



Towards a 5G consumer future

Six calls to action from consumers for operators to rethink mobile broadband

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Methodology

In July 2017, 1,000 smartphone users in 14 countries participated in an online survey. A total of 14,000 iPhone and Android smartphone users aged between 15 and 65 took part in the survey. The views expressed in the survey are representative of 800 million smartphone users across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US.

In addition to the survey, Ericsson ConsumerLab, together with Tefficient, analyzed and benchmarked mobile broadband strategies of operators globally. Data from App Annie has also been used for this report. App Annie's Android data on smartphone data consumption is derived from a large global panel of real-world users, combined with additional proprietary data sets.

The voice of the consumer

Ericsson ConsumerLab has more than 20 years' experience of studying people's behaviors and values, including the way they act and think about ICT products and services. Ericsson ConsumerLab provides unique insights on market and consumer trends.

Ericsson ConsumerLab gains its knowledge through a global consumer research program based on interviews with 100,000 individuals each year, in more than 40 countries – statistically representing the views of 1.1 billion people.

Both quantitative and qualitative methods are used, and hundreds of hours are spent with consumers from different cultures. To be close to the market and consumers, Ericsson ConsumerLab has analysts in all regions where Ericsson is present, developing a thorough global understanding of the ICT market and business models.

All reports can be found at: www.ericsson.com/consumerlab



Expectations for a 5G consumer future

The promise of 5G has the potential to completely change the way we interact with wireless devices, from smartphones to cars. Though the unknowns are many and there are still technical issues to be resolved, a 5G future ultimately depends on consumer and business expectations.

Thus, it is imperative to understand whether the vision set out by current wireless technologies and telecom operators' offerings – specifically mobile broadband plans – meets consumer expectations today.

This report uncovers six calls to action from consumers which operators must act on, to drive consumer satisfaction and monetize mobile broadband for a 5G future.

Consumers' six calls to action

1. Provide us with an effortless buying experience

With 6 in 10 smartphone users grappling with the complexity of mobile data plans, there is considerable misalignment between what users buy and what they use. Given that only 3 in 10 smartphone users are satisfied with the way their operator presents mobile broadband plans online, the digital telecom experience is neither simple nor effortless.

2. Offer us a sense of unlimited

Eighty percent of smartphone users are not necessarily looking for limitless plans but rather a sense of unlimited. While unlimited plans are easier to buy and offer peace of mind by avoiding bill shocks, high mobile data usage is not the main motivation; 70 percent of those buying such plans are not the heaviest mobile data users.

3. Treat gigabytes as currency

The average smartphone user globally is left with unused, paid-for mobile data of 31GB a year, or as much as 1.5TB over their lifetime. Two in five users consider gigabytes as actual currency and expect to be able to save, trade or even gift this unused data to others. However, most users today cannot use mobile data as currency.

4. Offer us more than just data buckets

Consumers buy data buckets because that is how telecom operators sell them today. Higher mobile broadband speeds and fair wireless contracts are considered more important. However, bundled video content within mobile plans and innovative data plan features increasingly play a role in consumers' choice of plan and eventually mobile service provider. Consumers want operators to innovate, evolve and personalize a data plan based on their unique needs.

5. Give us more with 5G

Contrary to the belief that consumers are uninterested in 5G, globally the idea of 5G services appeals to 76 percent of smartphone users in our survey; 44 percent are in fact willing to pay for 5G. Over one-third expect capabilities beyond speed, coverage and low prices, and half envision using 5G-enriched services within two years of launch. Consumers predict an end to paying by gigabytes consumed and instead paying a single fee for 5G services or each 5G-connected device.

6. Keep networks real for us

Consumers want their operator to have the best wireless network. This is driven more by their perception of the best network. However, this perception is not influenced by marketing claims but rather their direct experience with the network; only 4 percent trust operators' own advertising and network performance reporting. Consumers expect operators to steer clear of baseless marketing slogans and instead focus on real network experience.

Provide us with an effortless buying experience

The telecom market is extremely difficult for consumers to navigate; 57 percent of smartphone users find it complicated to understand what is included in mobile data plans. A similar proportion says that wading through all the options for the best plan is confusing.

Operators' frequent price changes, campaigns and introductory promotions compound this. With just 3 in 10 users across 14 countries satisfied that their operator presents mobile broadband plans simply and transparently, operators must work hard to help consumers navigate this mobile maze.

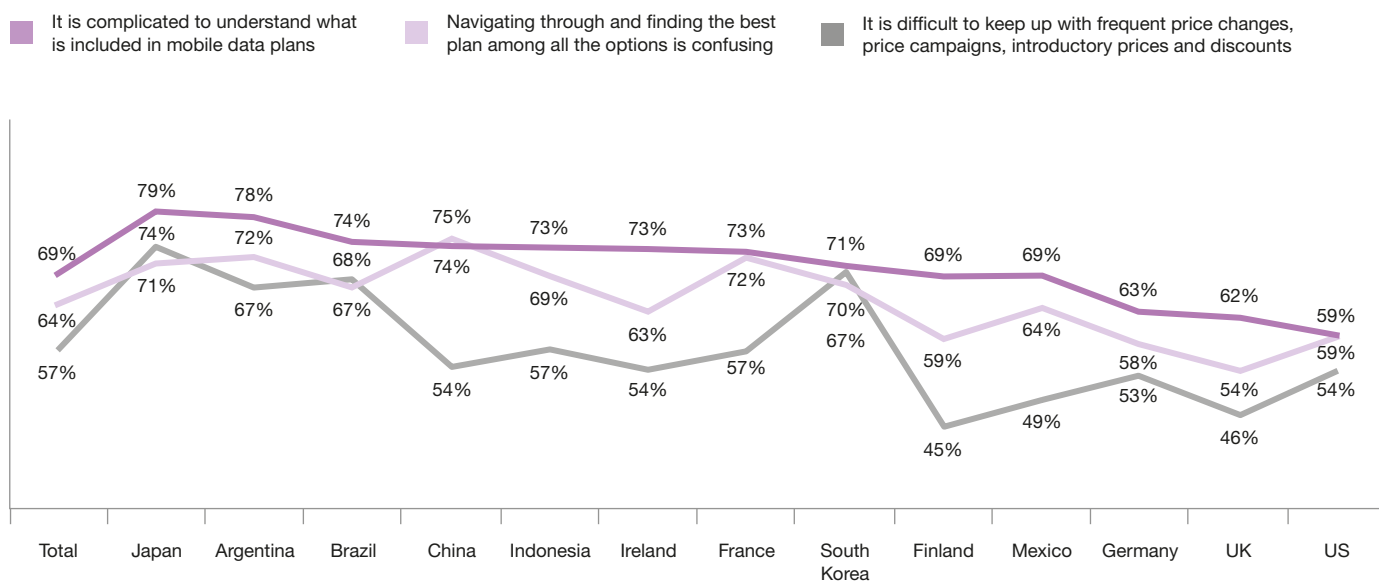
Given this complexity, half of all smartphone users are unaware of their plan's data allowance and 7 in 10 users are unsure how much mobile data they consume monthly. This results in a gross misalignment between what consumers buy and what they use. Only one-third

use their entire mobile data allowance; the rest either exceed or have unused data by the end of the month. A lack of recommendations, insight or support during the buying process causes a quarter of heavy data users (who represent 14 percent of all smartphone users globally) to buy smaller monthly data allowances than they require, while up to 60 percent of light data users buy more than they require. This often leads to the consumer experiencing data plan distress on approaching their allowance limits; on average, half of all smartphone users globally experience this.

Half of all smartphone users

Globally, half of all smartphone users experience data plan distress and limit their mobile broadband usage due to the fear of being hit by overage fees.

Figure 1: The complexity in telecom (percent of smartphone users who agree with the following statements)



Base: Smartphone users aged 15–65 across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

One possible hidden drain on mobile data allowances is mobile advertising. Anywhere from 18 to 79 percent of the monthly data bucket can go towards delivering advertising.¹ Our survey suggests that 70 percent of smartphone users globally are unaware of mobile ads eating up data allowances but, when made aware, 6 in 10 expect operators to give them more control over whether to see these ads and be transparent about data consumed by mobile advertising.

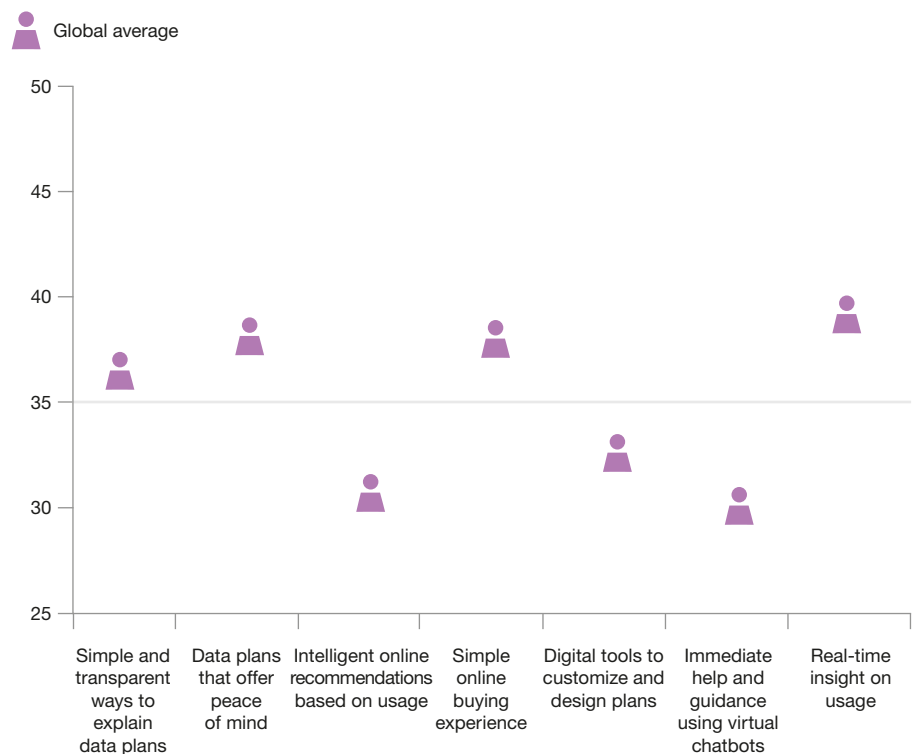
The lack of communication around data being consumed by advertising, as well as data plan distress, are costing telecom operators consumer loyalty. Globally, among those smartphone users who switched operators in the past six months, half switched to a new data plan. However, 2 in 10 among them switched because of plan misalignment; they either exceeded their allowance and were charged an overage fee or had unused data left over.

With the research and buying process for most consumers now starting online, consumers want effortless digital simplicity from providers. However, only one-third (37 percent) of smartphone users globally say they are satisfied with operators' ability to present plans in a simplified and transparent way, and a similar proportion (30 percent) are satisfied with their ability to assist them in the online buying process with recommendations via chatbots. The operator challenge is to simplify the purchase process, bring about greater transparency regarding usage and meet consumers' evolving needs, demands and expectations. Today this experience is neither effortless nor simple.

70%

70 percent of smartphone users globally are unaware of mobile ads eating up data allowances, while 6 in 10 expect operators to act on this.

Figure 2: Telecom operators fall short on digital customer experience (percent of smartphone users globally who say they are satisfied with their operator)

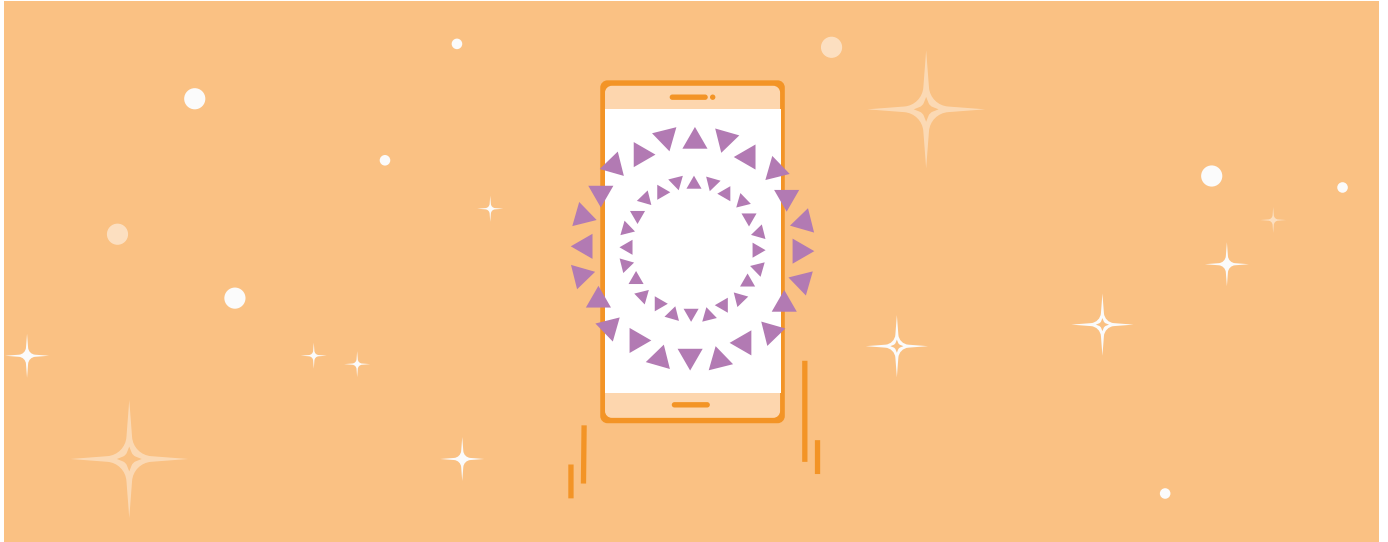


Base: All smartphone users aged 15–65 across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
 Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018



¹ Enders Analysis, March 2016 www.businessinsider.in/Ads-on-news-sites-gobble-up-as-much-as-79-of-users-mobile-data/articleshow/51435661.cms

Offer us a sense of unlimited



In theory, unlimited data plans ease consumers' decision making since it takes away the need to decide what data bucket volume to buy. However, this advantage is marginal; only 44 percent of unlimited mobile data plan users globally are very satisfied that plans are communicated simply and transparently, versus 34 percent on mobile data plans with fixed allowances.

One possible reason for this is that unlimited plans also have certain limitations. Some are restricted by internet speeds, as has been seen in Finland; others, by a lowered quality of video streaming, imposing restrictions on tethering or reducing speeds and deprioritization of traffic after reaching the fair usage policy limits (depending on plan details), as seen in the US.

Consumers' primary motivation to buy unlimited plans is for peace of mind and to reduce the fear of receiving penalties when exceeding their data allowance limits. However, 70 percent of users buying such plans do not necessarily use the most mobile data. Average cellular consumption across unlimited data plan users in all countries surveyed (except for Finland) was 7.5GB of monthly mobile data.² This varies, with South Koreans using 18GB per month, while those in Germany use just 2.5GB.

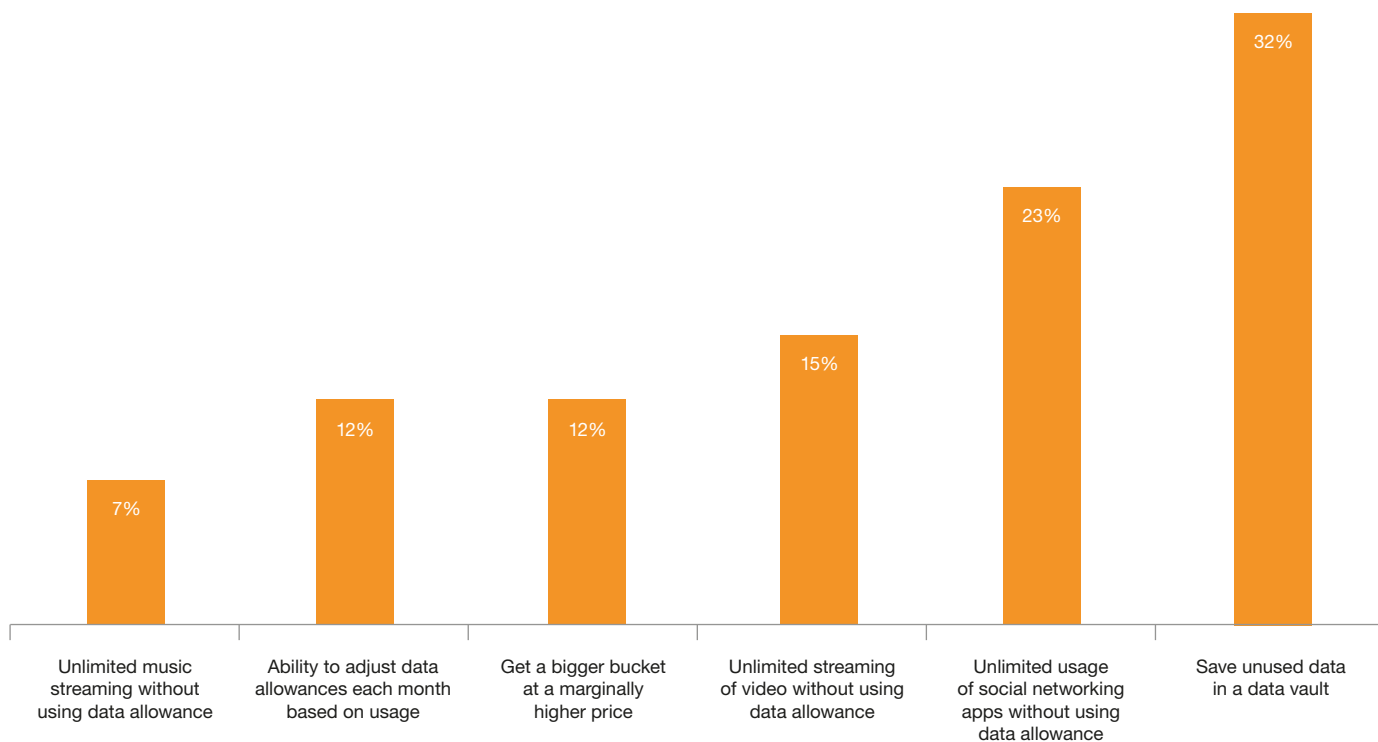
Despite having the capability to use as much cellular data with such plans, most users on unlimited plans globally still used 2.5 times more Wi-Fi compared to cellular data.

Hence, smartphone users are not necessarily looking for limitless data plans but rather a sense of unlimited, so that they feel they have enough data to cater to their needs. For most users today on capped data plans, saving unused data to be used later is as good as access to unlimited data. One-third (32 percent) want to save unused mobile data in a data vault that could be used at any time, while 45 percent would prefer data consumed by social, video or music apps not to be counted towards the monthly data limit. Twelve percent just want the flexibility to change data allowances on their contracts each month based on their usage, or double their existing data allowance. Overall, a large majority (80 percent) of smartphone users are willing to accept the features of a sense of unlimited data plan.

²Ericsson ConsumerLab, analysis of data consumption across unlimited data plan users in the App Annie panel, July 2017

Note: App Annie panel data not available for Finland

Figure 3: Preferred data plan features that offer a sense of unlimited to smartphone users



Base: All smartphone users aged 15–65 with capped data plans across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
 Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

Those already on unlimited data plans are not averse to changing to a sense of unlimited either; about 7 in 10 such users, including 65 percent of users in the US, would consider giving up their unlimited plans. Moving towards 5G, offering a sense of unlimited to consumers encourages mobile data usage and helps operators to monetize mobile broadband efficiently. The bucket plan is not yet extinct; it just needs to evolve.

Recent findings released by other firms show that people on unlimited plans have a much more positive perception of their operator’s network quality.³ In contrast, our survey in 14 countries gauged perceptions among both unlimited and capped data plan users and found that users on large enough capped plans were equally happy with network performance. It would seem that having enough, not necessarily unlimited, mobile data to cater to users’ needs so they do not feel concerned is the key to satisfaction.

65%

65 percent of US unlimited data plan users are willing to consider giving up their unlimited plans if offered a plan which provides a sense of unlimited.

³ www.jdpower.com/press-releases/us-wireless-network-quality-performance-study-volume-2

Treat gigabytes as currency



As consumers become increasingly aware of the amount of unused data they are left with each month, demand to treat these gigabytes as currency is growing.

Although approximately 1 in 2 smartphone users with capped data plans are always concerned about exceeding their data allowance limit, on average only 15 percent exceed them, while 41 percent consume significantly less than they have purchased. This translates to 2.7 times more smartphone users with unused mobile data by the end of the month than those who exceed their data limits.

As awareness around this grows there is an emerging perception among consumers to treat gigabytes as a currency. On average, two in five believe it can be used in different ways like real money, for example, to save, trade or give as a gift.

Figure 4 suggests that, on average, smartphone users with capped data plans are left with 40 percent of their data allowance unused by the end of the month. This figure of course varies; in France, where unlimited data plans from some operators are pushing others to offer super-sized plans, it is leading to unused data allowances of over 62 percent. Meanwhile, in countries like Mexico, Brazil and Indonesia, smartphone users consume most of their allocated data limit, with less than 25 percent left by the end of the month.

In other words, most users pay for mobile data they never use. This equates to unused, paid-for data of about 2.6GB a month, 31GB a year, or 1.5TB

over an average lifetime if conditions do not change. To put this into context, with 31GB of data, a smartphone user could make 65 hours of video calls, spend 517 hours streaming music or binge watch 6 seasons of a TV show like Game of Thrones. Within the 14 countries studied, 31GB of mobile data costs consumers anywhere between USD 44 and 463, if purchased as 1GB add-ons.

2.7 times

Globally there are 2.7 times more smartphone users with unused data by the end of the month than those who exceed their allowances.

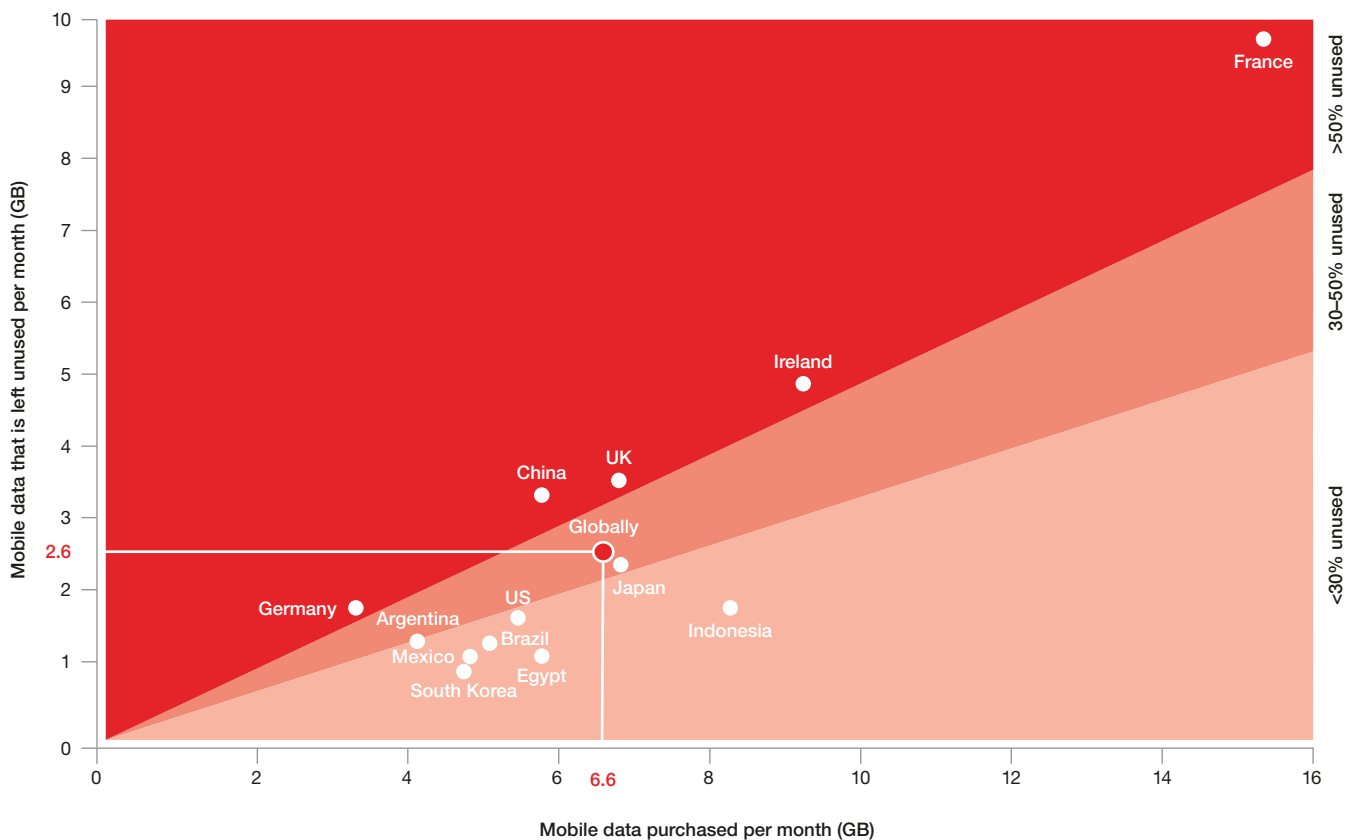
Consumers want to treat unused gigabytes as they would their extra money. Seventy-six percent of smartphone users with unused data would like to save it for future use by rolling over unused data to the next month; 44 percent are even willing to pay extra to add such a feature to their data plan. Thirty-nine percent would like a refund or discount on their next bill for data not consumed; 40 percent of those who would like this would pay a one-off fee for such a facility month to month. Interestingly, consumers are less likely to share their unused mobile data with family members or friends.

Nevertheless, despite consumers' huge interest and readiness to pay extra, operators have not addressed this desire properly; only 19 percent of smartphone users globally in our survey have rollover of unused mobile data in their plans. The reward for offering the ability to roll over data or to build a data pool is loyalty. A savings account full of data will be hard to leave behind – which a consumer must do if they switch providers. It is also considered fair to be able to keep data allowances once paid for.

Super-sized data plans

Super-sized data plans equate to 31GB of unused data over a year per smartphone user, enough to stream 6 seasons of Game of Thrones. If this continues, a user could have 1.5TB of mobile data paid for but unused over a lifetime.

Figure 4: Mobile data purchased vs. unused per month by a smartphone user



Base: Smartphone users on plans with data caps in App Annie panel reporting mobile data usage in July 2017
 Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

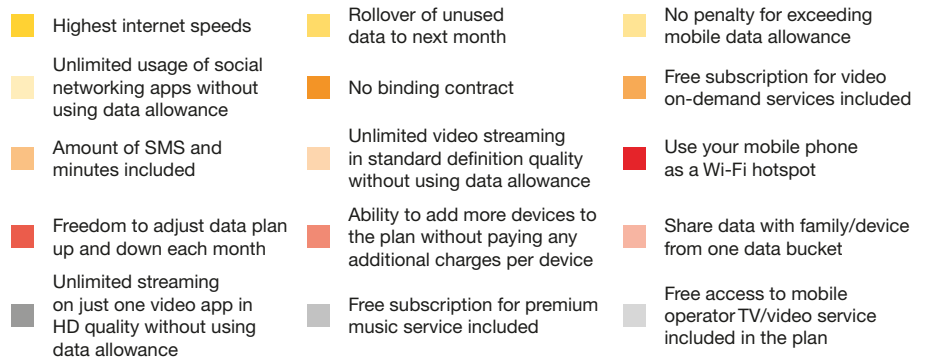
Offer us more than just data buckets

Despite the recent trend of waiving data usage for certain apps or services (zero-rating) and unlimited plan wars across countries, consumer preferences are for individualization, and choosing the products and services they want most at the time and location they need most.

The survey assessed the relative importance of 15 features by consumers that might drive their choice of a particular mobile data plan. These features could be used by telecom operators or are being used to evolve current data plans, as shown in Figure 5.

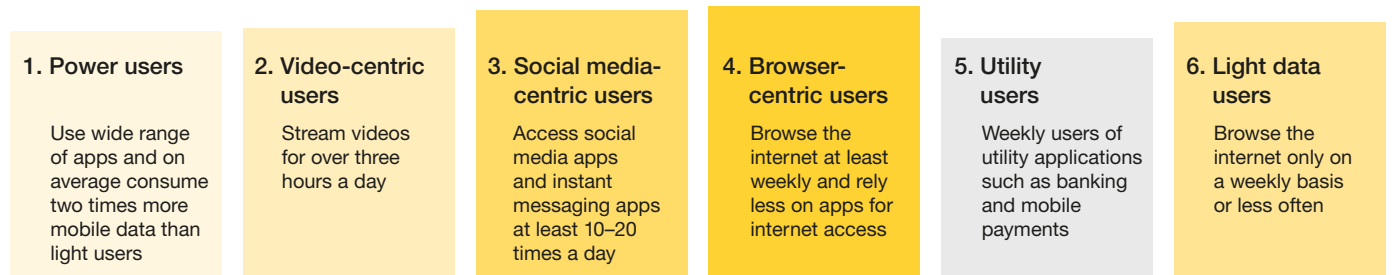
Mobile internet speeds are considered most important in data plan selection, having one-third of relative importance. Despite this, most operators continue to sell plans by volume and do not differentiate on speed tiers. The ability to treat gigabytes as currency using rollover of unused data allowances is the next most important feature, followed by contract fairness in the form of no overage penalties or binding wireless contracts. About one-third of additional relative impact is then contributed by a long tail of features considered important by consumers, which varies by consumer segment as well as country.

Figure 5: Relative importance of features when selecting a new mobile data plan



Base: All smartphone users aged 15–65 across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

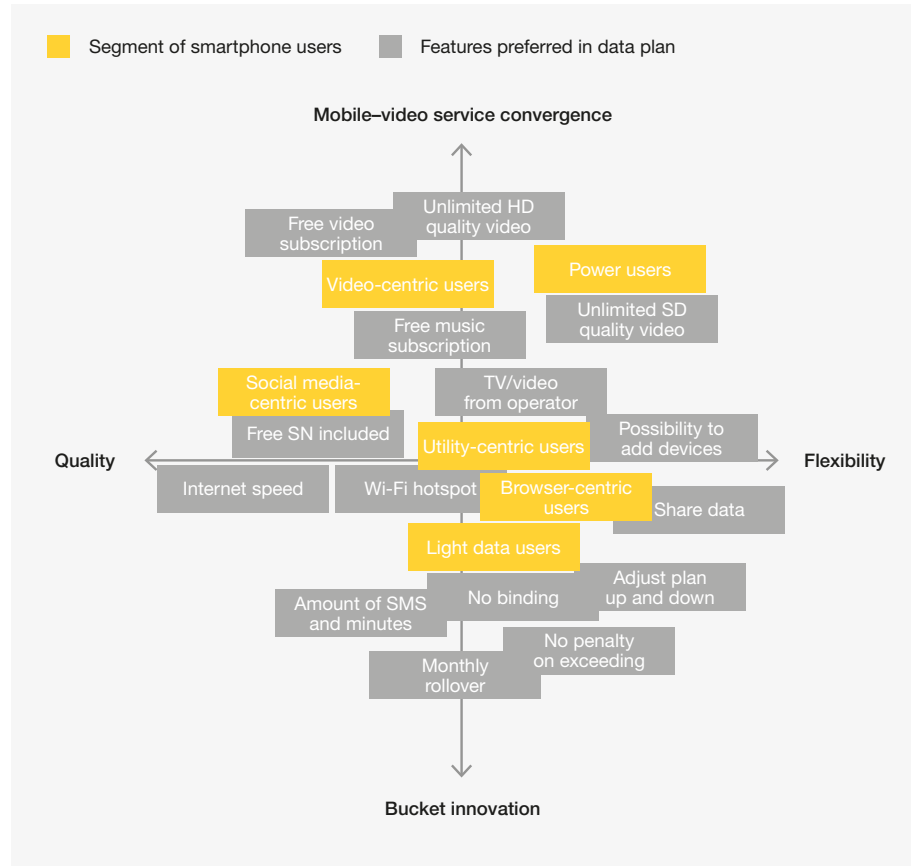
Smartphone users can be segmented into six different groups based on the types of apps and services they use on their phones and how often they use them:



As shown in Figure 6, power users are 2.5 times more likely than other smartphone users to value unlimited video streaming capability. Video-centric users are two times more likely to look for bundled inclusive video content, such as subscriptions to popular video on-demand services like Netflix and HBO, in addition to unlimited video streaming capability. Browser-centric users, on the other hand, prefer plans that help avoid overage fees when exceeding data allowances and plans that have the flexibility to change data allowances month on month, while light data users prefer plans with bundled voice minutes and no binding contracts.

Considering the diversity of users' needs, operators need to innovate beyond just offering data buckets and instead consider how mobile broadband plans work for specific users and in the context of the devices and services they connect to the network. As consumers' appetite for mobile video grows, operators could differentiate plans by combining the benefits of a data plan that provides a sense of unlimited with bundled inclusive video content, known as mobile-video service convergence. This would particularly appeal to power and video-centric users.

Figure 6: Smartphone user segments and features preferred in a mobile data plan



Base: All smartphone users aged 15–65 across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

2X

Video-centric users are two times more likely to value inclusive video content as well as the ability to stream video without using data allowances when selecting data plans.



Give us more with 5G

Contrary to the belief that consumers are uninterested in 5G services, our survey has found that the idea of 5G appeals to 76 percent of smartphone users globally.

Expectations from 5G

Despite opportunities in specialized industry segments and businesses, 52 percent of surveyed executives from operators mentioned that 5G planning will be focused on consumers in a recent 5G readiness report,⁴ which the Ericsson ConsumerLab survey corroborates and which cannot be ignored.

Even though there are many unknowns and variables to resolve before 5G's use, globally 4 in 10 smartphone users say they have some knowledge about its possibilities. One in 10 are even

comfortable explaining 5G's possibilities to others. 5G awareness is highest in countries like China, with 75 percent aware of its possibilities, while in the US this is 44 percent.

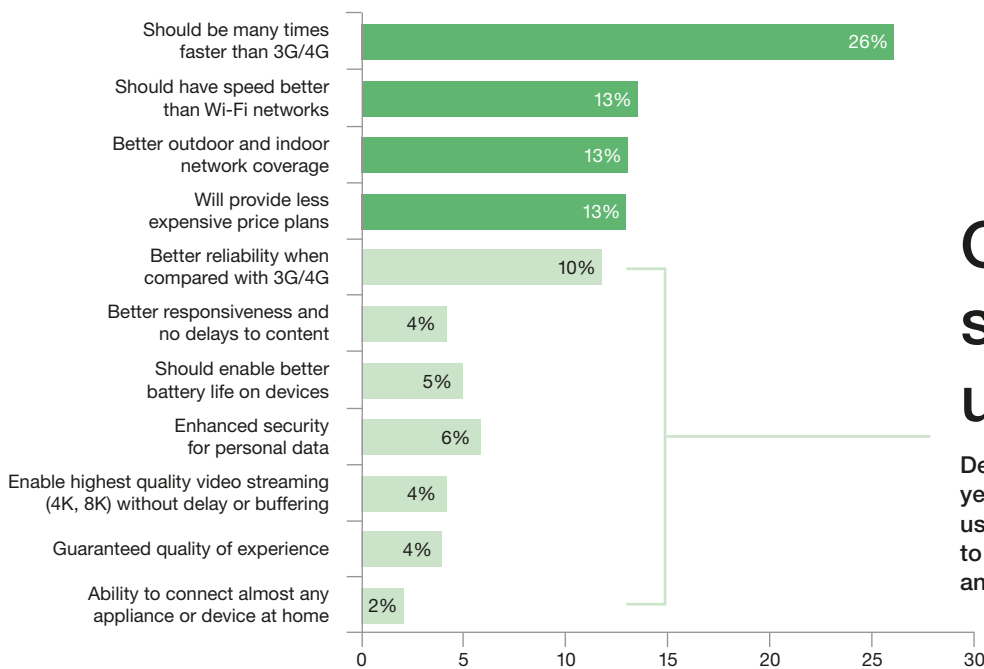
5G and its promises are already creating huge expectations. Most consumers expect speed and coverage improvements from 5G. This is because globally only half of all smartphone users say that their current network performance expectations have been met, suggesting that consumers expect any technology including 5G to fulfill these first.

Despite 5G being a few years away still, over one-third of global smartphone users (35 percent) already expect capabilities beyond speed, coverage and low prices for mobile broadband. These improvements, such as better battery life, highest reliability, guaranteed quality of experience, and the ability to connect not only devices but also the Internet of Things, align with the promise of 5G while creating challenges for operators to deliver on.

A vision of the 5G future

Consumers are not always accurate predictors of their own future behavior. Rather than just focusing on the question "What are you going to do with 5G?", the survey also looked at consumer expectations over what is going to happen with 5G going forward.

Figure 7: Top expectations among smartphone users from 5G



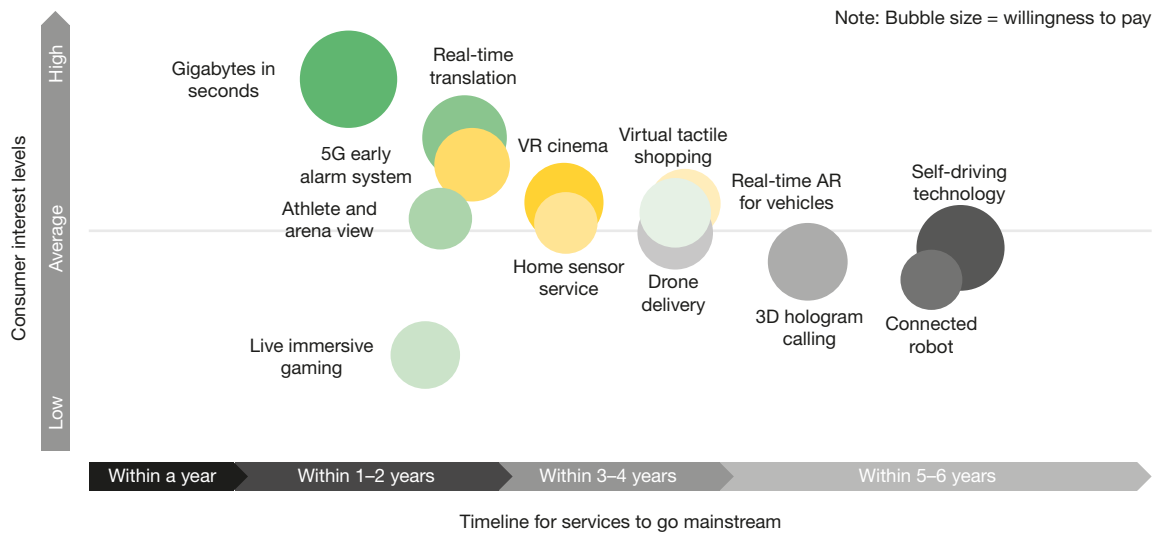
Base: All smartphone users aged 15–65 across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

⁴ Ericsson, 5G Readiness Survey, July 2017

One-third of smartphone users

Despite the technology being a few years away, one-third of smartphone users (35 percent) globally expect 5G to deliver beyond speed, coverage and low data prices.

Figure 8: Consumers predict most services may go mainstream within three to four years of 5G launch



Base: Smartphone users aged 15–65 with interest in 5G services across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
 Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

As shown in Figure 8, most consumers predicted that the majority of 5G-enriched services will go mainstream within three to four years of 5G’s launch. Globally, 76 percent of smartphone users showed interest in 5G-enabled services and 44 percent among them are willing to pay for them.

Consumers expect the first phase of 5G to address mobile broadband needs as the demand for data on smartphones increases. They also predict that the ability to download gigabytes in seconds, enabled by 5G, will go mainstream within one to two years of 5G’s launch; it is expected that this would happen in the US and UK within a year of launch. Earphones giving real-time language translation, watching live events from multiple points of view in an arena utilizing live camera streams, or even watching in virtual reality also generated above-average consumer interest and were expected to go mainstream within two years of 5G’s launch. In contrast, consumers envision services such as 3D hologram calling, self-driving cars and connected robots to be a more distant 5G future.

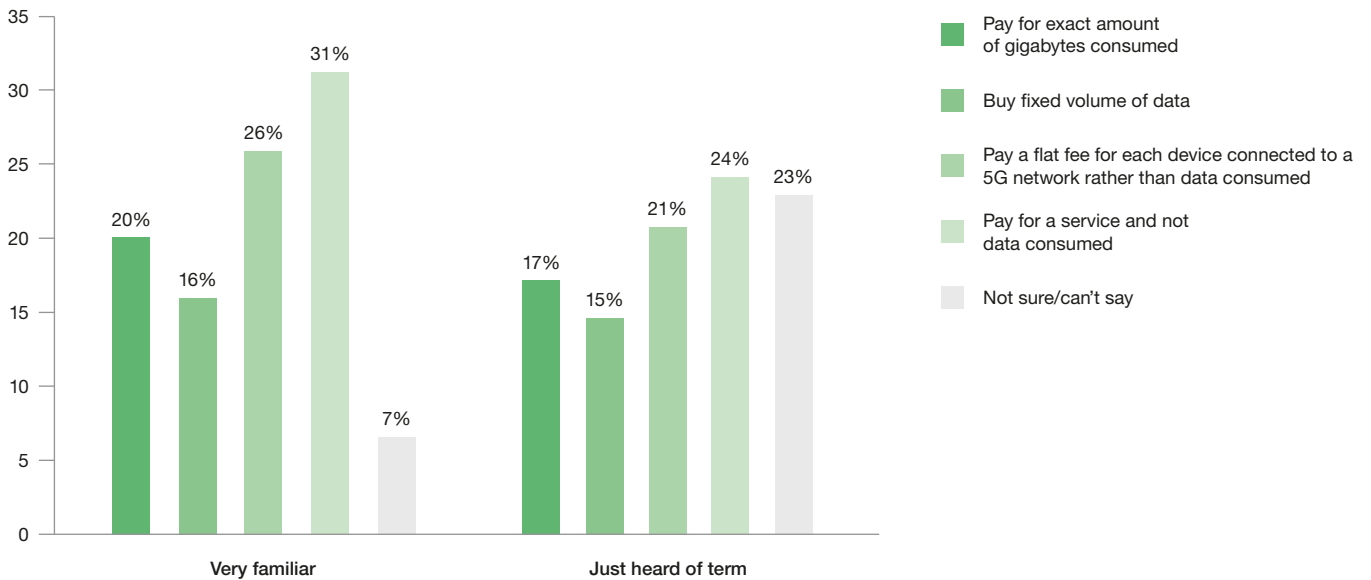
An end to paying with gigabytes

Half of all smartphone users state that 5G will change the way they think about monthly mobile broadband bills today. Consumers envision an end to paying per gigabyte consumed in a 5G future; 57 percent wish to instead pay a single fee for each 5G service or device attached to a 5G network. As seen in Figure 9, those aware of 5G’s potential have the strongest opinion on this.

A whole new class of devices will be needed to leverage 5G capabilities according to 6 in 10 smartphone users, while an equal proportion believe that 5G would need an iconic device like the iPhone to drive consumer adoption. Consumers also expect 5G to enable new apps, new services, and things that are impossible today.



Figure 9: Awareness and preferred payment option for 5G connectivity (percent of smartphone users)



Base: Smartphone users aged 15–65 who are aware or have only heard of the term “5G” across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
 Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

Timeline to adoption

Smartphone users who are aware of 5G envision using 5G-enriched services within two years of launch; however, this varies from country to country. China and the US lead the way in consumer awareness and the intention to adopt 5G. Despite 5G’s unknowns, countries such as Argentina and Mexico see 5G as a way to cover up shortcomings from existing wireless technologies around speed and coverage and aspire to take up 5G as soon as it is launched.

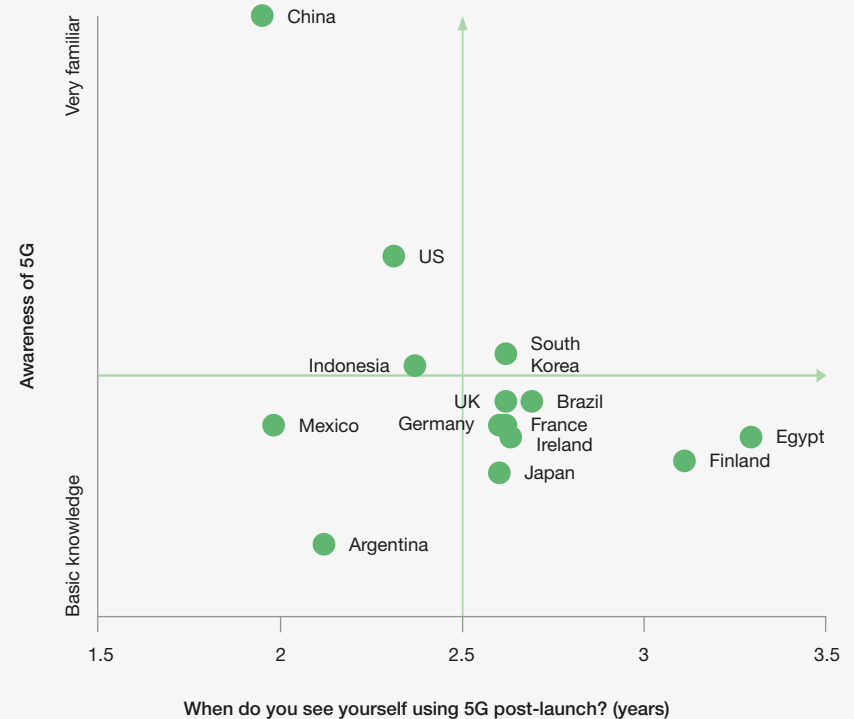
On average, 68 percent of smartphone users in Latin America see themselves taking up 5G within 2 years of launch. This is much higher than the global average of 53 percent. In Europe, on the other hand, users would rather wait for the technology to mature. Only 39 percent expect to take up 5G within 2 years of launch; Finnish consumers are particularly pragmatic and expect to take it up after 3 years of it being available.

The challenge for operators preparing for 5G is to keep up with the high expectations of early adopters. A shift towards service-based pricing or perhaps creating a sense of unlimited could be a savvy move by carriers, as the transition to 5G ultimately will not involve consumers paying per gigabyte but rather an unlimited future.

Figure 10: Consumer awareness vs. intention to take up 5G

On average in most countries consumers who are aware of 5G see themselves using it in around 2.5 years post-launch.

Based on consumer awareness and interest, China and the US might lead 5G adoption.



Base: All smartphone users aged 15–65 who are aware of 5G possibilities
 Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

Keep networks real for us

Real everyday experience with mobile operator networks builds consumer perceptions and expectations.

Consumers expect their operator to have the best network in the country. However, rather than solely using operators' marketing messages or claims to determine what network they consider "best", they base this choice on their own perceptions; for 46 percent this is ascertained through their direct experience with a network. Indeed, only 4 percent trust operators' advertising and network quality test results.

One way to explain this is the lack of differentiation reported by consumers when operators market network performance. A 2016 Ericsson ConsumerLab study suggested that consumers expect operators to communicate network performance in terms of aspects like the experience of streaming YouTube on the network, or the time taken to upload content on social apps which are mental indices used by consumers to judge the network quality.⁵

The value of best network perception

Consumers who perceive their operator to provide the best network in the country are loyal and far more likely to recommend it. Their Net Promoter Score is 48 points higher and they are 1.7 times less likely to switch to another operator compared to others.

On average, about 7 in 10 of those who believe their operator provides the best network also believe they provide the best value for money. However, many consumers will pay more if they perceive their operator's network performance as the best in the country. Users who believe this spend, on average, 17 percent more per month on services. This is reflected in operators' financial reports. Ericsson and Tefficient analysis looked at the earnings before interest, taxes, depreciation and amortization (EBITDA) margins of global operators. Those operators perceived as offering the best network in their own country

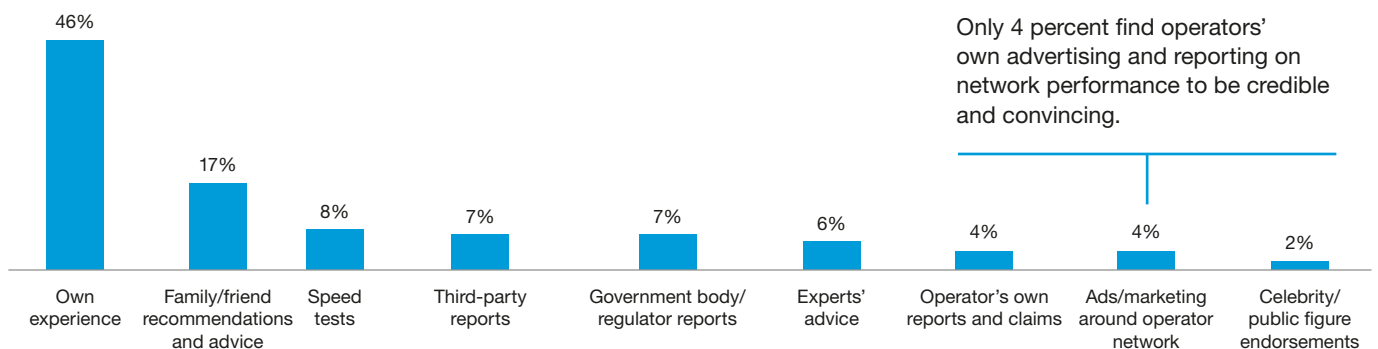
reported an EBITDA margin on average about 5 percent higher in H1 2017 compared to operators rated second best.⁶

Moving into a 5G future, three in five smartphone users are concerned that 4G connectivity will be marketed as 5G even before 5G networks are widely available. Consumers are calling on operators to steer clear of baseless marketing slogans and instead to focus on network experience, thus keeping networks more honest in their marketing.

17%

Consumers who believe their operator provides the best network performance in the country spend, on average, 17 percent more per month on mobile broadband access.

Figure 11: Most credible source of information which convinces consumers that an operator has the best network performance



Only 4 percent find operators' own advertising and reporting on network performance to be credible and convincing.

Base: All smartphone users aged 15–65 across Argentina, Brazil, China, Egypt, Finland, France, Germany, Indonesia, Ireland, Japan, Mexico, South Korea, the UK and the US
Source: Ericsson ConsumerLab, Towards a 5G Consumer Future, 2018

⁵ Ericsson ConsumerLab, Experience Shapes Customer Loyalty study, 2016

⁶ Tested across all 14 countries except Ireland (no access to Irish operators' EBITDA margin figures in H1 2017)

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