

Assembly

DELIVERING CONSUMER VALUE IN **DIGITAL TIMES**

EVOLVING LANDSCAPES IN EUROPEAN
TELECOMMUNICATIONS SERVICES

OCTOBER 2019

A study for:



European Telecommunication Network Operators' Association



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1 EXECUTIVE SUMMARY

European Telecommunications: a changing sector

The European telecoms sector has evolved significantly over recent years – it is a sector characterised by evolving service, improved trust and enhanced customer relationships. This study, while recognising the complexity of delivering sophisticated telecoms services, provides facts and figures on an often untold story: the comprehensive and growing value consumers receive from telecommunications services – realised as a direct result of strong competition between providers, innovation and considerable ongoing investments in networks and services. Already there are signs that investments in new areas and initiatives around customer innovation are paying off. Consumers in several European countries already report more positive perception of the sector, and feel increasingly satisfied by what they get. Telecoms operators rank highly on important issues such as **privacy, data protection and consumer trust** reflecting the fact they for a long time have been guardians of particularly sensitive and confidential data. Some of the largest European operators feature among the highest in international accountability indexes – demonstrating the attention they are putting on data governance and transparency related practices.

Consumer value: the “new networks” effect

The sector has seen record levels of investment both in terms of network and services for consumers, and operators are taking this further still by investing in the **networks of the future** which will underpin a whole range of new innovative services and even industries. Against this backdrop consumers increasingly benefit from faster speeds and availability of innovative services. As a result of these network investments and enhancements, operators are set to deliver dramatically increased value to consumers in the near future by enabling services they use and ask for the most.

A changed customer interaction

On top of the value coming from higher quality services, we observed the providers’ enhanced focus on the customer. Operators have focused their attention towards evolving **customer interaction, experience and satisfaction as a competitive tool**. They are improving the ways in which they interact and engage with and serve their customers, using the potential of new technologies to facilitate the solving of any problems that may arise in the customer experience, and are significantly increasing customer satisfaction as a result. This is reflected by the enhancement of customer care and the creation of a seamless, omni-channel customer experience to make sure nobody is left behind. Online portals, chatbots and AI, which allow

customers to solve problems or interact with their provider more quickly at any time of the day, are a good example of what the sector is doing to give consumers more control.

Beyond simplistic headlines: recognising complexity

The increasing use consumers make of telecommunications services and the reliance they have on them is likely to heighten consumers’ perception of any problems they experience, and the detriment that comes from them. The complexity of the ecosystem too does not help, as consumers may not always be able to identify at which level a problem has occurred (e.g. issues with an internet service, or with a device, or with another network) and tend to quickly place blame with their provider of connectivity. Often many perceived connectivity problems actually relate to the service being used (e.g. social media platform), which is a result not of the network or device being used to access them. Put simply, as the use of connectivity increases, so too does the likelihood to experience some problems. However, when things do sometimes go wrong, they get noticed. In such situations, operators are striving to avoid lengthy disputes with customers by turning to goodwill and compensation.

While some studies and surveys¹ may suggest the sector is characterised by relatively low levels of customer satisfaction, a high volume of problems, and a high number of complaints as a result – they tend not to consider more than traditional indicators of price and ignore the focus of telecoms operators putting consumers at the heart of what they do, at times going beyond what regulators and policymakers require of them. As this study shows, **looking beyond the usual set of indicators** is crucial when making an assessment of the sector, especially insofar as the results of surveys and reports often inform policy decisions and direction. Having a comprehensive and objective view of how the sector is evolving is of key importance to pursue sound and evidence-based future policymaking.

Whereas room for improvement always remains, especially in highly evolving sectors, we can see the progress being made. Prices are falling and consumers are getting more value from the services they use. The offers available to them, whether standalone products or bundles are becoming more tailor made, with additional products (e.g. video content, music streaming, cloud services) commonly available alongside connectivity and communications services. Compared to regulated utilities (such as electricity, water, and gas) the sector is offering lower prices, more choice, and better customer satisfaction.

¹ European Commission, Consumer Markets Scoreboard 2018 – https://ec.europa.eu/info/publications/consumer-markets-scoreboard_en

2 BACKGROUND

Connectivity underpins the digital world

Consumers increasingly see telecommunications services as essential

Several recent surveys have highlighted the increasing importance of telecoms services in consumer's lives. The essential nature of the service and increased satisfaction is reflected in users' tendency to take longer contracts and not churn. This is particularly evident in mobile, where a clear shift from prepaid tariffs to post-paid contracts (either rolling or fixed-term) has taken place in recent years, with users now less comfortable under a model where they top-up their credit and use it when they need, and more likely to embrace monthly subscriptions that make them worry less about actual consumption or the risk to be cut-off when they use up their allowance. Data from the largest European markets confirms this trend. In France, post-paid subscriptions rose from 50.6m in Q1 2012², to 66.8 in Q1 2019³. In Germany, active postpaid SIMs made up 65% of the market⁴, compared to

47% in 2012⁵. In Spain, post-paid rose from 32.9m to 42.8m between 2012 and 2018, whereas pre-paid contracts fell from 17.8m to 11.3m⁶. In the UK, pre-paid subscriptions fell from 39.6m in 2012 to 25.9m in 2012, while post-paid contracts rose from 48.5m to 66.2m⁷. Across the whole EU, only in four countries were pre-paid mobile subscriptions the majority in 2017, compared to five countries in 2016. The widespread adoption of longer, and often bundled contracts also means consumers are more likely to experience faults at some stage of the contract period, compared to say one-off purchases of goods, or of services with comparatively short-term contracts in other sectors.

As we progress towards the Internet of Things, where everything that can be connected is, and smart cities are the norm, the role of connectivity will only become more important. Estimates in a recent study from the European Commission point to a doubling of connected devices between 2015 and 2020, from 15.4bn to 30.7bn⁸. This number could increase by about 2.5 times in the following years, up to 2025. Against this backdrop, it is reasonable to presume that our expectations

of our telecommunications infrastructure and its importance will rise accordingly.

The mobile phone would be 'the most missed device'

In the UK, Ofcom's Online Nation Report 2019 finds that 51% of adults say the mobile phone is the device they would miss the most if it was taken away from them⁹. This is an increase by five percentage points compared to 2017, when 46% of respondents said the same. The underlying behaviour driving such reliance on mobile phones is based on a number of core activities which almost all the participants in Ofcom's study do regularly: these include accessing social media, messaging, shopping, and accessing audio and video streaming services¹⁰. By contrast, the percentage of people saying they do not use the internet is extremely low in users younger than 55 years old (1% in the 16–24s and 25–34s; 4% in the 35–44s; and 7% in the 45–54s); it only gets higher past that age (19% in the 55–64s; 33% in the 65–74s; and 48% in the 75+ group). This shows that no age group has a majority of 'unconnected' consumers, and it is reasonable to expect these percentages will fall further in the years ahead as connectivity continues to penetrate society, and 'digital natives' become more numerous.

The report also shows that adults spend more and more time online when they are outside the house: an average 2.9 hours compared to 2.5 hours in 2017. In other words, they increasingly expect well-functioning, ubiquitous connectivity to support their activities. It is therefore unsurprising that, against a backdrop of consistently increasing use of connectivity, consumers are more likely to notice any type of problem they may have with their service, and

attach more importance to it than they did in the past. This is not a problem faced by utilities for example.

A range of tariffs and providers

While the capital intensive nature of the telecommunications sector is inherently characterised by a degree of concentration at the infrastructure level, this has not prevented consumers from enjoying more choice when choosing telecommunication services. This is due both to the strong competition amongst fixed and mobile operators, and to the increasingly diverse and wide range of offers available. Many European countries are characterised by a high number of MVNOs, many of which have a very specific target-audience. The figure below shows how many MVNOs there are across the EU showing how consumers in many of the largest markets benefit from the number of operators offering services. Consumers also take advantage of competing communications services from OTTs such as WhatsApp and Skype.

Some regulators also assess the level of choice faced by consumers in conjunction with the evaluation they make of the openness of the internet. To this end, the recent report on open internet access found the Swedish regulator PTS to be satisfied with the level of choice in the country, which allows consumers a good range of options in choosing their internet provider, applications, services, and terminal equipment¹¹. In particular, the regulator refers to the availability of offers with unlimited data, in a country where consumers have historically been data-hungry, and of a broad range of price plans and subscriptions for different combinations of data, voice, text, and devices at different levels of cost.

² ARCEP, Observatoire trimestriel des marchés des communications électroniques en France – 1er trimestre 2012 – <https://archives.arcep.fr/index.php?id=11387#c22260>

³ ARCEP, Abonnés mobiles (T2 2019) – <https://www.arcep.fr/fileadmin/cru-1567755983/reprise/observatoire/obs-mobile/2019/t2-2019/obs-mobile-Q2-2019-010819-eng.pdf>

⁴ BNetzA Annual Market Report 2019 – https://www.bundesnetzagentur.de/SharedDocs/Downloads/EN/BNetzA/PressSection/ReportsPublications/2019/AnnualReport2018.pdf?__blob=publicationFile&v=3

⁵ BNetzA Annual Market Report 2012 – <https://www.arcep.fr/fileadmin/cru-1567755983/reprise/observatoire/obs-mobile/2019/t2-2019/obs-mobile-Q2-2019-010819-eng.pdf>

⁶ CNMC Data, Comunicaciones Móviles – http://data.cnmc.es/datagraph/jsp/inf_anual.jsp

⁷ Ofcom Communications Markets Report 2019 – <https://www.ofcom.org.uk/research-and-data/multi-sector-research/cmr/interactive-data>

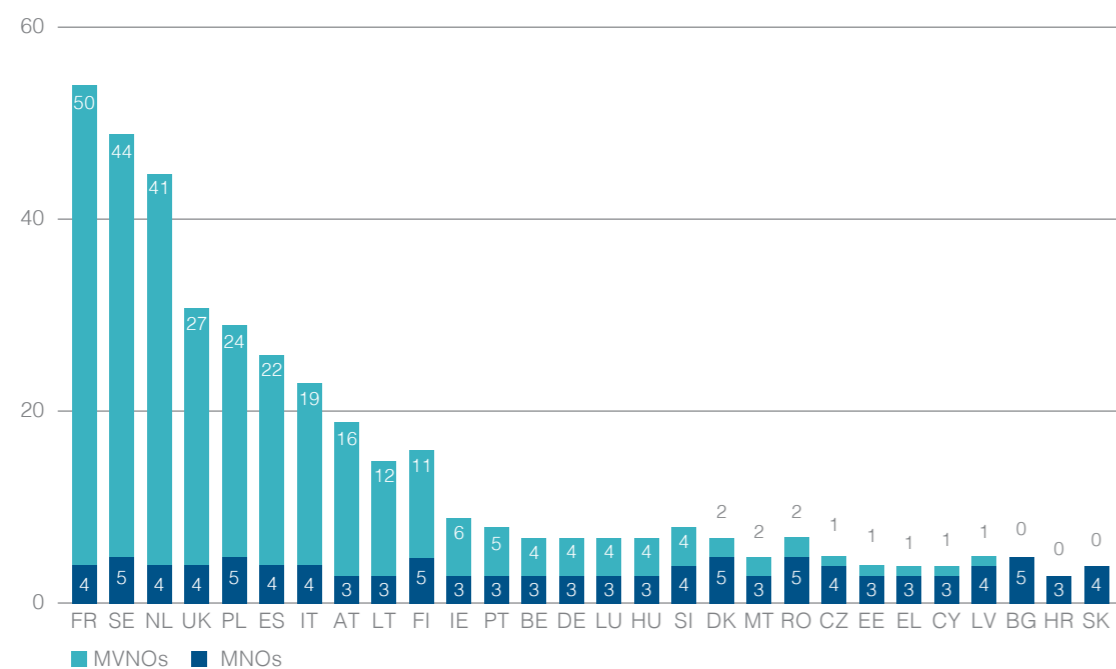
⁸ European Commission, Study on mapping Internet of Things innovation clusters in Europe, 2019 – https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=60150

⁹ Ofcom, Online Nation Report, 2019 – https://www.ofcom.org.uk/_data/assets/pdf_file/0025/149146/online-nation-report.pdf, p.19

¹⁰ Ofcom, Adults: Media Use and Attitudes Report, 2019 – https://www.ofcom.org.uk/_data/assets/pdf_file/0021/149124/adults-media-use-and-attitudes-report.pdf, p.5

¹¹ PTS, Net Neutrality Report 2018/2019 – <https://pts.se/contentassets/e96f52767faa4a3199b94a7725423f19/net-neutrality-report-2018-2019-pts-er-2019-15.pdf>, p.9

Figure 1: MNOs and MVNOs across Europe



Source: European Commission – Financial indicators, fixed and mobile telephony, broadcasting and bundled services indicators – 2017

Bundles are increasingly common and popular with consumers

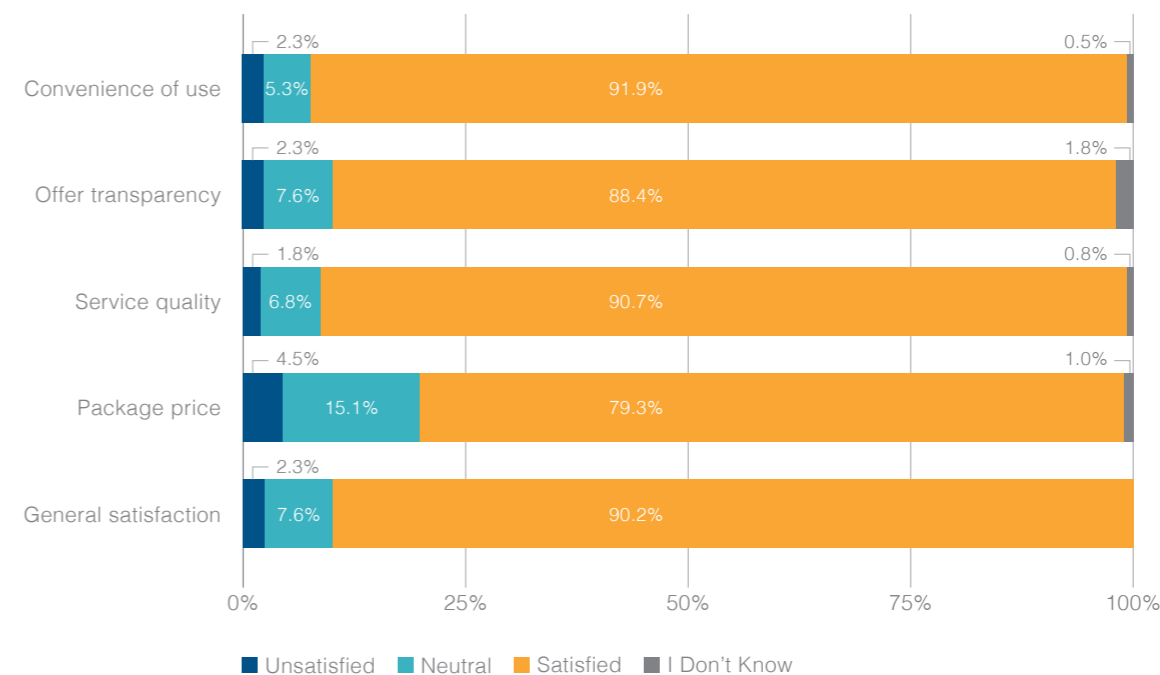
The wide choice available to consumers is well illustrated by the sharp rise in the number of bundled offers available across Europe. Many of these go beyond offering just connectivity, but increasingly also include content and services. Bundles are becoming a prominent part of the offers of telecoms providers, and are popular with consumers. Not only is their uptake on the rise, consumers tend to be more satisfied with the packages they contract.

In Poland, for example, the regulator UKE has tracked Polish consumers’ levels of satisfaction toward bundles for a few years now. Respondents overwhelmingly say that they are ‘fully satisfied’, or ‘rather satisfied’, with the value they receive from bundled offers according to aspects that include the prices of bundled services; transparency of what’s on offer; quality of service (including reliability and availability); convenience; and general satisfaction with the supplier¹². This is reflected by the fact that Polish consumers increasingly take up bundles (24.8%

of respondents against 17.9% the previous years – an increase by 6.9 percentage points)¹³. The UKE’s latest report on consumers’ opinion of the telecommunications markets confirms said

overwhelming levels of satisfaction, as shown below.

Figure 2: Consumer satisfaction of telecoms bundles in Poland



Source: UKE

In the UK, Ofcom reports that, on average, in Q3 2017 there were 156 core dual-play packages on offer from providers of residential services in the UK – almost twice the number in Q1 2013¹⁴. The number of core triple-play packages fell during the same period from 412 to 321. Including

just one additional paid-for service ‘add-on’ dramatically increases the number of package combinations available: in Q3 2017, adding one service resulted in an average of 352 dual-play packages and 2,296 triple-play packages.

¹² UKE, Public opinion survey on the functioning of the telecommunications market and consumer preferences, 2018 – https://uke.gov.pl/download/gfx/uke/en/defaultaktualnosci/36/151/1/2018_raport_analityczny_klienci_indywidualni_ost_publik_en_ver.pdf, p.51

¹³ Ibid, p.50

¹⁴ Ofcom, Pricing trends for communications services in the UK, 2018 – https://www.ofcom.org.uk/data/assets/pdf_file/0030/113898/pricing-report-2018.pdf, p.36

Helping consumers navigate the choices available

As the sector responds to the increasing demands from consumers with more tailored offers, almost inevitably complexity tends to rise. Consumers often encounter a degree of difficulty when comparing and choosing between these offers: these can be due to the different parts of which each offer is made up, that form bundles often hard to compare; and to the wealth of offers available from each operator, and across operators. However, this is the result of competition and technological developments which have ensured consumers have an unprecedented range of offers to choose from – including from new players such as OTTs which have entered the market and disrupted the sector quite unlike any other. Operators have also been evolving the ways in which they present their offers to customers, with increasingly attractive packages bundling in more than just connectivity (e.g. video content and channels; or music streaming services, either offered directly by operators or bundled into the offer and zero-rated; or other useful services such as cloud storage).

The challenge for the industry is now to strike the right balance and help consumers navigate such complexities when choosing the offers that best suit their needs and meet their expectations. Operators are already taking steps to do that, striving for seamless consumer experience across their channels of communication with the customer. Most have invested heavily in online customer care, allowing customers to fully

manage their contract and tailor it accordingly. Operators are also striving for better transparency and are simplifying information as much as possible to help consumers when choosing the tariff that is right for them – particularly in the area of bundles where there can be an added element of complexity.

Improved engagement within the sector

Taking out a telecommunications service shouldn't be compared to the purchase of almost any other good or service, as some surveys attempt to do. Services provided by telecoms operators are the ones consumers tend to contract for prolonged periods of time. This means it is a service with a high degree of interaction. Telecommunications operators also have extensive ways to engage and interact with the customer – many have an omni-channel approach: through physical stores, where customers can talk to customer service representatives; through social media; to online customer service portals which operators are placing increasing importance.

The industry as a whole recognises the need to further improve customer engagement and focus on it as a differentiator. Subscribers of bundles tend to be more engaged¹⁵, which means that, as their popularity increases, consumers' engagement and ability to identify the best deal also improves; and some operators are already taking steps to change their approach. Deutsche Telekom for example has recently committed to offer existing customers the same conditions as new customers, when they have to decide whether to extend their contract.

3 ASSESSING THE VALUE THE SECTOR PROVIDES

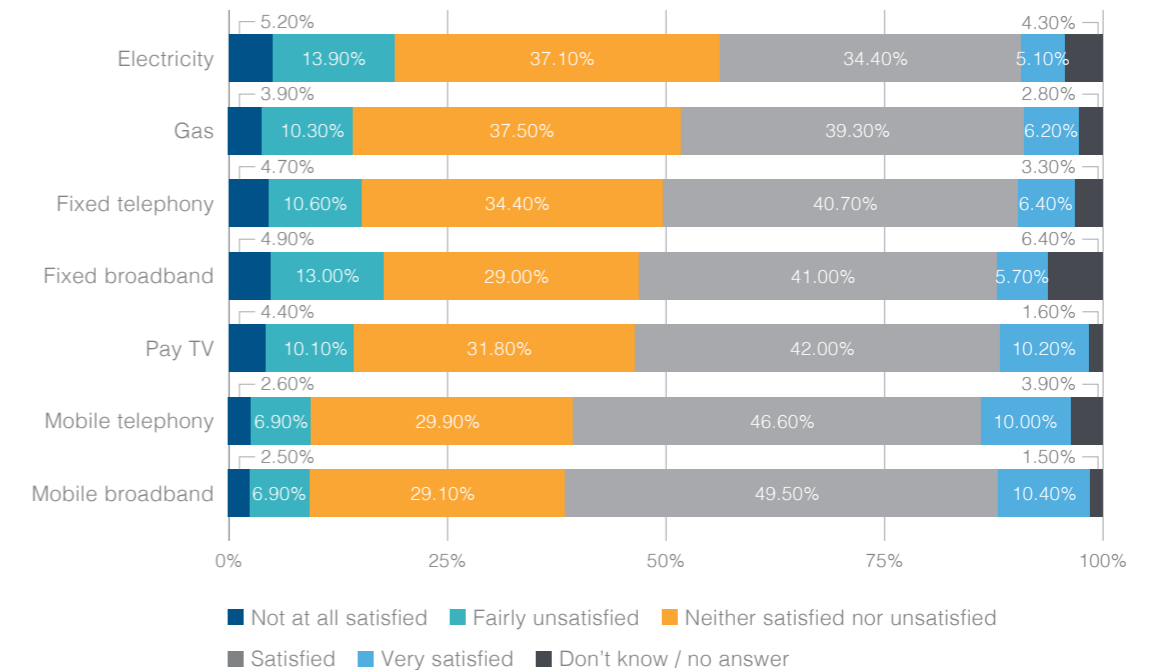
Value consumers receive

Consumers are increasingly positive about the service they receive

Consumer surveys in several EU countries show that consumers are increasingly happy with what they get. Satisfaction rates are improving over time, and comparing well with other sectors. This reflects a series of factors: on the one hand, consumers are becoming more familiar over time with technology and with the characteristics of connectivity, thereby showing increasing

awareness of what they can get from the service. On the other hand it reflects operators' efforts to improve and enhance the customer experience. As a result, consumers tend to be largely satisfied with their telecoms service in general, and are noticing the improvement in choice and quality. While findings vary between EU member states, the results of consumer surveys carried out by national regulators in some large markets (e.g. Poland, Spain, UK) paint a positive picture. In Spain, telecoms services (particularly mobile internet and telephony) see the highest satisfaction rate for consumers. Recent data

Figure 3: Consumer satisfaction across industries in Spain



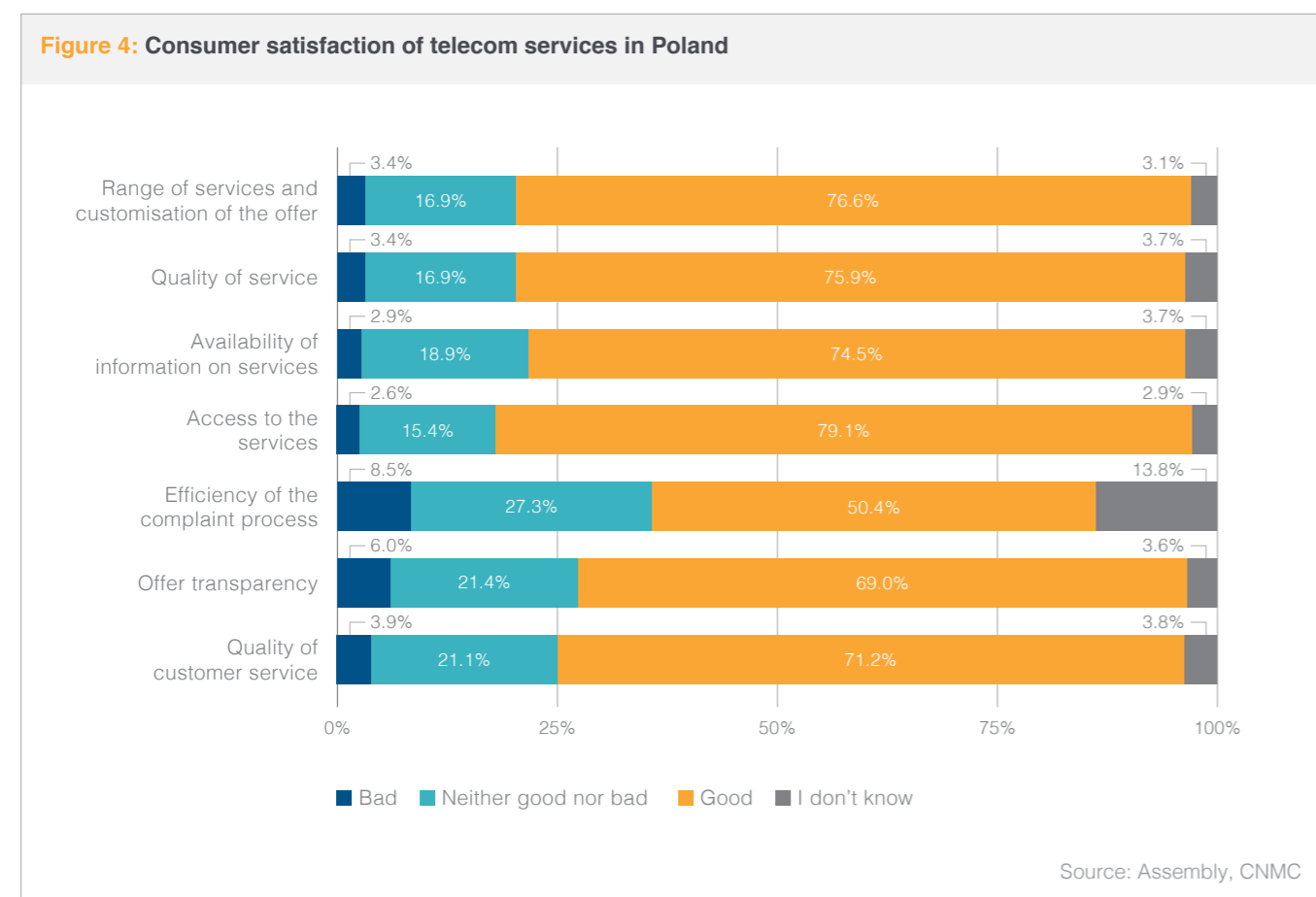
Source: Assembly, CNMC

¹⁵ Ibid, p.44

published by the consumer panel of the national regulator CNMC confirms this. Strikingly, dissatisfaction rates related to prices of internet and telephony services are significantly lower than those of electricity and gas (about half as much in the case of mobile internet and telephony); they are also declining year-on-year, whereas those for electricity and gas have both increased between Q4 2017 and Q4 2018¹⁶.

Polish customers also have a clearly positive view of their telecommunications market. Satisfaction rates across several indicators (range of services and offer, quality of service, availability of information, access, offer

transparency, quality of customer service) sit around 70% or more; only the efficiency of the complaints process leaves Polish consumers less satisfied, although more than half of them (50.4%) still say they are happy with it¹⁷. It is also worth noting that 20.8% of Polish consumers noticed positive changes in the market in the past year (up from 18% the previous year) whereas only 6.1% noticed negative changes¹⁸. Most noticed positive changes include: the fall in prices, greater number of offers, dynamic development of technology, better range of offers, and improvement of service quality.



In the UK, Ofcom reports improvements year on year in the way users feel about their telecoms service. The latest Quality of Service report finds that, overall, 83% of broadband customers consider themselves satisfied with the service (up from 80% the previous year)¹⁹ and 13% had reason to complain in 2018, down from 15% in 2017. In particular, around 83% of customers are satisfied with the reliability of the service, whereas 83% are satisfied with its speed. Things are even better when it comes to mobile services (93% satisfied, compared to 91% the previous year) with only 3% of consumers saying they are unhappy. When asked to rate their likelihood to recommend their communications provider to friends and family, UK telecoms customers are more likely to be 'promoters' i.e. to recommend their provider, than they are to be 'detractors'²⁰.

Operators are gaining ground on trust, privacy and data protection

Trust

In an increasingly data-driven society, how data is collected, used and protected is a key factor when fostering trust. While regulators have been very active on the data protection front, enforcing privacy standards stronger than ever with recent legislation such as GDPR, European operators are also making significant progress in deepening the trust they have with their customers. In particular, they are improving the ways in which they handle customers' data and communicate to customers about the use

they make of such data. It is also worth noting that European operators, unlike in some other markets (notably, the US), do not have a data-centric business model; in fact, they do very little to use personal data as a source of revenue, despite the significant amount and scope of personal data potentially available to them. The ePrivacy Directive²¹, which guarantees the secrecy of communications, strongly limits what use operators can make of consumers' communications metadata (e.g. location data). Operators are also developing policy positions on data and AI ethics.

Telecommunication providers are putting consumers in more control of their own personal data

Data privacy is an increasingly important issue related to connectivity, and consumers are increasingly showing as much attention to it as regulators are. The advent of the General Data Protection Regulation has given consumers more rights to protect their data, and also contributed to better awareness of the implications of sharing personal data online.

While several surveys show that consumers continue to be wary of online companies' use of personal data, telecoms providers have taken steps to go beyond regulatory obligations to put their customers more in control of the data they share across the services they use. One example is the Data Cockpit offered by Deutsche Telekom to its customers.

¹⁶ CNMC, Consumer Panel – <http://data.cnmc.es/datagraph/>

¹⁷ UKE, Public opinion survey on the functioning of the telecommunications market and consumer preferences, 2018 – https://uke.gov.pl/download/gfx/uke/en/defaultaktualnosci/36/151/1/2018_raport_analityczny_klienci_indywidualni_ost_publik_en_ver.pdf, p.79

¹⁸ Ibid, p.80–81

¹⁹ Ofcom, Choosing the Best Broadband Mobile and Landline Provider, April 2019 – https://www.ofcom.org.uk/_data/assets/pdf_file/0022/145525/comparing-service-quality-2018.pdf, p.3

²⁰ Ofcom, Customer Satisfaction Tracker, 2019 – https://www.ofcom.org.uk/_data/assets/pdf_file/0023/145814/customer-satisfaction-tracker-2019.pdf, p.9

²¹ <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32002L0058>

Case Study: Deutsche Telekom offers a Data Cockpit to keep users in control (Germany)

In addition to the privacy notices, Deutsche Telekom provides its customers with a Data Cockpit. This enables our customers to easily find out what data DT stores about them, and carry out a series of actions related to their own personal data.

The Cockpit informs customers proactively, providing them with visually intuitive representations of their data and allowing them to manage all their telecommunication contracts through one interface. It allows customers to get a clear overview over their digital footprints (i.e. personal data, opt-ins/permissions, etc.) stored and used at Deutsche Telekom, and lets them decide which personal data they would like to share and what opt-ins or permissions they want to give.

Telefonica's new customer relationship system, Aura, ensures that each customer has a personal data space²²; this securely stores the data they generate when using Telefónica's products and services (for example; location, payment history, etc). This personal data space enables Aura to offer a personalised experience for each user, but also to show customers the data they generate and give them control over how it is used. In an effort to foster customers' trust, Orange proactively offers a variety of tools to help customers control and manage their personal data. One example is the organisation of in-store training programmes to raise awareness and educate customers about data protection.

Telefonica, Deutsche Telekom, KPN and Orange have jointly been leading the Data Portability

Cooperation²³, an initiative analysing the implementation of portability of data in a way that adds value to customers while protecting their privacy. The operators plan to extend the cooperation to new players, in order to help define a new global data portability ecosystem.

Operators are developing internal data ethics and AI policies

As data becomes increasingly crucial, data protection and trust issues rise to the top among the concerns to address. On the one hand, there is the risk of putting data to bad use, which has been present for some time now and led policymakers recently to strengthen their regulatory efforts. On the other hand, artificial intelligence is increasingly being used in a

meaningful way.

While regulators have promoted stakeholder discussion on AI and taken action to steer best practices²⁴, telecoms operators have shown early awareness of these issues and have developed their own position and raise industry standards toward a safe use of personal data and the development of fair AI. Telecoms operators are early adopters in this regard and have developed concrete measures on how to reflect consumers' interest in the way AI-based technology is offered. Among other operators, Deutsche

Telekom and Orange have taken significant steps in this direction, by setting out articulate policy positions. Not only do these guidelines say what AI should do; they also set out what AI should not do. For example, Deutsche Telekom's guidelines aim to ensure AI systems do not cause harm to the user, and prevent so-called 'black boxes'²⁵. AI systems should also not rely on false or 'biased' data, and should rather be stopped than used in situations where they can return unsuitable or manipulated outcomes.

Case Study: Telcos enabling trustworthy AI for consumers: Deutsche Telekom and Orange

Deutsche Telekom set out the need for a Digital Ethics policy in 2018,²⁶ to address the challenges coming from the development of AI. This resulted in the company being one of the first enterprises worldwide to define self-binding AI policies and principles. The nine guidelines include, among other commitments, that a person of responsibility be named for every AI system and every AI function in the company right from the start. There is also a commitment to full transparency on what types of customer data are used, and to let customers know when they are communicating with an AI system. The company is in a position to stop

or switch off its AI systems at any time.

Orange developed its position on Artificial Intelligence in 2017²⁷. Its main recommendations include, among others, the need to monitor and tackle the biases AI may have, which affect the way AI makes its decisions. It also recommends to thoroughly assess the impact AI will have on jobs, and suggests moving on from an approach based on jobs, to one based on tasks. Policy makers will have to ensure European citizens develop the relevant skills to adapt to a workplace where AI is ever more present. Finally, for AI to succeed, it is crucial to develop collective acceptance and awareness of AI. To this end, Orange started a blog ('Hello Future')²⁸ to help raise awareness.

²² <https://www.telefonica.com/en/web/press-office/-/telefonica-presents-aura-a-pioneering-way-in-the-industry-to-interact-with-customers-based-on-cognitive-intelligence>

²³ <https://www.telefonica.com/web/press-office/-/telefonica-launches-aura-and-leads-the-integration-of-artificial-intelligence-in-its-networks-and-customer-care>

²⁴ European Commission, Ethics guidelines for trustworthy AI, 2019 – <https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai>

²⁵ Deutsche Telekom, Digital Ethics Guidelines on AI, 2018 – <https://www.telekom.com/resource/blob/544510/ca70d6697d35ba60fbc29aeeef4529e8/dl-181008-digi-tale-ethik-en-data.pdf>, p. 15

²⁶ <https://www.telekom.com/en/company/digital-responsibility/details/we-need-a-digital-ethics-policy-524364>

²⁷ Orange, Cultivating competitive and responsible Artificial Intelligence in Europe, 2018 –

<https://www.orange.com/fr/content/download/47609/1376586/version/2/file/Orange%20views%20on%20Artificial%20Intelligence.pdf>

²⁸ <https://hellofuture.orange.com/en/tag/artificial-intelligence/>

Digital Rights Indexes recognise the improvements operators have achieved

The results of operators' efforts are also reflected by their improvements in assessments such as the independent Ranking Digital Rights Corporate Accountability Index (RDR). The 2019 RDR evaluated 24 internet, mobile, and telecommunications operators on their disclosed commitments and policies affecting freedom of expression and privacy. RDR Index scores are based on company disclosure of policies evaluated according to 35 indicators in three categories (governance, freedom of expression, and privacy). In this year's RDR, Telefonica obtains a remarkably good result (57% overall)²⁹, jumping to the first position ahead of Vodafone (52%). Telenor (44%) and Deutsche Telekom (44%) also rank relatively high. In particular, Telefonica and Orange achieve high scores in the area of governance (94% and 82%, respectively, followed by Vodafone with 81% and Telenor with 78%), whereas Deutsche Telekom obtains the highest score for privacy across the board (60%). All European operators observed fare much better than their counterparts elsewhere, with the exception of AT&T in the US (48%, third place above Telenor).

Nonetheless, there remain areas for improvement. More can be done with regard to grievance and remedy mechanisms, about which companies (including telecommunications operators) can be more transparent and effective. A common criticism to telecommunications operators is that they should improve on how punctual and efficient they are in responding to consumers' complaints related to privacy and freedom of expression.

²⁹ <https://rankingdigitalrights.org/index2019/report/executive-summary/>

³⁰ <https://www.ofcom.gov.uk/about-ofcom/latest/media/media-releases/2019/broadband-and-phone-firms-put-fairness-first>

Increasing information and transparency to promote fairness and value

Operators are striving to improve the way in which they communicate with customers, and how they make them aware of new offers and opportunities to get better deals. They are making voluntary commitments to ensure that customers are treated fairly, with particular attention being paid to more vulnerable customers. They resolve to provide consumers with transparent information about their options and the pricing, and with reliable and efficient customer service; and to enable a smooth way for the consumer to leave or switch, on top of consumer protection and transparency obligations to which they are generally bound across Europe.

Many of the sector's largest operators are putting fairness at the heart of their business. Telecoms operators not only comply with a broad range of specific consumer protection rules but often compliment them by additional voluntary commitments on national levels. In the UK, providers have recently agreed to a set of 'Fairness for Customers commitments'³⁰.

Enhanced transparency about the quality of service being provided

On top of the standard measurements of service quality, which is generally driven by regulatory requirements, operators are gradually improving in the way they communicate to their customers as to the level of service they should expect where they are. Increasingly, fixed and mobile operators make detailed coverage maps available to their customers, either through their websites or through specific apps, and often include additional tools such as speed tests for

customers to check that the service they are receiving is in line with what was promised. For example, Deutsche Telekom in Germany, and Orange in Poland, provide coverage maps for both fixed and mobile services. In general,

mobile services coverage maps are broken down by technology (2G, 3G, 4G). In Portugal, Altice goes as far as stating whether coverage is 'reduced', 'partial', or 'good'.

Table 1: Transparency of quality of service

| Country | Operator | Tools provided |
|-----------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Belgium | Proximus | <ul style="list-style-type: none"> Mobile coverage map³¹ Speed test³² |
| Bulgaria | Vivacom | <ul style="list-style-type: none"> Mobile coverage map³³ |
| France | Orange | <ul style="list-style-type: none"> Fibre coverage map³⁴ Mobile coverage map³⁵ |
| Germany | Deutsche Telekom | <ul style="list-style-type: none"> Fixed and mobile coverage maps³⁶ Speed test³⁷ |
| Italy | TIM | <ul style="list-style-type: none"> Coverage maps for mobile³⁸ Speed Test³⁹ |
| The Netherlands | KPN | <ul style="list-style-type: none"> Coverage for mobile networks⁴⁰ Speed Test⁴¹ |
| Poland | Orange | <ul style="list-style-type: none"> Coverage for fixed and mobile services⁴² Speed Test⁴³ |
| Portugal | Altice Portugal | <ul style="list-style-type: none"> Coverage for 3G and 4G, by municipality, on a scale of three levels ('reduced', 'partial', 'good')⁴⁴ |
| Romania | T-Mobile | <ul style="list-style-type: none"> Mobile coverage⁴⁵ |
| Spain | Telefonica | <ul style="list-style-type: none"> Coverage maps for 2G, 3G, 4G⁴⁶ Speed test in the dedicated mobile app⁴⁷ |
| The UK | BT | <ul style="list-style-type: none"> Coverage checker⁴⁸ Speed test⁴⁹ |

Source: Assembly

³¹ https://www.proximus.be/support/en/id_sfaqr_map_network/personal/support/internet/internet-on-the-go/surf-on-4g-or-3g/network-coverage-map.html

³² <https://pxs.speedtestcustom.com>

³³ <https://www.vivacom.bg/en/about/about-us/coverage>

³⁴ <https://reseaux.orange.fr/cartes-de-couverture/fibre-optique>

³⁵ <https://reseaux.orange.fr/cartes-de-couverture/mobile-3g-4g>

³⁶ https://t-map.telekom.de/tmap/resources/apps/coverage_checker/index.html

³⁷ <http://speedtest.t-online.de/#/>

³⁸ <https://www.tim.it/verifica-copertura#/>

³⁹ <https://www.tim.it/fattori-velocita#speedtest>

⁴⁰ <https://www.kpn.com/netwerk/dekkingskaart.htm>

⁴¹ <https://www.kpn.com/internet/speedtest.htm>

⁴² <https://www.orange.pl/view/mapazasiiegu>

⁴³ <http://speedtest.orange.pl/>

⁴⁴ <https://www.meo.pt/internet/internet-movel/cobertura?search=type&keyword=cobertura>

⁴⁵ <https://www.telekom.ro/harta-acoperire/>

⁴⁶ <http://www.movistar.es/particulares/coberturas/movil/4G/>

⁴⁷ <http://www.movistar.es/particulares/movil/servicios/app-mimovistar?>

⁴⁸ <https://www.bt.com/mobile/4g-coverage-checker/>

⁴⁹ <https://www.bt.com/help/home/broadband/speedtest/>

Telecommunication services have become increasingly affordable over time

Prices for telecommunications services have generally been on a downward trajectory for several years across Europe. Positively, price reductions appear to be more evident where it matters more: the fastest tiers of broadband offers, where consumers are migrating; and bundles, particularly those with more services (e.g triple and quad-play). This means consumers are getting more value, and is reflected in a fall in spend for telecoms services per household, whereas other utilities see prices generally going up and spend per household rise accordingly.

European consumers get increasingly better value for what they pay for

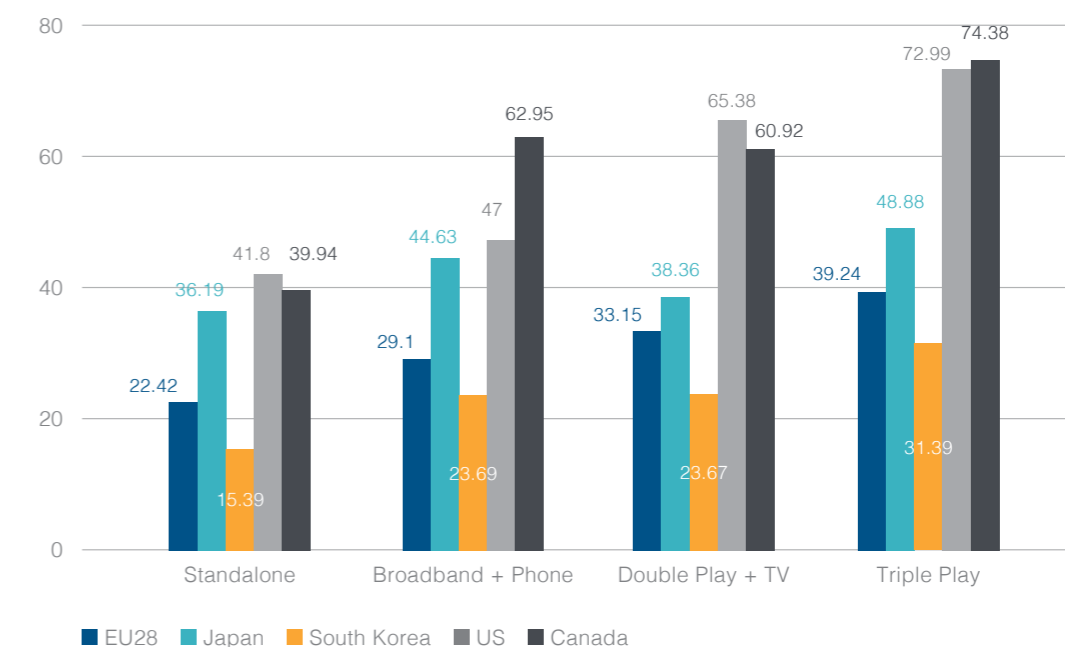
A view of the pan-European picture confirms that consumers are getting better value, at lower prices. The European Commission's latest report on broadband prices of December 2018 shows that the biggest reductions in price can be seen in the products, or bundles, with the

highest value: for example, higher speed tiers of broadband services see the steepest retail price reduction; and the same can be said of triple-play bundles⁵⁰. Bundles including TV streaming also see price falls.

In general, prices fell between 2016 and 2017. Prices for single play offers decreased slightly in the 12–30Mbps range (-2.1%); as speeds increase, reductions are steeper – about -9% in the 30–100Mbps basket, and up to -19.6% in the 100+Mbps group. Triple-play offers became considerably more affordable, with reductions by about a quarter in the 100+Mbps range (-24.3%). 12–30Mbps and 30–100Mbps offers also had double-digit decreases (-13.2% and -14.5%, respectively)⁵¹.

European consumers also enjoy cheaper broadband compared to fellow consumers in other regions. The same broadband report of the EC highlights that prices in the EU are significantly lower than the US and Canada, and somewhat lower than in Japan. This holds true across all speed tiers; only in the 100+Mbps tier are EU prices slightly higher than Japan, for Broadband + TV bundles and Triple Play.

Figure 5: international comparison of EU broadband prices, 30–100Mbps



Source: Assembly, European Commission

Consumers of mobile services also benefit from lower prices. Data from the European Commission on mobile broadband prices shows that mobile broadband was significantly cheaper in 2018 than in 2017 and 2016 in all usage

baskets as defined by the OECD (various offers which under OECD are structured in specific baskets)⁵². In particular, packages with higher data allowances saw the most significant price falls, as shown in the figure below.

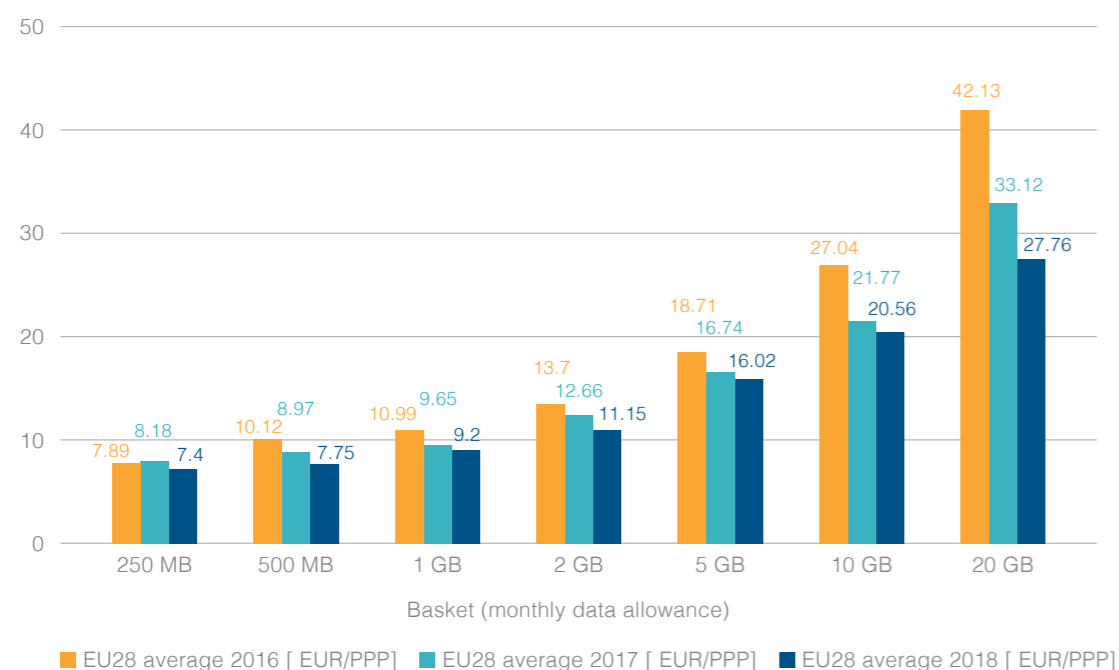
⁵⁰ European Commission, Fixed Broadband Prices in Europe 2017 – https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=55892, p.7

⁵¹ Ibid, p.28

⁵² European Commission, Mobile Broadband Prices in Europe 2018 –

<https://ec.europa.eu/digital-single-market/en/news/mobile-broadband-prices-went-down-europe-2018>

Figure 6: Mobile broadband price variations in the EU, 2016–2018



Source: Assembly, European Commission

By international comparison, prices in Europe are in line with, or slightly less expensive than other developed markets. In the highest tier, offers solely with data allowances are more expensive than in Korea, but cheaper than in the US and Norway⁵³.

Data from individual countries confirms this downward trend in prices. For example, the latest annual report of the Italian regulator AGCOM finds that, between 2010 and 2017, the price of telecoms services in the country fell by 19%, while the general price index saw an increase by 9%⁵⁴. During the same period of time, prices decreased even more sharply in France, where they fell by 38%, while inflation and the price of other regulated services all increased.

Similarly, in the UK, despite increased uptake of fixed and mobile broadband, average monthly household spending on phone and broadband services has fallen in the last decade. The gap has narrowed between the prices of what Ofcom defines as superfast broadband (30Mbps and above) and the price of standard broadband; so much so, that many UK users can now upgrade their broadband at no extra cost. Some providers now also offer up to 25% off bundled services over the minimum contractual period⁵⁵, and the popularity of bundles contributes to the fall in overall spend for telecoms services: the average price of bundled services used by a typical household is 24% less than the average price for the same services on their own.

Investing to unlock more value for consumers

Consumers benefit from increasing service quality as a result of investment

Network evolution promotes customer higher satisfaction

Operators are continuing to invest in upgrading and rolling out their networks. The ongoing investment in pushing fibre deeper into the network means less reliance on copper. This should translate not only into significantly higher speeds, but consumers will often find that the speeds they get more closely match what they were advertised and sold given that fibre is less susceptible to network congestion and contention⁵⁶. Satisfaction surveys conducted by regulators already offer an indication of what is coming, with consumers using a fibre connection much less likely to have reason to complain. As fibre deployment progresses, it is expected that satisfaction rates will improve further accordingly.

Fibre rollout is gathering pace across Europe. For example, Deutsche Telekom reports that it passed 26m households in Germany with 100Mbps speeds, and it installed 60,000 km of fibre optic in 2018 (+50% on 2017)⁵⁷. It also built 1,300 new base stations, reaching a total of 27,000, 80% of which are connected with fibre and equipped with single-RAN technology, which makes them 5G-ready. In France, Orange pledged to increase its reach of fibre from 12m households in 2018 to 16m by 2020, and to extend its offering in underserved areas by the end of 2019: from 500,000 households

and businesses to 3 million, including areas covered by Public Initiative Networks (PINs)⁵⁸. In Spain, Telefonica's FTTH network passed 20m households as of May 2018⁵⁹, and is currently the largest in Europe; it is now focusing on medium and smaller cities, with plans to reach 25m households by 2020.

Deploying 5G to enable new use cases and support whole new industries

While 4G networks are still being deployed, many operators have started with their 5G rollout and as such Europe is in competition with the US and Asia. While the exact uses cases of 5G are still being explored and developed, the sector is acting as an important enabler of the next wave of connectivity and industrial development – everything that can be connected, will be connected. As a technology, 5G promises to offer speeds many times faster than 4G and some operators in Europe have already deployed this commercially with no price-premium over 4G and even in some cases on an unlimited basis (for instance all operators in the UK).

Some operators are also deploying 5G within the context of fixed-wireless access (FWA) use cases⁶⁰. The economic case is such that 5G FWA can provide performances close to fibre connections, with lower deployment costs. This means that, in areas where deploying fibre is challenging and less economically viable, 5G FWA can significantly improve the experience of consumers that, until now, have suffered from slow and unreliable connectivity and are unlikely to be reached by fibre any time soon.

⁵³ European Commission, Mobile Broadband Prices in Europe 2018 – https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=57336, p.54

⁵⁴ AGCOM, 2018 Market Report <https://www.agcom.it/documents/10179/11258925/Capitolo+III/be94f717-03cd-49af-b24d-0bad5330d7c1>, p.78

⁵⁵ Ofcom, Pricing trends for communications services in the UK – https://www.ofcom.org.uk/_data/assets/pdf_file/0030/113898/pricing-report-2018.pdf, p.2

⁵⁶ Ofcom found FTTP to outperform FTTC connections of the same speed – https://www.ofcom.org.uk/_data/assets/pdf_file/0020/147332/home-broadband-report-2018.pdf, p.34

⁵⁷ <https://www.telekom.com/en/media/media-information/archive/buildout-year-2018-dt-speeds-up-8-million-households-557698>

⁵⁸ <https://www.orange.com/en/Press-Room/press-releases/press-releases-2019/Orange-strengthens-its-coverage-in-less-dense-areas-Orange-s-fibre-offers-soon-available-on-all-Public-Initiative-Networks-in-France>

⁵⁹ <https://blogthinkbig.com/informe-sociedad-fibra-optica-telefonica>

⁶⁰ <http://www.threemediacentre.co.uk/news/2019/three-to-launch-the-uks-fastest-5g-network-in-august.aspx>

Telecoms operators are improving how they engage with and service their customers

European operators have taken significant steps to enhance the relationship they have with customers. This not only relates to the interaction between operators and customers when a problem arises, but also to enrich and enhance the experience throughout the use of the service. In addition to the recent enhancements in digital customer care and online account servicing, we have identified a clear tendency from operators to invest in technology such as chatbots and AI; these guide a user through their choices, and help identify and resolve a significant amount

of faults without the need to wait for human intervention. These efforts have ensured that customers spend much less time waiting in line for an assistant, and can get help even at times of the day when a human assistant may not be available. They also get help in choosing content and packages when they want to upgrade, and are assisted in making the most out of their service. These enhancements have meant that consumers get the most value from the service they have subscribed and have a smoother experience during the life of their contract. Deutsche Telekom's Digital Assistant and Click-To-Call Button are good examples of such enhancements.

Case Study: Deutsche Telekom launched a Digital Service Assistant and click-to-call button (Germany)

Since 2016, Deutsche Telekom introduced a Digital Assistant to help customers receive answers more quickly. Initially, the Digital Assistant had relatively limited capabilities – it could only answer simple questions about telephony, internet or TV interference. Due to high ratings of customer approval, in 2018 Deutsche Telekom expanded its functions: now, the chatbot provides more artificial intelligence, better dialogue capabilities and a significantly wider help area. While Deutsche Telekom continues to follow the principle that personal contact is indispensable in customer service, chatbots have proved a useful addition, because customers expect 24/7 answers to their questions. The Digital Assistant is available around the clock. The company is constantly improving its capabilities through machine learning. The Assistant has a high degree of acceptance: as of February 2019, DT reported that it handles about 130,000 chats per month (more than three times compared to the 40,000 DT disclosed in November)

and resolves about 40% of all issues autonomously. As a result, DT is gradually developing the Digital Assistant to become even more versatile. In addition to the Web and App, it will also be available in the future via Facebook Messenger, Amazon Echo and Deutsche Telekom's own Smart Speaker. Its ability to recognise spoken language means it will soon be used as a virtual conversation partner on the hotline.

The introduction of the click-to-call button was also a success. Using a mobile app on their smartphone or tablet, customers can call customer service or send a chat request. Before, the average chat duration was 12 minutes. Now, it's down to four or less; this is also due to the fact that agents do not have to verify all the details of the caller; in addition, agents get increased feedback (reportedly up by 40%), so they can more quickly learn how to make adjustments and guide customer interactions. Deutsche Telekom reports that the system resulted in an overall reduction in handling times by 20%.

Chatbots and dedicated apps are transforming customer service and making it more tailored to the consumer's needs and demands. Consumers can now do things such as request a callback instead of waiting in line; obtain suggestions through chatbots or mobile apps to optimise the performance of their mobile device or their home WiFi; and generally get a personalised

experience of the services they have taken up. And it seems to work – consumers are warming to the new systems, they use them more and more, and report generally higher levels of satisfaction in their customer service interactions. The case studies below show the progress Telefonica, Orange, and TDC have made in this area.

Case Study: Telefonica's Aura uses cognitive intelligence to enhance customer relationship (Spain, Germany, UK)

Telefonica announced the introduction of Aura at the Mobile World Congress 2018. It is the result of the company's commitment to make artificial intelligence capabilities available to Telefonica's customers in order to offer them a differentiated and personalised experience. In the company's vision, Aura and its customers will "learn from each other", so that new cases of use will be incorporated over time.

The system is currently available in six countries (Argentina, Brazil, Chile, Germany,

Spain, UK) and will soon be extended to Colombia, Ecuador, and Uruguay. Aura is designed to be a 'one-stop shop' for Telefonica's customer needs. Users are able to talk to Aura through Telefónica's own channels (e.g. Telefonica's own apps) and some third party platforms like Facebook Messenger, Google Assistant, and Microsoft Cortana. Talking to the network in real time through multiple channels, customers will be able to ask Aura about their bill, the services contracted, data usage, and other content. In Chile, it is also integrated with Facebook's Safety Check service to help Telefónica customers connect with friends and family and let them know they are safe following a crisis, such as an earthquake.

Case Study: Orange's Djingo resolves most requests without human intervention (France, Spain)

Orange is also making significant ground in the use of artificial intelligence and chatbot technology, with a view to retain customer service as a competitive advantage.

The My Orange app serves 18.5 million active users across the world, and aims to provide them with a simple way to contact the company and to meet their expectation that someone has to be there to assist at any time. Customers in France can contact an advisor directly via live chat on the My Orange app.

At Orange Bank, all customer requests made via the mobile app are first processed by a virtual assistant (Djingo, built in collaboration with Deutsche Telekom), which passes them on to an advisor if necessary. In 2018, Orange stated that, since its launch, Djingo had over 1.5 million conversations with Orange's customers. In Spain, 78% of requests submitted to Djingo were resolved without any human intervention.

The chatbot on the Orange Spain app and website handled around 125,000 conversations per month on average. Altogether, Orange chatbots engaged in almost 3 million conversations in 2018; the company set a target to more than double that, aiming for 8 million conversations in 2019.

Case Study: TDC makes an app to improve WiFi performance available to everyone (Denmark)

Danish operator Fullrate, part of the TDC group, has taken steps to help the country's consumers get the best out of their WiFi – even when they are not customers of TDC. The operator developed the app having noted that one third of customers' enquiries related to issues with the WiFi connection. As a result, Fullrate has made the '100% WiFi' app available to all Danish consumers,

where they can check the current WiFi status in all the rooms of their house, compare with previous measurements, and see advice on how to improve the WiFi experience at home. This facilitates Danish consumer's ability to solve the issue themselves, without having to engage with customer service or wait for a technician to go and solve the problem at home. The app is available for iPhone and Android; it is in Danish, and designed for simplicity rather than engaging in technical detail. One does not have to be a Fullrate customer to use the app.

Operators are enhancing accessibility for consumers with disabilities

Operators are paying increasing attention to specific needs of consumers with disabilities, and have been for many years. While deploying services for more vulnerable consumers is commonly part of universal service obligations, operators have often gone beyond regulatory requirements to improve accessibility.

For example, The ITU considered Orange as an operator to look at for good practice, as

early as 2012.⁶¹ The French provider has kept its focus on these issues. In 2018, it launched an app called Tactile Facile⁶²; the app makes the Android phone experience easier and more personalised. The company also runs a website (Autonomie avec Orange)⁶³ which highlights all the solutions adapted to elderly people or people with disabilities. On this site, customers who have hearing issues can contact Orange via chat, or video using sign language. Similarly, some operators provide video calls in sign language so that users unable to speak have an easier way to contact customer service. One such example is CosmOTE.

⁶¹ ITU, Making Mobile Phones and Services Accessible for Persons with Disabilities, 2012 – <https://www.itu.int/en/ITU-D/Digital-Inclusion/Persons-with-Disabilities/Documents/Making%20Mobile-English.pdf>.

⁶² <https://boutique.orange.fr/informations/accessibilite-autonomie/tactile-facile.php>.

⁶³ <https://boutique.orange.fr/informations/accessibilite-autonomie/>

Case study: Cosmote's video calls, also available in sign language (Greece)

The Greek operator CosmOTE has enhanced its means to interact with customers not only through a chat system, but also by introducing the opportunity for

customers to have video calls with customer service representatives⁶⁴. Customers can request a video call by entering their name, email address, and number for which they wish to be serviced, before they can speak live to an operator. The service is also available in sign language, thereby improving accessibility for customers with certain disabilities.

More generally, improvements in mobile connectivity have also facilitated the flourishing of mobile apps to serve disabled individuals and allow them to communicate through smartphones, without having to buy expensive equipment or text-to-speech software. Orange itself supports startups such as RogerVoice⁶⁵, offering solutions for people with hearing difficulties, or Jaccede⁶⁶, which enables people with reduced mobility to obtain information about accessible public spaces and places in France and abroad. Beyond the telecoms sector, technology companies have also been innovating here. Google has introduced several similar apps between 2018 and 2019, such as Live Transcribe⁶⁷, Sound Amplifier⁶⁸, Google Lookout⁶⁹, and Voice Access⁷⁰. Apple too offers solutions⁷¹ to fulfil similar purposes.

Operators are using their goodwill to solve disputes, rather than resort to legal process

While this is an often overlooked, rarely communicated aspect, it is important to highlight that telcos strive to handle customers' complaints in a swift manner, so as to minimise disputes. Arguably, this is an area in which there can still be room for improvement; however, service providers are already ensuring that the primary redress mechanism they adopt in handling disputes with consumers is based on customer care and goodwill, for example providing compensation or discounts when faults or omissions occur.

This is in the interest of both industry and consumers, as operators find that bilateral dispute resolution in the case of complaints is the most cost efficient solution, avoiding high administrative and legal costs, and maximising the opportunity to still keep customers happy despite the complaint. Our conversations with

some operators have highlighted that, even in cases where they feel a complaint may not be fully justified, they prefer a solution based on goodwill. Seeking for legal clarification (e.g. going to court) is a clear exception and limited to specific situations, e.g. with customers who complain frequently and tend not to accept settlements. This is becoming standard behaviour

for European operators. One example is Telecom Italia (TIM), which has led the way in adopting conciliation procedures to settle disputes without having to go to court since 1993. In 2011, the European Parliament recognised this as an example of best practice, known as 'Alternative Disputes Resolution' (ADR).

4 CONCLUSIONS

» Surveys are not always the most appropriate way through which to measure customer perception.

Customer perceptions are notoriously difficult to define and measure, yet it's one area the sector is often assessed against – usually asked as a binary question as part of a survey, usually not robust enough. While operators should always strive to meet and exceed expectations, asking such a question may fail to take into account the fast-evolving nature of a service like telecommunications, and the wide variation in expectations customers are likely to have (based on a range of considerations including what they've been sold, how much they pay, and what their reason for using the service is). Surveys do not necessarily always reveal the facts but instead tend to offer a more simplistic and often subjective perception.

» Customer engagement is improving as operators have adopted a customer-centric approach.

The investment operators are making in the improvement of customer relationships and experience is already improving engagement within the sector. The continued focus on online portals, and investments in AI and chatbots should enable consumers to interact more easily

with operators, and get assistance at any time of the day. The results obtained by operators on this front so far are encouraging.

» A sector that has improved trust and is promoting fairness and value.

Significant progress is being made across Europe in deepening the trust operators have with their customers. While some operators already rank highly compared to their peers internationally, more is being done. Operators are striving to improve the way in which (and when) they communicate with their customers and how they make them aware of new offers and opportunities to get better deals. A new concept of fairness is emerging with operators voluntarily committing to make improvements.

» Consumers benefit from an increasing range of tariffs and services.

Consumers have greatly benefited from the diverse range of tariffs and bundles of services available – many able to save money as a result. However consumers can encounter difficulty when comparing and choosing between offers. To reduce the paradox of this happening, operators are paying attention to increasing transparency of offers and helping customers make informed choices.

⁶⁴ https://help.cosmote.gr/system/templates/selfservice/gnosis/#portal/20160000002049/contact_us

⁶⁵ <https://startup.orange.com/en/news/how-digital-innovation-helps-people-with-hearing-difficulties/>

⁶⁶ https://startup.orange.com/en/start_up/jaccede-2/

⁶⁷ <https://www.android.com/accessibility/live-transcribe/>

⁶⁸ <https://www.blog.google/products/android/sound-amplifier-more-people-can-hear-clearly/>

⁶⁹ <https://www.blog.google/outreach-initiatives/accessibility/lookout-discover-your-surroundings-help-ai/>

⁷⁰ <https://www.blog.google/outreach-initiatives/accessibility/use-your-voice-access-world-new-android-app/>

⁷¹ <https://www.apple.com/uk/accessibility/>

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