



Broadband advertising not up to speed

Summary

Access to the internet is an essential part of 21st century life. Around 73% of UK households have a fixed broadband connection and spend £158.28 on average a year on broadband.¹

The guidance on the *Use of Speed Claims in Broadband Advertising*, issued by the Committee of Advertising Practice (CAP) and the Broadcast Committee of Advertising Practice (BCAP), allows broadband providers to advertise an 'up to' speed as long as 10% of their customers are able to receive it.² This means as many as 90% of their customers could be unable to receive the 'up to' speed advertised.

In November 2014, Which? published research that showed the way that speeds are advertised significantly influences consumers' decisions when purchasing a broadband package. We found 88% of people consider speed to be an important factor influencing their decision to purchase broadband.

This report provides a secondary analysis of the data behind Ofcom's report, *UK Fixed-Line Broadband Performance* which examined broadband performance in November 2014. We used this data to examine how many broadband customers in the UK can receive the 'up to' speed advertised. Our analysis found that:

- 74% of UK households with fixed broadband - around 15.4 million households³ - did not receive the 'up to' speeds advertised.
- Only 17% of households with fixed broadband received an average speed that matched their advertised 'up to' speed, and this figure dropped to 15% during peak times.
- The average maximum speed that broadband customers received was only 68% of the advertised speed.

When households with cable broadband are excluded, we found that:

- 92% of these customers did not get the advertised speed.
- Almost no one on Asymmetric Digital Subscriber Line (ADSL) packages could get advertised top speed of 8Mbps.

¹ (Ofcom, 2014b, p. 2); and (Ofcom, 2014a)

² (BCAP and CAP, 2012)

³ Extrapolation from Ofcom (November 2014) Broadband Speed Survey, ONS Internet Access (2014), and DCLG Household Population Projection Statistics, 2015.

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- Only 1% of customers on fibre optic packages received the advertised top speed of 76Mbps.
- The average maximum speed that non-cable customers received was only 59% of the advertised speed.

Of the broadband packages we analysed,⁴ we found three that failed to meet CAP and BCAP's guidance, which stipulates advertised speeds must be available to at least 10% of customers.

- BT's 'up to' 76 Mbps package: Only 1% of customers received the maximum advertised speed.
- Plusnet's 'up to' 76 Mbps package: Only 1% of customers received the maximum advertised speed.
- TalkTalk's 'up to' 17 Mbps package: Only 4% of customers received the maximum advertised speed.

Although most broadband packages did meet the current advertising guidance, we found that very few people were able to get the maximum speed advertised. These findings strengthen the case for reform of how broadband speeds are advertised.

Recommendations

Which? is calling for Ofcom to work with the ASA, CAP and BCAP to create an action plan, by the end of 2015, to improve the way broadband speeds are advertised. Broadband providers should be required to:

- Only advertise speeds available to the majority of their customers.
- Be upfront about how many people can actually get the speed advertised.

Ofcom should also publish, at least annually, data for each broadband provider and package, where possible, showing what proportion of consumers receives the advertised speed, as well as the average speed consumers receive compared with the advertised speed.

Speed is one of the most important factors for consumers choosing broadband. As this report demonstrates, under the current advertising guidelines, broadband providers can entice consumers to buy broadband products by advertising speed claims the vast majority of customers never receive.

The recommendations outlined above will enable consumers to make more informed decisions within the broadband market. By revising the advertising guidelines to ensure that broadband providers advertise the speeds that the majority of consumers can achieve, the advertising watchdogs can help ensure that consumers:

- Have more accurate information about broadband speeds they are likely to achieve, informing better choices, and
- Are getting the speeds they pay for and expect to achieve.

⁴Like Ofcom, we were unable to analyse all broadband packages because, in some cases, we had inadequate sample sizes.

The logo for 'Which?' is a red square with the word 'Which?' in white, bold, sans-serif font. The question mark is slightly larger and more prominent than the other letters.

Although Ofcom is not responsible for regulating advertised broadband speeds, it is mandated to promote the interests of consumers in the broadband market. By extending its analyses to compare customers' speed with the advertised speed, and by reporting on more providers and packages, Ofcom can help consumers get information about which broadband providers are better delivering the speeds they advertise. Making this information publically available will help hold broadband providers accountable to the advertising guidelines.



Introduction

The most recent Which? customer satisfaction survey of the top 100 brands rated communications providers such as BT, EE and TalkTalk among the bottom ten companies. Only Ryanair and energy suppliers received lower scores.⁵ Moreover, only 41% of consumers trust their broadband and home phone services.⁶

Currently, the speeds quoted in broadband adverts only need to be available to 10% of customers to meet advertising guidelines. This rule was stipulated by the Committee of Advertising Practice (CAP) and the Broadcast Committee of Advertising Practice (BCAP) in 2011. It is enforced by the Advertising Standards Authority (ASA). Our research found that all the major broadband providers prominently feature 'up to' speeds when advertising broadband packages, particularly when marketing online or by direct mail.

In September 2014, Which? conducted two pieces of consumer research to understand how advertised speeds affect the decisions people make when choosing a broadband provider. In the first, we found 88% of people consider speed to be the second most important factor influencing their decision - beaten only by price at 94%. However, the majority (84%) of consumers are unaware that advertised maximum speeds may only be available to just 10% of customers.⁷

The second piece of research was a choice experiment designed to examine how different factors influence consumer's decisions when purchasing broadband. We found consumers made different choices when informed that only 10% of customers might receive the maximum advertised speed. We also found that speed becomes more important in people's decisions when they are told the advertised speed is available to a greater proportion of people. This led us to conclude that consumers will make different choices when the advertised speeds are known to be more realistic.

However, our new analysis shows that most consumers will not receive the 'up to' speed that has been advertised. This lack of transparency means consumers are not getting what are paying for. It also damages competition in the market by making it difficult for consumers to find the right information when making decisions.

As with broadband providers, general insurance and consumer credit companies advertise key characteristics of their products that vary from customer to customer. But in these markets, the Financial Conduct Authority (FCA) has imposed more stringent regulations to prevent misleading advertising claims. For example, in the General Insurance market, if a financial promotion claims to offer 'Car insurance from only £100', a firm must reasonably expect that this claim can be achieved by the majority of customers, Or they must prominently advertise the proportion of customers who are likely to achieve this price.⁸ Similarly, credit card

⁵ Which? 'Best and Worst Brands for Customer Service', September 2014

⁶ Which?. Consumer Insight Tracker. May 2015.

⁷ Populus, on behalf of Which?, interviewed 2,339 UK adults online, between 17th and 18th September 2014. Data was weighted to be representative of the UK adult population.

⁸ (Financial Conduct Authority, 2015)



providers must advertise an APR that will be provided to at least 51% of the credit agreements made as a result of a specific promotion.⁹

Unlike the UK, broadband providers in America advertise download speeds that are much closer to reality. In the UK, non-cable broadband providers structure their prices around four advertised speeds: 8Mbps, 17Mbps, 38Mbps and 76Mbps. However, in America, the pricing structures vary based on the actual experience of customers. For example, American providers offer seven different advertised speeds under 8Mbps. The FCC also publishes yearly data on American advertised speeds compared to the average speeds consumers are getting.

As a result, the broadband speeds received by American consumers are much more likely to match the speeds that are advertised. For example, in 2014 the Federal Communications Commission (FCC) found 90% of ADSL customers received an average download speed that was at least 72% of the advertised speed.¹⁰ But in the UK, we found 90% of ADSL customers received an average download speed that was at least 10% of the advertised speed.

Which? wants to see the lessons learnt from these markets applied to the UK broadband sector. This would ensure the interests of consumers are better served in the broadband market.

Analysis of advertised download speeds against received download speeds

To understand the download speeds consumers receive compared to the speeds that are advertised, we conducted analysis of the data behind Ofcom's report, *UK fixed-line broadband performance (November 2014)*, published in February 2015.

Ofcom assembled a representative survey panel of 1,992 broadband users. Each user was sent a monitoring unit connected to their router, which extracted broadband speed data over the course of a 24 hour period.¹¹ The dataset Ofcom published to accompany their report contains three measures of download speed each participant received over that 24 hour period:

- Maximum speed - the highest speed measured in November 2014;
- The average speed across 24 hours;
- The average speed between peak hours of 8pm and 10pm.

This report analyses each of these three measures, but focuses on the maximum speeds received as this is the measure by which CAP and BCAP's advertising guidelines are enforced. As well as examining the national figures, we have analysed the data by looking at different technology, advertised speeds and location (rural versus urban).

⁹ (Financial Conduct Authority, 2014)

¹⁰ (FCC, 2014, p. 41)

¹¹ For a detailed account of the technological and research methodologies used to analyse this data, see Annex 2 and 3 of Ofcom's report: (Ofcom, 2015) *UK fixed-line broadband performance, November 2014*.



The speeds broadband providers can deliver to consumers depend on, among other things, the quality of the lines that connect consumers' homes to the exchange. We had expected that a significant number of households would receive a download speed close to 100% of the advertised speed. Consequently, we decided to give providers a tolerance threshold of 1%. This means we used the data to determine what proportion of customers received at least 99% of the speed advertised. The figures in this report that refer to the portion of consumers who received the advertised speed reflect this tolerance threshold.

As with Ofcom's report, we had a sufficient sample size to comment on the following individual ISP packages:

- BT's ADSL2+, 'up to' 38Mbps FTTC and 'up to' 76Mbps FTTC services
- EE's 'up to' 38Mbps FTTC service
- Plusnet's ADSL2+, 'up to' 38Mbps FTTC and 'up to' 76 Mbps FTTC services
- Sky's ADSL2+ and 'up to' 38 Mbps FTTC services
- TalkTalk's ADSL2+ service
- Virgin Media's 'up to' 50Mbps, 'up to' 100Mbps and 'up to' 152Mbps cable services.

National

Our analysis found that 74% of UK households with fixed broadband - around 15.4 million households¹² - were paying for packages with an advertised 'up to' speed they never received. Only 17% of households received an average speed that matched the advertised speed; this figure dropped to 15% during peak evening times.

Customers on cable are likely to receive faster speeds than customers on any other technology. A cable modem allows data to be sent over cable television infrastructure. Unlike ADSL, cable broadband does not experience severe speed degradation the further away a customer is from the cabinet or exchange.¹³

When we excluded households that receive cable broadband, we found that 92% of the remaining customers could not achieve the advertised maximum speed. In addition:

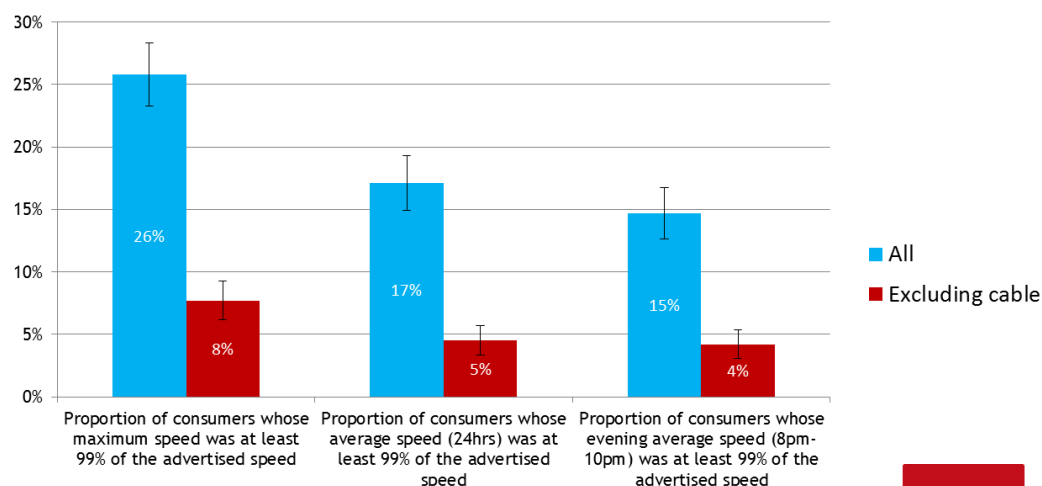
- Only 5% of consumers received an average speed that matched the advertised speed.
- Only 4% received the advertised speed during peak evening times.

¹² Extrapolation from Ofcom (November 2014) Broadband Speed Survey, ONS Internet Access (2014), and DCLG Household Population Projection Statistics, 2015.

¹³ The exchange is where local broadband and phone connections meet and connect to their providers' network. The cabinet sits by the roadside and splits up and sends broadband signal to individual homes.



Figure 1: Percentage of UK customers getting the advertised 'up to' speed in November 2014¹⁴



Source: Which? analysis of Ofcom data



We also found that on average, the maximum speed broadband customers received was only 68% of the advertised speed.

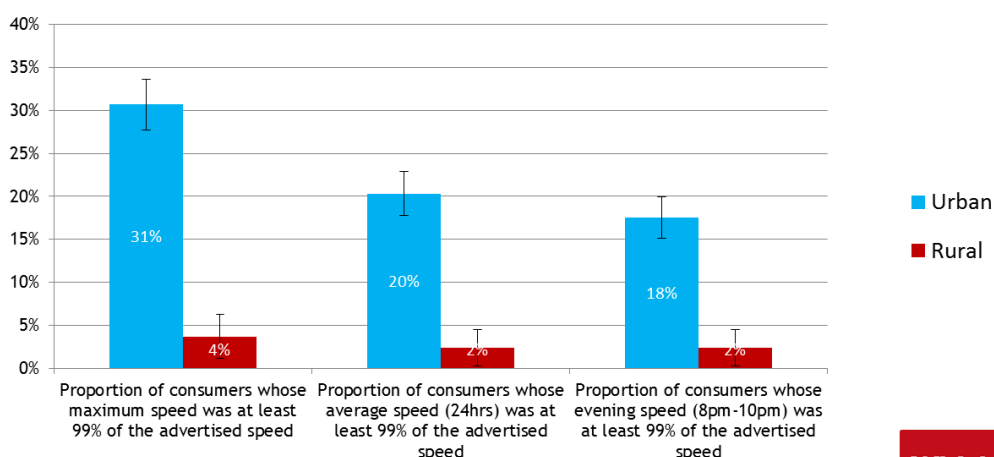
Rural versus urban

When we looked at the download speeds received by rural and urban households, we found that households in rural areas were less likely to receive their broadband packages' advertised speeds than households in urban areas.

- While 31% of urban households were able to receive a maximum speed equal to the advertised 'up to' speed, only 4% of rural customers could receive the speed advertised.
- While 20% of urban households received an average speed that matched their packages' advertised 'up to' speed, only 2% of rural customers could do so.
- While 18% of urban households received an evening peak speed that matched their package's advertised 'up to' speeds, only 2% of rural customers received the advertised speed during peak evening times.

¹⁴ The 95% confidence intervals are represented by the error bars in all the graphs presented in this briefing. For further information, see page 19.

Figure 2: Percentage of rural and urban customers getting the advertised 'up to' speed in November 2014¹⁵



Source: Which? analysis of Ofcom data

These figures reflect that rural broadband infrastructure is predominantly served by the ADSL2 network, a system of copper wires that can handle top speeds of 24Mbps. Broadband does not travel well through copper: the length and quality of the lines between customers' homes and the local telephone exchange affect the speed customers receive. As a result, remote homes often get the slowest service.

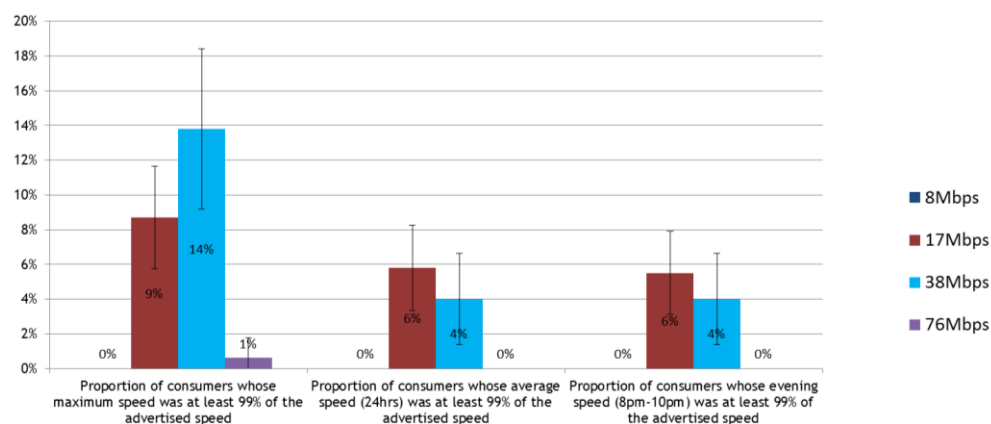
Package speed

The majority (59%) of broadband connected households in the UK subscribe to packages advertising speeds between 10Mbps and 30Mbps. A third (32%) are on packages that advertise speeds of 30 Mbps and higher. 9% of households are on packages advertising speeds of 8Mbps or less. Our analysis found:

- Almost no one on 'up to' 8Mbps packages received the maximum advertised speed.
- Only 1% of customers on packages advertising 'up to' 76Mbps received the maximum advertised speed.
- Only 9% of customers on packages advertising 'up to' 17 Mbps received the maximum advertised speed. Only 6% of customers on these packages received an average speed that matched the speed advertised.
- Only 14% of customers on packages advertising 'up to' 38 Mbps received the maximum advertised speed. Only 4% received an average speed that matched the speed advertised.

¹⁵ The 95% confidence intervals are represented by the error bars in all the graphs presented in this briefing. For further information, see page 19.

Figure 3: Percentage of customers on non-cable lines getting the advertised 'up to' speed by package speed in November 2014¹⁶



Source: Which? analysis of Ofcom data



Our analysis also revealed that the average maximum speed a customer received on an 'up to' 8Mbps package was 3.4Mbps (43% of the advertised speed). On a 17Mbps package it was 9.1Mbps (54%); on a 38Mbps package it was 34Mbps (90%); and on a 76Mbps package it was 63Mbps (83%).

Technology type

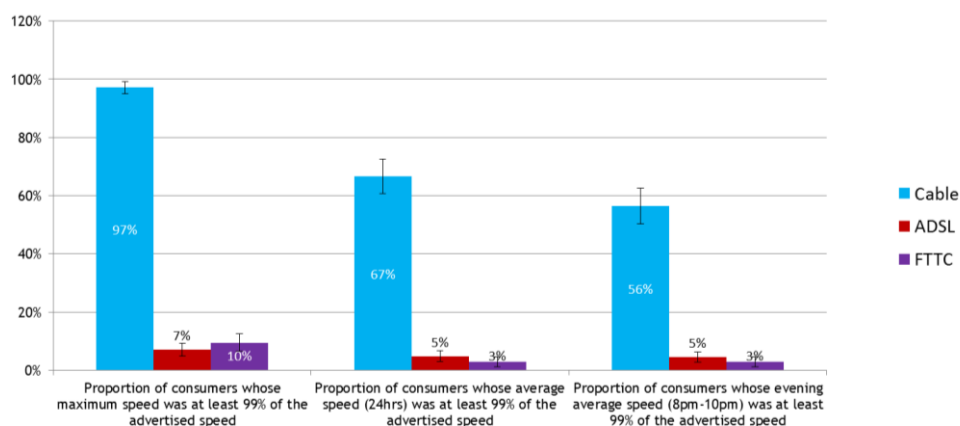
The majority of broadband connections in the UK use Asymmetric Digital Subscriber Line (ADSL) technology. 59% of broadband connections are ADSL2 or ADSL2+, while 7% operate on the most basic ADSL technology. The remaining 34% of consumers use more advanced broadband technology: 22% use Virgin Media's cable lines, 12% use fibre-to-the-cabinet (FTTC) technology, and 0.1% use fibre-to-the-premises (FTTP).¹⁷

¹⁶ The 95% confidence intervals are represented by the error bars in all the graphs presented in this briefing. For further information, see page 19.

¹⁷ (Ofcom, 2014b, p. 44).



Figure 4: Proportions of consumers receiving advertised 'up to' speeds by technology in November 2014¹⁸



Source: Which? analysis of Ofcom data



ADSL

The vast majority (93%) of ADSL consumers could not get their package's advertised maximum speed:

- Only 5% of ADSL customers received an average speed that matched the speed advertised.
- Only 5% received the advertised speed during peak evening times.
- The average maximum speed that ADSL customers received was only 47% of the advertised speed.

Cable

Virgin Media, which owns the cable infrastructure, advertised maximum speeds that 98% of their customers could achieve:

- 67% of cable consumers received an average speed that matched the speed advertised.
- 56% of cable consumers received the advertised speed during peak evening times.
- The average maximum speed a cable customer received was faster (106%) than the advertised speed.¹⁹

FTTC

FTTC providers advertised maximum speeds that only 10% of their customers could achieve :

¹⁸ The 95% confidence intervals are represented by the error bars in all the graphs presented in this briefing. For further information, see page 19.

¹⁹ 'Virgin Media's cable network is configured to provide maximum speeds that are higher the relevant services' advertised speeds.' (Ofcom, 2015, p. 23)

- Only 3% of FTTC customers received an average speed that matched the speed advertised, or received the advertised speed during peak evening times.
- The average maximum speed an FTCC customer received was 88% of the advertised speed.

Broadband providers

BT is the largest fixed broadband provider in the UK, with a market share of 31%. Of the other providers Sky and Virgin Media both have a market share of 20%, TalkTalk has a share of 15% and EE has a share of 3%.²⁰

The following three sections examine the maximum, average and evening speeds experienced by consumers, broken down by broadband provider and package.

Maximum speeds

Maximum line speed is the highest download speed that a broadband connection is capable of delivering. In our analysis, the cable-provider Virgin Media is the only company that delivered the advertised speed to the majority (98%) of their customers. With each of their packages, at least 96% of customers received the maximum advertised speed (Figure 5).

Most of the broadband packages offered by providers meet CAP's current advertising guidance, which stipulates advertised speeds need to be available to at least 10% of customers. We found, though, that the majority of non-cable customers were unable to receive the maximum advertised speed.

Only 4% of TalkTalk's customers were able to receive the maximum speed presented in TalkTalk's adverts. Although some of BT and Plusnet's packages met the CAP guidelines, only 6% and 7% of their respective customers were able to receive the maximum advertised speed.

Of the packages analysed, we found that three failed to meet the advertising watchdogs' current guidance, which stipulates advertised speeds need to be available to at least 10% of customers:²¹

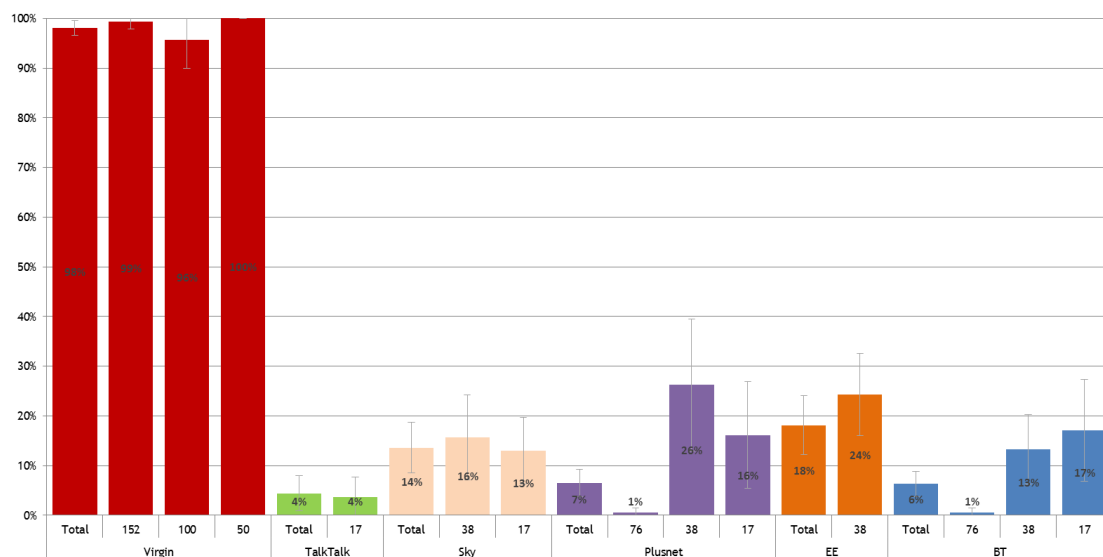
- **BT's 'up to' 76 Mbps package:** Only 1% of customers received the maximum advertised speed.
- **Plusnet's 'up to' 76 Mbps package:** Only 1% of customers received the maximum advertised speed.
- **TalkTalk's 'up to' 17 Mbps package:** Only 4% of customers received the maximum advertised speed.

²⁰ (Ofcom, 2014c, p. 332)

²¹ We were unable to analyse all broadband packages due to insufficient sample sizes within Ofcom's data, see page 6 for details.



Figure 5: Proportion of consumers whose maximum speed reached the advertised speed by provider in November 2014²²



Source: Which? analysis of Ofcom data



Average speeds

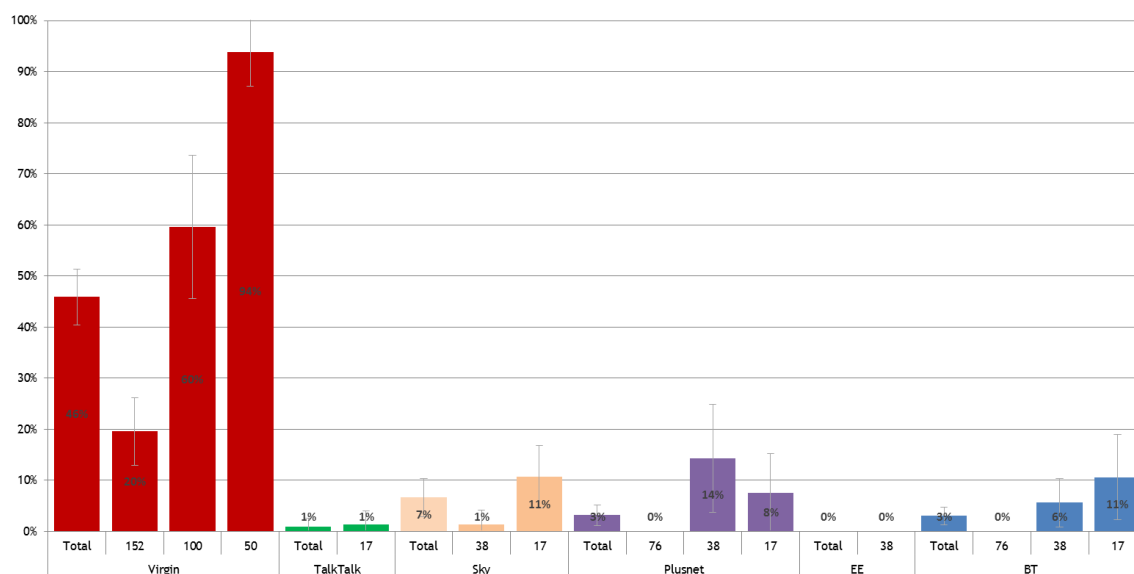
Although 98% of Virgin Media customers are capable of receiving the advertised 'up to' speed, Virgin Media only delivered an average speed that matched the speed advertised to 46% of its customers (figure 6). This figure fell for their faster packages advertising speeds of 100Mbps and 152Mbps, dropping to 60% and 20% respectively.

When we combined the other companies, they delivered an average speed that matched the advertised speed to 3% of their customers. Among the non-cable providers, Plusnets' 38Mbps package delivered an average speed that matched the advertised speed to the most customers (14%), followed by Sky and BT's 17Mbps packages (both 11%).

²² We were unable to analyse all broadband packages due to insufficient sample sizes within Ofcom's data, see page 6 for details. The 95% confidence intervals are represented by the error bars in all the graphs presented in this briefing. For further information, see page 19.



Figure 6: Proportion of consumers whose average speed matched the advertised speed by provider in November 2014²³



Source: Which? analysis of Ofcom data

Evening speeds

36% of Virgin Media customers received a peak evening average speed that matched the provider's advertised speeds. For packages of 100Mbps and 152Mbps 'up to' speeds (figure 7), this figure fell.

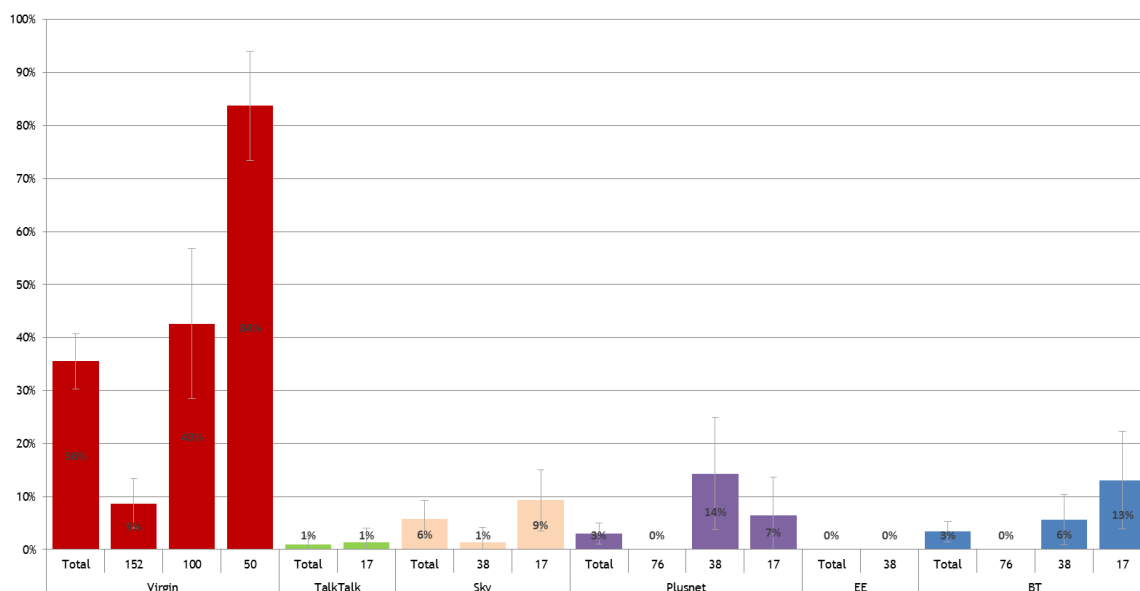
When we combined the data of other companies, they delivered to 3% of their customers an evening average speed that matched the advertised speed.

As with 24 hour average speeds, among the non-cable providers, Plusnets' 38Mbps package delivered an evening average speed that matched the advertised speed to the most customers (14%), followed by Sky and BT's 17Mbps packages (9% and 13% respectively).

²³ We were unable to analyse all broadband packages due to insufficient sample sizes within Ofcom's data, see page 6 for details. The 95% confidence intervals are represented by the error bars in all the graphs presented in this briefing. For further information, see page 19.



Figure 7: Proportion of consumers receiving evening average speed this (8pm to 10pm) matched the advertised speed by provider in November 2014.²⁴



Source: Which? analysis of Ofcom data



Discussions with Industry

We shared our findings with the providers analysed in this report. BT and Plusnet told us they do comply with CAP and BCAP guidelines. They suggested that factors outside of their control, such as the efficiency of the user's router, could explain why our results suggest otherwise. However, the measurement units used by Ofcom to collect the data analysed in this report were connected to panellists' routers using an Ethernet cable 'in order that the test results accurately reflect the performance of their connections'.²⁵ Ofcom expected that the actual speeds received may be lower than the speeds they measured.

TalkTalk also told us it complies with advertising guidelines and went on to say: 'Our data, based on over half a million customers, shows that TalkTalk homes can achieve speeds beyond 17mbs.' EE told us their 'broadband advertising does not feature download speeds'. However, we found 'up to' speeds featured on the EE broadband website. A number of providers mentioned that they provide point of sale speed estimates to consumers. We are, however, still concerned that our findings show the vast majority of consumers cannot receive the 'up to' speeds advertised.

²⁴ We were unable to analyse all broadband packages due to insufficient sample sizes within Ofcom's data, see page 6 for details. The 95% confidence intervals are represented by the error bars in all the graphs presented in this briefing. For further information, see page 19.

²⁵ (Ofcom, 2014b, p. 57)



Conclusion and recommendations

Broadband providers market their products by focussing on the price of a broadband package and the download speed it delivers. Our research shows that, in broadband advertising, speed is often one of the key selling points for consumers.

However, the analysis presented in this report demonstrates that most consumers will not receive the advertised maximum speed. For the majority of consumers, there is a gulf between what is advertised and what they receive. In most cases, this disparity is permitted under current advertising guidance. This lack of transparency means consumers are not getting what they pay for. It also damages competition in the market by making it difficult for consumers to find accurate information when making purchasing decisions.

Factors limiting individual customers' broadband speeds can be beyond the providers' control. As outlined in the methodology, we have taken steps to account for this in our analysis. Which? believes, however, providers must do more to ensure that their advertising paints an accurate picture of the speeds consumers can expect to achieve.

Ofcom's recently updated Voluntary Code of Practice makes positive steps towards ensuring that customers know the speeds they can expect by requiring signatories of the code to give customers comprehensive information about the speeds they can expect, and allowing them to exit their contract penalty free at any time should the speed fall below an acceptable level. However, Which? believes more needs to be done to make the advertising of speeds transparent and to ensure that the market serves consumers better.

Given our findings that the vast majority of consumers do not receive the 'up to' speed advertised, Which? wants to see the lessons learnt from the US broadband, general insurance and consumer credit markets (outlined in the introduction) applied to the UK broadband sector. This would ensure the interests of consumers are better served in the broadband market.

Recommendations

Which? is calling for Ofcom to work with the ASA, CAP and BCAP to create an action plan to improve the way broadband speeds are advertised by the end of 2015. Broadband providers should be required to:

- Only advertise speeds available to the majority of their customers.
- Be upfront about how many people can actually get the speed advertised.

Ofcom should also publish, at least annually, data for each broadband provider and package, where possible, showing what proportion of consumers receives the advertised speed, as well as the average speed consumers receive compared with the advertised speed.

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June 2015



Annex 1: Methodology

Which? followed the statistical methodology laid out in Annex III of Ofcom's report.²⁶ To ensure that the national data presented are representative of UK residential broadband users as a whole, Ofcom weighted the national panel by broadband providers market and package shares, by LLU/non/LLU connections, by urban/rural, Geographic Market classification and distance to the exchange.

We understand that the speeds broadband providers can deliver to consumers depend on the quality of the lines, among other things, that connect consumers' homes. Before running our analyses we expected that a significant number of households would get a download speed close to, but not quite, 100% of the advertised speed, and decided to give providers a tolerance threshold of one percent. That is, we calculated the proportion of consumers who could receive 99% of the advertised speed.

To ensure that the analyses of broadband providers analysis provides a fair comparison of actual performance rather than reflecting random differences in the customer profiles in the sample, Ofcom also weighted the ISP package panel by distance from the exchange, and ADSL2+ packages were normalised by distance from the exchange. Cable and FTTC packages were not weighted as speed of services is not directly related to distance from the exchange.

We used this weighted data to determine what proportion of customers were receiving greater than 99% of the speed advertised.

Our analysis includes 95% confidence intervals. These intervals are represented by the error bars on the graphs presented in this briefing, and the numerical range for each statistic can be found in annex 2. This means that there is a 95% probability that the actual proportion of customers receiving 99% of the advertised speed across the whole population (i.e. not just the consumer panellists within our sample) falls within the ranges shown.

As with Ofcom's report, we were able to comment on the following ISP packages:²⁷

- BT's ADSL2+, 'up to' 38Mbps FTTC and 'up to' 76Mbps FTTC services
- EE's 'up to' 38Mbps FTTC service
- Plusnet's ADSL2+, 'up to' 38Mbps FTTC and 'up to' 76 Mbps FTTC services
- Sky's ADSL2+ and 'up to' 38 Mbps FTTC services
- TalkTalk's ADSL2+ service
- Virgin Media's 'up to' 50Mbps, 'up to' 100Mbps and 'up to' 152Mbps cable services.

Many other services and broadband packages are available, some of which may perform better, worse or the same as the broadband packages presented in this briefing.

²⁶ For a detailed account of the technological and research methodologies used to analyse this data, see Annex 2 and 3 of Ofcom's report.

²⁷ (Ofcom, 2015, p. 17)

Ofcom categorises a package's speed in terms of the wholesale speeds purchased by a provider from BT Openreach. Wholesale speeds are higher than the retail speed advertised to consumers. To ensure that our analysis accurately reflects the speed broadband providers advertised, we edited the Ofcom data as follows:

Broadband Provider	Advertised Package Speed	Ofcom	Which? categorisation	Reference
BT	'up to' 17Mbps	20	17	http://www.productsandservices.bt.com/products/broadband-packages/?s_cid=con_FURL_packages&utm_source=ATL&utm_medium=EMAIL&utm_content=A&utm_campaign=packages
	'up to' 38 Mbps	40	38	
	'up to' 76Mbps	80	76	
EE	'up to' 17Mbps	20	17	https://broadband.ee.co.uk/home.do
	'up to' 38 Mbps	40	38	
	'up to' 76Mbps	80	76	
Plusnet	'up to' 17Mbps	20	17	https://www.plus.net/home-broadband/
	'up to' 38 Mbps	40	38	
	'up to' 76Mbps	80	76	
Sky	'up to' 17Mbps	20	17	http://www.sky.com/shop/broadband-talk/ and http://www.sky.com/shop/broadband-talk/fibre-optic/
	'up to' 38 Mbps	40	38	
	'up to' 76Mbps	80	76	
TalkTalk	'up to' 17Mbps	20	17	https://sales.talktalk.co.uk/ and https://sales.talktalk.co.uk/product/fibre
	'up to' 38 Mbps	40	38	
	'up to' 76Mbps	80	76	
Zen Internet	'up to' 17Mbps	20	17	https://www.zen.co.uk/home-office/broadband/home-office-broadband.aspx and https://www.zen.co.uk/home-office
	'up to' 38 Mbps	40	38	
	'up to' 76Mbps	80	76	
Virgin	'up to' 17Mbps	20	17	http://store.virginmedia.com/broadband.html
	'up to' 38 Mbps	40	38	
Demon	'up to' 17Mbps	20	19	http://demon.net/demon-business-broadband/



AOL	'up to' 17Mbps	20	17	https://sales.talktalk.co.uk/ and https://sales.talktalk.co.uk/product/fibre
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Annex 2: Confidence interval tables

These statistics are based on a representative sample of the UK population, and this means there are margins of error associated with all the statistics presented here. We have presented the precision of the survey estimates as per statistical convention via upper and lower bound confidence intervals (at the 95% probability level) wherever possible. Confidence intervals for any proportions of 0% have not been calculated, but this does not mean definitively that there will be 0% in the overall population, just that there was zero incidence of that measure detected in this survey.

Table 1: Proportion of UK customers getting the advertised 'up to' speed

		Proportion of consumers whose maximum speed was at least 99% of the advertised speed	Proportion of consumers whose average speed (24hrs) was at least 99% of the advertised speed	Proportion of consumers whose evening speed (8pm-10pm) was at least 99% of the advertised speed	n
<i>Proportions of consumers receiving advertised 'up to' download speeds (UK)</i>	Lower 95% CI	23%	15%	12.5%	1179
	Proportion	26%	17%	15%	
	Upper 95% CI	28%	19%	17%	
<i>Proportions of consumers receiving advertised 'up to' download speeds (UK excluding cable)</i>	Lower 95% CI	6%	3%	3%	931
	Proportion	8%	5%	4%	
	Upper 95% CI	9%	6%	5%	

Table 2: Proportion of rural and urban customers getting the advertised 'up to' speed

		Proportion of consumers whose maximum speed was at least 99% of the advertised speed	Proportion of consumers whose average speed (24hrs) was at least 99% of the advertised speed	Proportion of consumers whose evening speed (8pm-10pm) was at least 99% of the advertised speed	n
Urban	Lower 95% CI	28%	18%	15%	946
	Proportion	31%	20%	18%	
	Upper 95% CI	34%	23%	20%	
Rural	Lower 95% CI	1%	0%	0%	204
	Proportion	4%	2%	2%	
	Upper 95% CI	6%	5%	5%	



Table 3: Proportion of consumers receiving advertised 'up to' speed by technology

		Proportion of consumers whose maximum speed was at least 99% of the advertised speed	Proportion of consumers whose average speed (24hrs) was at least 99% of the advertised speed	Proportion of consumers whose evening speed (8pm-10pm) was at least 99% of the advertised speed	n
ADSL	Lower 95% CI	5%	3%	3%	518
	Proportion	7%	5%	5%	
	Upper 95% CI	9%	7%	7%	
Cable	Lower 95% CI	95%	61%	50%	464
	Proportion	97%	67%	56%	
	Upper 95% CI	99%	72%	63%	
FTTC	Lower 95% CI	7%	1%	1%	518
	Proportion	10%	3%	3%	
	Upper 95% CI	12%	5%	5%	

Table 4: Proportion of non-cable consumers receiving advertised 'up to' speed by package speed

		Proportion of consumers whose maximum speed was at least 99% of the advertised speed	Proportion of consumers whose average speed (24hrs) was at least 99% of the advertised speed	Proportion of consumers whose evening speed (8pm-10pm) was at least 99% of the advertised speed	n
8Mbps	Lower 95% CI		0%		157
	Proportion		0%		
	Upper 95% CI		0%		
17Mbps	Lower 95% CI	6%	3%	3%	349
	Proportion	9%	6%	6%	
	Upper 95% CI	12%	8%	8%	
38Mbps	Lower 95% CI	9%	1%	1%	213
	Proportion	14%	4%	4%	
	Upper 95% CI	18%	7%	7%	
76Mbps	Lower 95% CI	0.0%			168
	Proportion	1%	0.0%	0.0%	
	Upper 95% CI	2%			



Table 5: Proportion of consumers whose maximum speed was at least 99% of the advertised speed

ISP	Advertised speed (Mbps)	Lower 95% CI	Proportion of consumers whose maximum speed was at least 99% of the advertised speed	Upper 95% CI	n
BT	17	7%	17%	27%	52
	38	6%	13%	20%	90
	76	0.0%	1%	1%	206
	Total	4%	6%	9%	348
Orange	38	16%	24%	33%	103
	Total	12%	18%	24%	161
Plusnet	17	5%	16%	27%	45
	38	13%	26%	39%	42
	76	0.0%	1%	1%	209
	Total	4%	7%	9%	296
Sky	17	6%	13%	20%	97
	38	7%	16%	24%	70
	Total	9%	14%	19%	173
TalkTalk	17	0%	4%	8%	79
	Total	1%	4%	8%	131
Virgin	50		100%		49
	100	90%	96%	100%	47
	152	98%	99%	100%	138
	Total	97%	98%	100%	318

Table 6: Proportion of consumers whose average speed was at least 99% of the advertised speed

ISP	Advertised speed (Mbps)	Lower 95% CI	Proportion of consumers whose average speed was at least 99% of the advertised speed	Upper 95% CI	n
BT	17	2%	11%	19%	52
	38	1%	6%	10%	90
	76		0.0%		206
	Total	1%	3.0%	5%	348
Orange	38		0.0%		103
	Total		0.0%		161

Plusnet	17	0%	8%	15%	45
	38	4%	14%	25%	42
	76		0.0%		209
	Total	1%	3%	5%	296
Sky	17	5%	11%	17%	97
	38	0%	1%	4%	70
	Total	3%	7%	10%	173
TalkTalk	17	0%	1%	4%	79
	Total	0%	0.9%	3%	131
Virgin	50	87%	94%	100%	49
	100	46%	60%	74%	47
	152	13%	20%	26%	138
	Total	40%	46%	51%	318

Table 7: Proportion of consumers whose evening speed was at least 99% of the advertised speed

ISP	Advertised speed	Lower 95% CI	Proportion of consumers whose evening (8pm to 10pm) speed was at least 99% of the advertised speed	Upper 95% CI	n
BT	17	4%	13%	22%	52
	38	1%	6%	10%	90
	76		0%		206
	Total	2%	3%	5%	348
Orange	38		0%		103
	Total		0%		161
Plusnet	17	0%	7%	14%	45
	38	4%	14%	25%	42
	76		0%		209
	Total	1%	3%	5%	296
Sky	17	4%	9%	15%	97
	38	0%	1%	4%	70
	Total	2%	6%	9%	173
TalkTalk	17	0%	1%	4%	79
	Total	0%	1%	3%	131
Virgin	50	73%	84%	94%	49
	100	29%	43%	57%	47
	152	4%	9%	13%	138



Total	30%	36%	41%	318
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Table 8: Average maximum speed as a percentage of the headline speed by provider

ISP	Advertised speed	Lower 95% CI	Average maximum speed as a percentage of the headline speed	Upper 95% CI	n
BT	17	57%	65%	74%	52
	38	87%	90%	93%	90
	76	82%	84%	86%	206
	Total	80%	83%	85%	348
Orange	38	90%	93%	96%	103
	Total	84%	87%	90%	161
Plusnet	17	58%	67%	75%	45
	38	85%	90%	96%	42
	76	81%	82%	84%	209
	Total	79%	81%	83%	296
Sky	17	55%	61%	67%	97
	38	93%	95%	98%	70
	Total	72%	76%	80%	173
TalkTalk	17	48%	54%	60%	79
	Total	63%	68%	73%	131
Virgin	50	108%	108%	109%	49
	100	104%	106%	107%	47
	152	105%	105%	105%	138
	Total	105%	105%	106%	318

Annex 3: Cumulative frequency graphs

Figure 8: Maximum download speeds as a percentage of advertised speed, cumulative frequency plots by technology

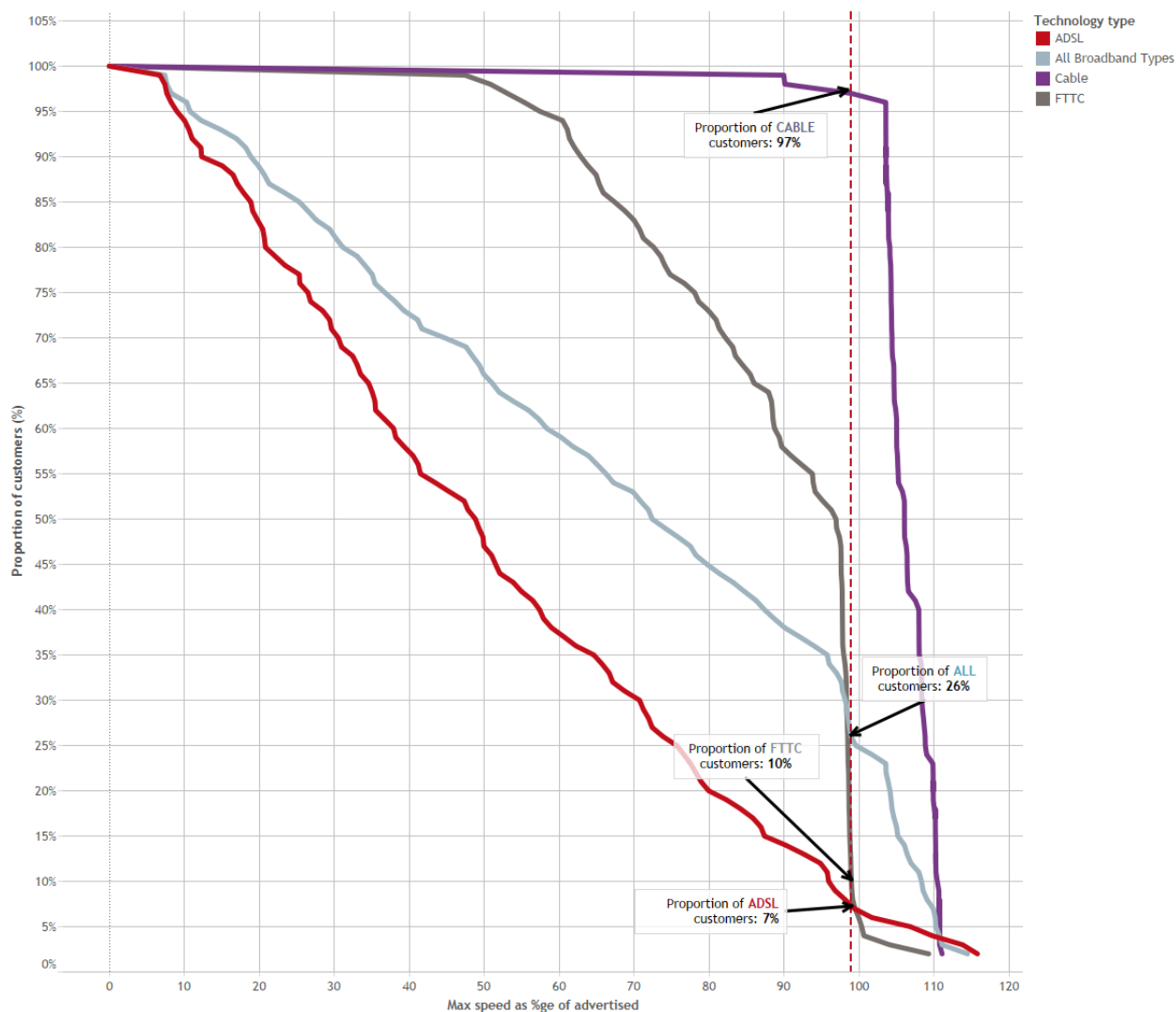


Figure 8 can be used to determine how many customers received the advertised download speed in November in 2014. The horizontal axis shows the maximum speed a customer received as a percentage of their package's advertised speed. For example, if the customer received the package's advertised 'up to' speed of 76Mb then this would be represented in this graph as 100%, but if the customer received 38Mb, then this would be represented as 50%. The vertical axis shows the proportion of customers who received this speed. The dotted red line represents 99% of the advertised speed.

From this figure, we can see, for example, that 50% of ADSL customers receive less than 50% of the advertised speed, whereas over 90% of cable customers received 99% of the advertised speed.

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