: How respondents rank incentives for signing up to a 12-month broadband contract

- A 30% increase in the speed of your broadband line
- An enhanced home network that ensures good-quality Wi-Fi in every room of your home
- Free six-month subscription to Netflix

Source: Ovum

A large percentage of respondents said they would also be willing to pay an extra amount on top of their broadband service to ensure a high-quality home broadband network experience. Nearly 40% of respondents said they would be willing to pay more than €2 ($2.1) a month for such a solution.

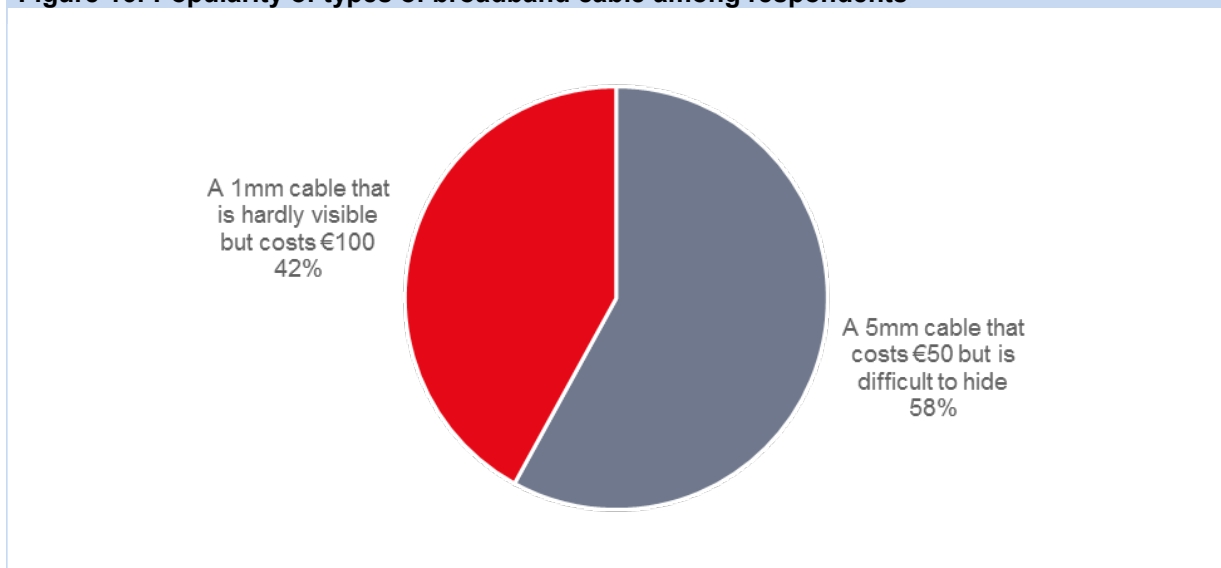**Figure 15: How much consumers would pay to upgrade their home network (per month)**

Source: Ovum

Reducing the reliance on Wi-Fi in the home

As Wi-Fi is so prominent in the home network, it has become a focal point in this report. However, there are other solutions that could be used in conjunction with Wi-Fi to enhance the home network. One such solution is to install a wireline backbone around the home, connecting individual Wi-Fi hotspots.

Such solutions of course increase the complexity and cost of installing the home network, as well as (and perhaps most importantly from a customer point of view) not being as aesthetically pleasing. However, in some cases, adding physical wiring around the home might be the most effective – or the only practical – way of improving the overall network. In this case, 42% of respondents in Ovum's survey said they would rather pay twice as much for thinner cabling that is hard to see, in order to minimize the impact of wiring on the look and feel of the home (see Figure 16).

Figure 16: Popularity of types of broadband cable among respondents

A 1mm cable that is hardly visible but costs €100
42%

A 5mm cable that costs €50 but is difficult to hide
58%

Source: Ovum

Appendix

Further reading

Consumer Broadband Subscription and Revenue Forecast: 2016–21, TE0003-000963 (October 2016)

2016 Trends to Watch: Connected Home, TE0003-000893 (January 2016)

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