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in partnership with **accenture**

Digital inclusion in a post Covid-19 world

Learnings from our Covid-19 emergency response

devices.now

Emergency support to get the most vulnerable online during the Covid-19 crisis

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Background

DevicesDotNow

FutureDotNow's response to Covid-19

Through the Online Centres Network, FutureDotNow heard of thousands of people who were facing the pandemic whilst also excluded from a world that was now built online.

We mobilised an emergency response, DevicesDotNow, to get the most vulnerable online during the Covid-19 crisis, ultimately providing devices, connectivity and support to over 11,000 people. You can read more about the detail of the campaign in our impact reports (futuredotnow.uk/devicesdotnow/).

Our learning on each stage of the "device donation, restoration, delivery & support" process has been developed into a playbook for others. PROJECT REBOOT has been developed by FutureDotNow partner Nominet into a platform for community organisers who want to run local programmes. (rebootproject.uk/).

This document provides insight into what we learnt about personal access through the DevicesDotNow campaign, including on the issue of data poverty.

It has been produced in partnership with Accenture, one of the founding partners of FutureDotNow.

Emergency support to get the most vulnerable online during the Covid-19 crisis

Digital inclusion landscape and data poverty challenge

What is digital inclusion?

Building on the DCMS Digital Inclusion Outcomes framework, the Digital Skills and Inclusion Policy paper (2017) describes Digital Inclusion as "having the access, skills and motivation to confidently go online to access the opportunities of the internet."

Digital inclusion: *Conceptual framework reflecting Covid-19 learning*
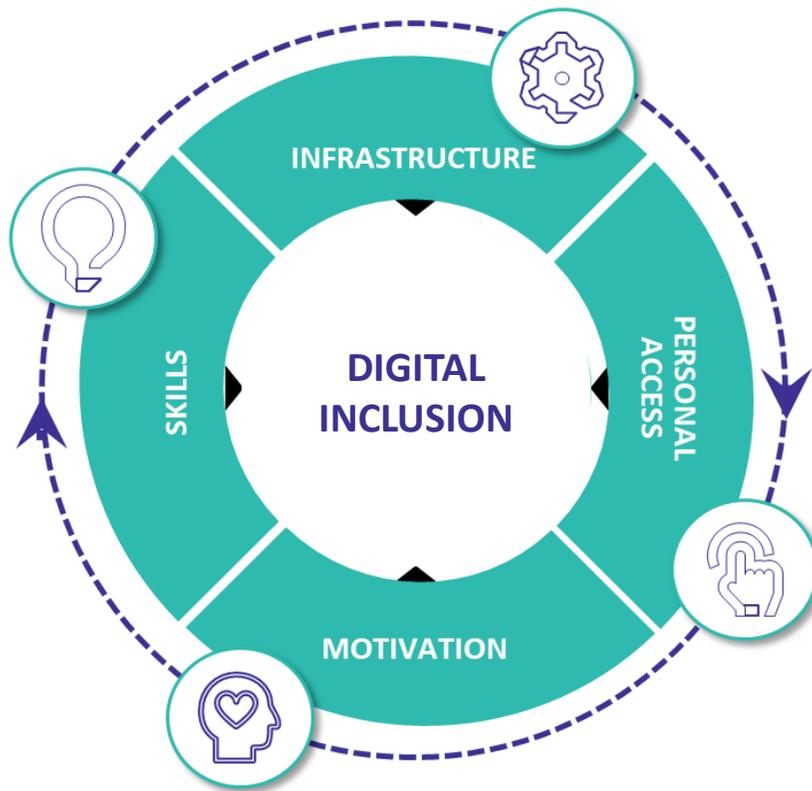
INFRASTRUCTURE

NETWORK availability and speed of connection in the local area

PERSONAL ACCESS

DEVICES to suit one's needs to go online

CONNECTIVITY to enable Internet access

AFFORDABILITY to be able to access essential sites

Data Poverty

WILL/ MOTIVATION

MOTIVATION to want to access the Internet

RELEVANCE understanding why it's relevant to "me"

CALL TO ACTION knowing where to go for support

SKILLS

AWARENESS of digital fundamentals

SKILLS building digital skills and knowledge to use digital tools

CONFIDENCE in the ability to use digital tools

APPLICATION putting into practice the skills that have been learned

Note: The present research relates to Connectivity and Affordability. Data poverty is one part of Personal Access together with devices.

Many in the UK do not have access to the internet or skills to make the most of it…

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The [Lloyds 2020 UK Consumer Digital Index](#) provides an insight into digital engagement in Britain:

1. Economic impact

Two-thirds of jobs need digital skills of some kind, yet 52% of the UK workforce are not yet fully digitally enabled

2. Skills shortage

16% of the UK population cannot undertake foundation digital activities such as turning on a device, connecting to Wi-Fi or opening an app by themselves

3. Demographic span

At a crucial time when digital can turn isolation into inclusion, 44% of those offline are under the age of 60 (the working pool)

There are 1.9m households today who do not have access to the internet and are digitally excluded. Motives for engaging digitally have exploded as result of the Covid-19 pandemic[1].

Digital exclusion is the hidden frontline in the fight against the Covid-19 and a growing emergency for some of the most vulnerable individuals in the UK today. Digital exclusion rarely comes as a 'single spy' but correlates strongly with other inter-related issues such as unemployment, low-pay and educational attainment.

The Covid-19 pandemic has highlighted and accelerated the need to urgently tackle digital exclusion, in particular the issue of data poverty, i.e. affordable access to connectivity and specific sites free of charge (i.e. zero rates sites such as welfare sites or NHS for example).

1. [FutureDotNow Motivation Research Findings](#) & [How a Black Swan Event Validates Digital Transformation Initiatives](#)

Data poverty can be described as...

"Someone who already has a device however is not able to do essential tasks because they cannot afford to connect to the internet." *working definition.*
Data poverty is a key digital issue today since it acts as barrier to a digitally inclusive society and it further entrenches inequality and marginalisation.

Data poverty stems from the lack of personal access in the following 3 areas:
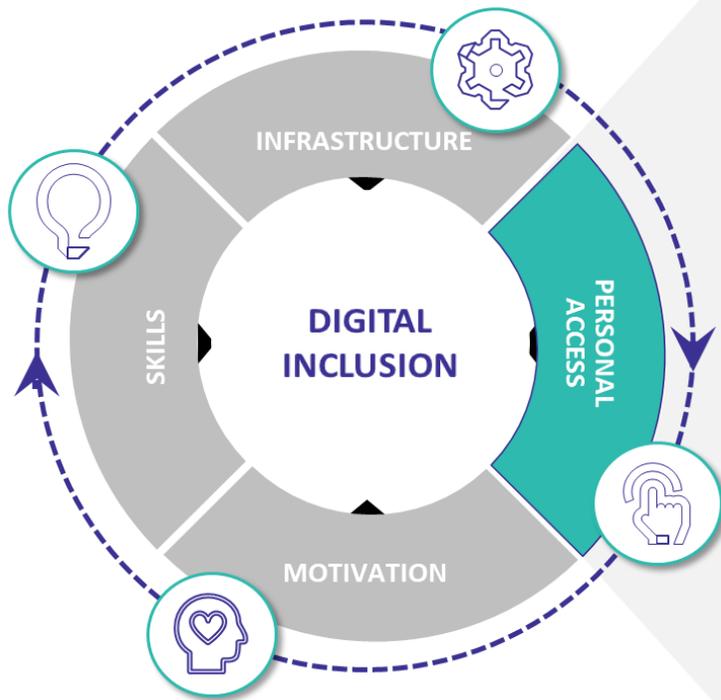
Affordability of Connectivity
7M households have no fixed or mobile BB, 25.9 million UK PAYG subscriptions (28% of the total UK mobile subscriptions[1]), many of whom constantly 'top up' from free sources which become unavailable during lockdown.

Exclusion from accessing essential basic services
Few websites are available without the user incurring data charges, including essential government services. During lockdown mobile operators collaborated to 'zero rate' the NHS website, ensuring data didn't prevent any consumer from accessing information whether on PAYG or contract service

Systemic issues in securing access
Insecure employment (e.g. zero-hour contracts) and credit checks for example, can lead to systemic issues in securing telephony contracts, resulting in people choosing PAYG, potentially paying a poverty premium.

DIGITAL INCLUSION
- INFRASTRUCTURE
- PERSONAL ACCESS
- MOTIVATION
- SKILLS

1. Ofcom: The Communications Market Report, 4th July, 2019

Affordability of Connectivity

7M households have no fixed or mobile BB, many more are on PAYG mobile data packages, many of whom constantly 'top up' from free sources which become unavailable during lockdown.

- **Equipment and access costs** are common reasons for not having internet access in the household (ONS, 2019)

- **Financial barriers:** 40% of those who do not use the Internet report annual incomes below £12,500 (Oxford Internet Survey, 2019)

- **Educational gap:** there is a misunderstanding in how much data is needed and how much connectivity should cost households (Snook report, 2019)

- **Systems issues:** credit checks can prohibit some from entering into monthly contracts and the *poverty premium* may apply

- **Innovation:** lack of innovative options e.g. data gifting

Exclusion from essential basic services

Few websites are available without the user incurring data charges, including essential government services. During lockdown mobile operators collaborated to 'zero rate' the NHS website, ensuring data didn't prevent any consumer from accessing information whether on PAYG or contract service

- Missing out on online government services can result in **being unable to access financial aid or healthcare** (Low Income Tax Reform Group, 2012)

- **UK's digital sector has quickly stepped up** in response to Covid-19 offering zero rated sites (e.g. O2 offers access to a set of critical services that customers can browse free of charge including NHS, financial guidance and advice networks). **How can these zero-rated sites continue to be accessed post Covid-19?**

- Governments worldwide have encouraged these industry responses to **enable access to critical services** (World Bank, 2020): through elimination / reduction of network usage fees, enabling zero-rating for critical services, and exemptions on network neutrality (e.g. Germany)

Case studies and personas

Data poverty: who is impacted?

DevicesDotNow identified two key groups;

- those who are already **in data poverty today** as a result of public amenities closing
- those who are **soon to enter data poverty** as they do not have a means of paying for connectivity.

Already in data poverty: *closure of facilities cuts access*	*Soon to enter data poverty:* *provided with device yet future connectivity is unaffordable*
New device gives a welcome health boost Situation: • Before the outbreak of coronavirus Kathalingam, 42, would go to his local Online Centre, Skills Enterprise, to access the internet, go to classes and access other key services and support. Kathalingam has a medical condition meaning he needs to regularly order and pick up prescriptions. Requires internet to see local developments and for job search. Reason for lack of data: • He is at risk of becoming socially isolated and of being unable to carry out daily tasks like shopping and ordering prescriptions for his condition. Impact of having access to data: *"I am now feeling confident that I can connect with my community and I can ask for help when I need it. I used the NHS website to request a food parcel and now I can contact anyone if there is an emergency.'*	**'Community Champion' stays social throughout social distancing** Situation: • Ron Roper, 82, is staying in touch during self-isolation thanks to a free tablet and data plan from the DevicesDotNow scheme. Ron - who lives by himself - has a medical condition which affects his eyes. Reason for lack of data: • As his family live far away, Ron's age and current social distancing guidelines have meant that he is at risk of becoming socially isolated and being unable to carry out daily tasks like shopping and ordering prescriptions for his condition. Impact of having access to data: *"Ron will be able to send and receive emails from friends and neighbours, as well as video call his family and see his grandchildren. He can also do shopping from his home instead of putting himself at risk by going out.*

Source: Good Things Foundation

Wants & Needs

- To be able to access the internet with an easy to use device, with affordable and reliable connectivity

- To feel connected with family, friends and the world at large through video calls

- To browse online sites to find out trustworthy information and local news

- To be able to access essential services including NHS and food parcels

Pain Points

- With more essential services (healthcare, groceries, news) going online during Covid-19 pandemic, Digital Skills remain a challenge for those above 65+

- Patchy outdoor 4G coverage in rural areas leads to unreliable connectivity

- Struggle to afford monthly connectivity through PAYG

- Having access to a smartphone, yet research shows that laptops, desktop PCs and tablets remain more important for those 65+

Who am I?

- 80 year old woman living alone in a small village near Manchester, has a physical disability which reduces her mobility beyond her home

- Has a smartphone with 4G but struggles to afford data on her Pay As You Go (PAYG) data-plan and with poor signal in rural areas

Insight

- Providing reliable connectivity 4G coverage in rural areas, affordable connectivity, and support with digital skills will help more senior citizens to go online

Guru lost access to free internet when his local café closed and he cannot afford broadband at home

Wants & Needs

- To search the online job postings and to apply for jobs online

- Digital skills training to improve employability with online degrees/certifications

- To connect with friends, therapist and the wider community through video calls

- To go online to read local news and other relevant information

- To be able to access essential services such as NHS to order prescriptions online

Pain Points

- Having to go outside of home to access the Internet since monthly connectivity is too expensive in the long-run

- Lack of online access outside of home means a risk of becoming socially isolated and of being unable to carry out daily tasks like shopping and ordering prescriptions

- Being locked out of the opportunities that the digital economy brings due to a lack of internet access

Insight

- Those in data poverty who suddenly lost access to the internet struggle to get online at home, in order to carry out their lives as before and to access the job market

Who am I?

- 40 year old unemployed man living alone in London, since his tech savvy partner left

- Mental health issues make it difficult to leave the house to pick up groceries and medication

- Has a laptop that he used to take to the local café for internet access but the café has recently closed and he cannot afford to pay for private broadband

Nazarin an Iranian refugee who needs internet access to learn English and gain digital skills

Who am I?

- 30 year old refugee from Iran, arrived in the UK in 2019 and mother of a 10-year old son with physical disability

- Lack of local knowledge, cultural context, digital and language skills

- Has a smartphone that allows her to access English classes online and to connect with her family in Iran

Wants & Needs

- To learn English using online training

- To improve her digital skills online in order to help her find employment

- To connect with friends and family in Iran through video calls

- To be able to access essential services including NHS

- To be able to receive funding from community organisations and charities

Pain Points

- Lack of a laptop or tablet makes it hard for her young son to complete homework

- Limited English language skills and the need to learn English means that acquiring digital skills may be more difficult

- Lack of access to digital finance makes charitable donations hard to access

- Ongoing connectivity is unaffordable due to her lack of direct income due to being unemployed and having to rely on charity donations

Insight

- Some of those in data poverty can have 'serious affordability' issues for connectivity and language can be a barrier to connecting to the internet

Trisha needs internet access to do homework and connect with her teachers and psychologist

Who am I?

- 10 year old child with learning difficulties living in one of UK's most disadvantaged areas

- Lack of access to special needs teachers and support

- Does not have a laptop or tablet; mother has access to a smartphone on which Trisha can watch videos to learn. But only when data is available

Wants & Needs

- To keep up with the learning curriculum online

- To connect with teachers, psychologist, and friends through video calls

- To learn new skills through videos

Pain Points

- Lack of a laptop or tablet means that she is unable to complete homework

- Lack of a personal device means she is able to watch videos only for a set amount of time due to limited amounts of data on her mother's smartphone

- Ongoing connectivity is unaffordable, particularly for video streaming which is very data intensive

Insight

- While having a device can help those in data poverty to access the internet, they need the right device for their needs together with affordable and ongoing connectivity

Toby a single father that needs the internet to search for jobs yet he cannot afford to pay for data

Who am I?

- 24 year old not in Education, Employment, or Training (NEET). Single father of a 5-year old son

- Unemployed in the past year and lacking digital skills

- Recently received a smartphone through a charity initiative, with a 30-day 6GB data voucher that allows him to access digital skills classes online and to connect with family and friends

Wants & Needs

- To search the online job postings and to apply for jobs online

- To do digital skills training and improve employability through online degrees/certifications

- To connect with friends and family through video calls

- To be able to access essential services including NHS and Universal Credit

- To be able to receive funding from community organisations and charities

Pain Points

- Lack of a laptop or tablet means that he is unable to update his CV and comfortably search job postings

- Lack of access to digital finance means that charitable donations can be hard to access

- Lost access to the Internet during Covid-19 due to closure of facilities

- Ongoing connectivity is unaffordable due to being unemployed and having to rely on Universal Credit

Insight

- For those who cannot afford connectivity in their home, access to the internet was cut off suddenly during the Covid-19 pandemic and they require a sustainable connectivity solution

Opportunities and insights

The case for sustainable, reliable, and affordable connectivity for those in need

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Covid-19 has made it clearer than ever: **access to the internet is more important than ever** to take advantage of and to participate in today's digital economy.

The challenge of data poverty is to make connectivity affordable and accessible to vulnerable populations.

During the DevicesDotNow campaign we learnt about several opportunities to improve access to connectivity, such as:

Data Pooling/Gifting

is the practice of pooling any unused bandwidth to provide connectivity options to those who do not afford it

Zero-rating sites

means removing data usage fees so they not count towards any data cap in place on the internet access service

Opening up local Wi-Fi networks

by working together with local authorities / communities to enable access to free local connectivity

"Mountains" of unused data every month

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In the UK, research from the comparison site *Uswitch* shows that in the UK there are **significant "data mountains" sitting unused**...

Due to the **Covid-19 lockdown**, this issue has escalated as **more people use their Wi-Fi** at home...

143 **million gigabytes**
of unused data
every month in the UK[1]

165 **million** gigabytes
of unused data
during the lockdown[2]

3.4 **gigabytes**
of mobile data going unused per person
every month in the UK[1]

500 **megabytes**
less mobile data being used in a month,
21% fall on the average 2.4Gb monthly usage[2]

Opportunity 1: Data Pooling / Gifting

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Data Pooling / Gifting refers to the practice of donating any unused mobile data to provide connectivity options to those who do not afford it. Charitable Data Gifting is currently being done in two main ways:

Data for cash: charitable financial contribution	*Data for data:* charitable data donation
Data is donated by individual users and converted into money by the telecommunications operators	**Data is donated by individual users, pooled by the telecommunications operators, and redistributed to other users**

Data for cash:
Data is donated by individual users and converted into money by the telecommunications operators

- Vodafone Netherlands allows individuals to donate to the Johan Cruijff foundation and to the Salvation Army
- Easy to donate straight from the app: straight from the Vodafone app; one ticket can be donated for 50MB
- Data gets converted into money and transferred to charities
- Incentive to donate: automatic enrolment into a lottery and potential to win a bike

Data for data:
Data is donated by individual users, pooled by the telecommunications operators, and redistributed to other users

OPTUS

- Optus Australia allows individuals to donate data to other Australians
- People in need get a Prepaid SIM with data plus unlimited calls and text every 42 days
- Every month, data donations are pooled and then distributed as an added data boost "to help young Australians realise their full potential"
- For those on a mobile plan, data can be donated via the Optus app; for those on pre-paid, SMS registration is required

Key Consideration: The feasibility of data gifting needs to be explored further. Although from a technical perspective data gifting is feasible, operators may need to establish new processes or to update existing customer management and billing processes which may require additional investment.

Opportunity 2: Making essential websites free at the point of access

Zero-rating online sites is when an ISP applies a price of zero to the data traffic associated with a particular application or class of applications and the data does not count towards any data cap in place on the internet access service 1. **Zero-rating can be carried out for:**

Zero-rating
for commercial reasons

Zero-rating
for charitable reasons

Some mobile operators have explored zero-rating as a way to attract consumers to their services

- StreamOn is a free additional offer for Germany's Telekom's mobile services customers
- When booking, the data traffic for audio and video streaming from Telekom's content partners is not offset against the data allowance contractually agreed in the mobile tariff [2]
- A German Court ruled in 2019 that StreamOn violates the principle of net neutrality and prohibited the zero-rated service's continuation

Zero rating funded by the site owner

- Like 0800 tariffs for phone calls, zero rating could be applied to websites, with the data costs picked up by the content provider.
- For example, retail organisations providing access to their online shop with no data charge for the consumer, or charities providing access to help content in the same way they would provide an 0800 helpline.

During lockdown, some network providers waived data charges for critical websites

- O2 customers can browse a range of financial guidance, health and emotional support, advice sites on their O2-enabled devices without incurring data use
- More than 20 websites zero-rated on O2 in addition to NHS websites
- Additional zero-rated sites include Citizens Advice, Money Advice Service and Mind

Key Consideration: *Zero-rating may threaten Net Neutrality, the idea that internet service providers should treat all content flowing through their cables and cell towers equally [3]. In Europe, ISPs are prohibited from blocking or throttling access to content or applications, unless it is justifiable on the basis of necessary and reasonable traffic management [4].*

Opportunity 3: Opening up local Wi-Fi networks

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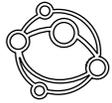
Opening up public and other local Wi-Fi networks by working together with local authorities and local communities to enable access to freely available connectivity for vulnerable people. Examples of how this can be approached by leveraging grassroots, community-based resources include

Free Public Wi-Fi	*Free Neighbourhood Wi-Fi*
Work with local authorities to leverage existing Public Wi-Fi networks or to set up new networks	**Appeal to and incentivise individuals / local communities to share Wi-Fi networks with their vulnerable neighbours**

Free Public Wi-Fi

Work with local authorities to leverage existing Public Wi-Fi networks or to set up new networks

- Since 2007, Singaporeans have been enjoying free wireless connectivity at speeds of up to 512 kbit/s almost everywhere in the country, under a programme known as "Wireless@SG"[1]
- The programme was initiated by the Infocomm Development Authority of Singapore (IDA) and is run by three private local operators
- Users do not have to be subscribers of these operators to enjoy the free access. The three operators are investing around USD 65 million to extend the network, with IDA defraying around USD 19 million of that amount

Free Neighbourhood Wi-Fi

Appeal to and incentivise individuals / local communities to share Wi-Fi networks with their vulnerable neighbours

- In USA, volunteers with Red Hook WiFi set up the neighbourhood's open Wi-Fi network in 2012 for the Red Hook residents, the majority of whom live in public housing[2]
- During the Superstorm Sandy, the network gave first responders and residents online access to exchange crucial information, such as official evacuation routes and where to go for food and first-aid supplies.
- The only costs for accessing the internet via a mesh network is the router and upkeep which can be done by volunteers

Key Consideration: The security and legal risks associated with public and other shared networks need to be explored further. The risk of anonymous malicious actors exploiting vulnerabilities in the networks to produce, share or download illegal content or other activities needs to be mitigated.

Appendix

Access: Definitions and terminology

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Area	Type	Stats
INFRASTRUCTURE needed to provide access	• **Fixed network** – Fibre / Copper network • **Mobile** – cellular network / Wi-Fi network	• **95% of residential premises** are able to get superfast broadband (94% for all properties) (OFCOM, 2019) [1] • **9% of the UK** does not have good outdoor 4G coverage from any operator, predominantly in rural areas (OFCOM, 2019) [1] • EE, O2, Three and Vodafone were offering mobile and/or fixed 5G services (October 2019) in more than **40 cities and towns** in the UK (OFCOM, 2019) [1]
DEVICES to act as a means to access the Internet	• Smartphone • Tablet • Laptop • Desktop PC	• **Smartphone take-up continues to increase among older consumers (aged 75+);** 1 in 5 now personally use one (OFCOM, 2018) [2] • Laptops, desktop PCs and tablets remain more important for those 65+ (OFCOM, 2018) [2]
CONNECTIVITY to enable Internet access	• Public Wi-Fi • Home Wi-Fi • Mobile data	• **53,000** premises cannot access either a decent fixed broadband service or get good 4G coverage indoors (OFCOM, 2019) [1] • **189,000** homes should be unable to access a decent fixed broadband service (OFCOM, 2019) [1] • Just under **50% of older (75+) consumers do not have home broadband** (OFCOM, 2018) [2] • **4% of UK adults** use the internet only in alternative locations, i.e. outside the home. 53% of these adults use the internet at someone else's home, 35% use it in their workplace and 27% use it in the library (OFCOM, 2018) [2]
AFFORDABILITY to be able to access essential sites	• Contract • Pay as you go	• **2% of UK** adults say they have experienced 'serious affordability' issues in 2017 (OFCOM, 2018) [2] • **1 in 10 adults** have had difficulty paying for communications services, unchanged from 2015; this is highest among younger consumers and those with long-term mental illness (OFCOM, 2018) [2] • This is highest among younger consumers (17% of 16-24-year olds say they have experienced difficulties), and lowest among older consumers (2% of over-74s) (OFCOM, 2018) [2] • **Smartphones and pay TV** remain the services 31% people most commonly have difficulty paying for, closely followed by 27% for both standard and superfast fixed broadband (OFCOM, 2018) [2]

Zero rating: O2 whitelisted websites

Type	Zero-rated Sites
Citizens Advice:	https://www.citizensadvice.org.uk/
Financial Advice:	https://www.moneyadviceservice.org.uk/en https://www.stepchange.org/
Mental Health / Emotional Support:	https://www.samaritans.org/ https://www.mind.org.uk/ https://www.rethink.org/ https://www.anxiety.org/ https://youngminds.org.uk/ https://www.mindout.org.uk/
Support for Older People:	https://www.ageuk.org.uk/ https://www.thesilverline.org.uk/
Support for Young People:	https://www.themix.org.uk/ https://www.childline.co.uk/
Health Support:	https://www.alzheimers.org.uk/ https://www.macmillan.org.uk/ https://www.asthma.org.uk/ https://www.bhf.org.uk/ https://www.diabetes.org.uk/
Disability Support:	https://www.scope.org.uk/ https://www.rnib.org.uk/ https://www.actiononhearingloss.org.uk/
Bereavement Support:	https://www.cruse.org.uk/

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Overview of data consumption trends in the UK

According to OFCOM' Communications Markets Report (2019), data consumption increased rapidly in 2018 as more people were using more data to watch online videos. The volume of data used on fixed and mobile connections both grew by around a quarter, with **240GB being used on average each month per fixed broadband connection** and **2.9GB in an average month being used on each mobile data connection**.

Users fall under a set of distinct categories based on needs and usage patters (Uswitch, 2020):

- **Low data user** - 'I'll use it every so often, to keep up with friends and interesting news'
- **Medium data user** - 'I need it for my email, social media and for entertainment'
- **Heavy data user** -'I rely on my phone for both entertainment and work'

How much data does one need to carry out various online activities (Choose, 2016)?

Type	Data amount
Browsing and email: up to 10GB/month	up to 10GB a month
Music and radio streaming	at least 10GB a month
TV and film streaming	at least 20-40GB a month
Downloading music and movies	at least 40GB a month
Gaming and VoIP	at least 40GB a month

Overview of data consumption trends in the UK

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We estimated a moderate data user's activities and data consumption (Broadband Choices, 2019) and found that **~23GB** would be sufficient for an individual to browse the internet, to download documents and to stream videos during a month (assuming they would not have access to Wi-Fi).

Activity	Data consumption	Data consumption (MB)	Times/Month	Data/Month (MB)
One hour web browsing	10 - 25MB	20	10	200
Download a document	2MB	2	5	10
One hour of Facebook	20MB	20	10	200
Download a music track	4MB	4	10	40
Stream 30 minutes of YouTube	175MB	175	10	1750
Download a non-HD film	700MB – 1GB	1000	2	2000
Download a HD film	4GB	4000	2	8000
Stream one hour of HD video	2GB	2000	5	10000
Stream one hour of music or radio	150MB	150	5	750
Total				**22950**