

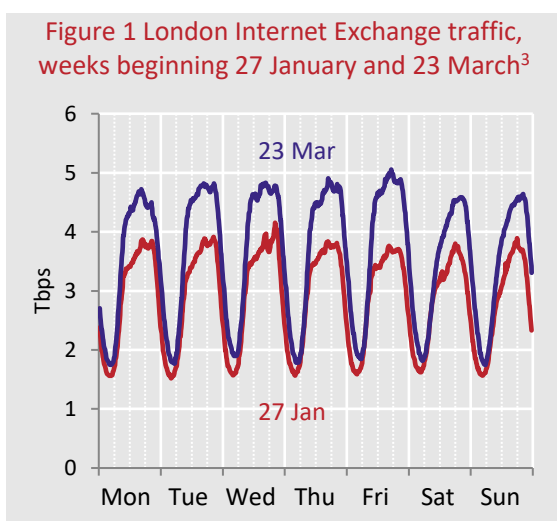
COVID & accelerated digitalisation: implications for broadband

COVID has had a significant impact on internet usage. This note looks at the changes, which of these are likely to be permanent, and the implications for policy.

The impact of lockdown on broadband

Lockdown has obviously had a significant impact on our behaviour, with a huge increase in both home working and 'home playing'. Of those with jobs, 6% reported mainly working from home in the first two months of the year. By April this had leapt to 43%.¹ Children were out of school, and everyone's leisure time was more likely to be spent at home.

Unsurprisingly, this led to a surge in broadband usage, for both work and entertainment. During the busiest week, traffic was up 25-30% over January at the UK's largest internet exchange (where ISPs and content providers swap traffic):²



Some raised concerns that this surge in traffic was going to strain the network. In reality, UK broadband has continued to operate extremely well. In part this is because the network has built-in 'headroom' for traffic surges due to many

issues, such as updates to console games. In addition operators moved quickly to add capacity in their core networks (even as they dealt with the impact of COVID on their own organisations).

However, the other main reason is that much of the additional usage was during the daytime, when people's home broadband would otherwise have been idle.

As a result, network speeds only dipped slightly (generally well under 5%) even during the busiest period.⁴ Indeed, broadband operators were confident enough that they were able to remove data caps during the lock-down, encouraging even greater usage.⁵

So the internet just worked. Precisely because this is what people have come to expect, it is easy to underestimate its importance. Imagine lock-down with broadband that stumbled (or before it was available).

Widespread, reliable broadband enabled the shift to home-working and schooling; eased social isolation by providing video calls; removed the need for trips to the shops; prevented boredom thanks to streaming video, online gaming etc.; provided up-to-date health and lock-down information; and so on.

All of these had value in their own right, but they also made lock-down tolerable – without the internet, would people have been willing to spend so much time at home? If not, then the health consequences would have been even worse. Equally, without home working, the hit to the economy would have been even sharper.

Broadband has been an essential tool in our response to COVID-19, saving lives and jobs.

¹ Alan Felstead and Darja Reuschke (WISERD), [Homeworking in the UK: before and during the 2020 lockdown](#), August 2020

² Significant traffic is also passed directly from content providers to ISPs, without transiting internet exchanges

³ LINX, [LANS SNMP](#) [accessed 31 March 2020]. Figures are total for the LON1 and LON2 IXs

⁴ Ofcom, [The performance of fixed-line broadband delivered to UK residential customers](#), 13 May 2020

⁵ Guardian, [Broadband providers to lift data caps during Covid-19 lockdown](#), 29 March 2020

Likely permanent changes in behaviour

Some aspects of broadband usage are now returning to pre-COVID levels, but there are likely to be permanent changes in how we use the internet for work, entertainment and socialising.

Working from home

Lock-down has been a forced experiment in home working, and as it has turned out a largely successful one. ONS found that of businesses that reported more home working, just 24% saw a decrease in productivity of any level, and 12% reported an increase.⁶ (Such productivity increases can be significant - one rigorous pre-COVID study of call centre workers found a 13% increase in calls per shift, as well as improved satisfaction, as a result of working from home).⁷

The ONS figures might have been even more favourable if home workers hadn't also been dealing with other aspects of lock-down, such as children home from school.

Productivity impact aside, home working can also reduce office costs, increase employee satisfaction and so on. (Of desk-based workers, 61% report that they would prefer to work from home more, even after lockdown.⁸) As a result, 19% of UK businesses expect increased home working to be permanent.⁹

This would have benefits well beyond the employer and employee. Enhanced productivity will address an area of weakness in the UK economy. A recent study by Welsh universities concluded: "if those who want to continue working at home in the future are allowed to do so, productivity may be boosted by a sustained increase in the prevalence of homeworking as the strongest performers are those who are keenest to continue to work at home."¹⁰

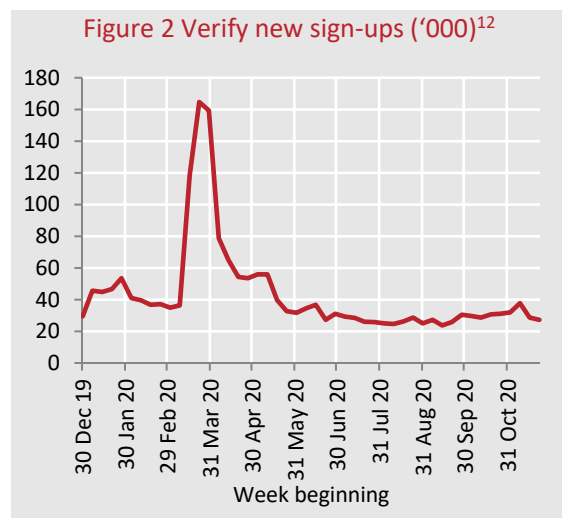
Home working can also relieve strain on transport infrastructure during the commute, reduce pollution and so on.

There are also some more subtle effects. If work is no longer linked to an office, then employers can recruit from anywhere in the country, and conversely individuals are not limited to the pool of jobs in their neighbourhood. This has the potential to mitigate income disparities across the country. As the Prime Minister has put it, "previously left-behind towns could become homeworking hubs".¹¹

The possibility of working from home can also be particularly beneficial for those with disabilities, for whom the journey to a place of work may be burdensome or even impossible.

Use of government services

Citizens also made more use of government services online.



For example, there was a surge in sign-ups to Verify, the government's digital identity used for Universal Credit, pensions and so on. The first eight weeks of lockdown saw 0.75m new users.

⁶ The Office of National Statistics, [Coronavirus and the economic impacts on the UK](#), 8 October 2020

⁷ Bloom et al, "[Does Working from Home Work? Evidence from a Chinese Experiment](#)", *QJE*, February 2015,

⁸ Deloitte, [Working during lockdown](#), May 2020

⁹ ONS, *ibid*

¹⁰ Alan Felstead & Darja Reuschke (WISERD), [Homeworking in the UK: before and during the 2020 lockdown](#), August 2020

¹¹ HM Treasury, [National Infrastructure Strategy](#), November 2020

¹² GDS, [Number of users accessing services using GOV.UK Verify](#) [accessed 8 December 2020]

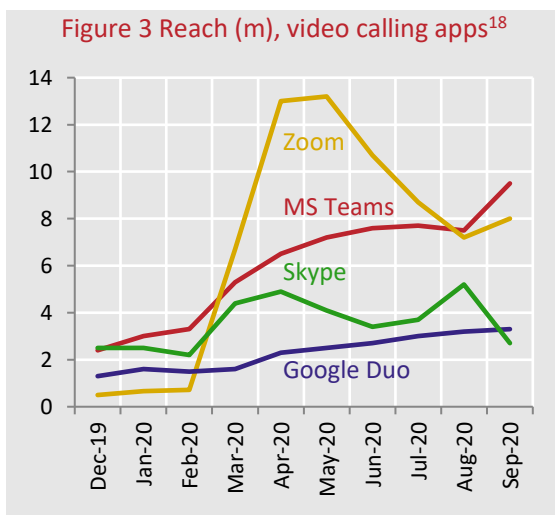
Entertainment

Lock-down has also changed how we entertain ourselves. Growth in subscription video-on-demand services (like Netflix) had been slowing, but 2.7m households took up SVOD in the first three quarters of the year, compared to 1.4m last year.¹³ Broadcaster VOD also surged, with iPlayer usage up 60%.¹⁴ According to Thinkbox, “VOD has undeniably played a more significant role in our TV lives since lockdown – and will inevitably continue to do so moving forwards.”¹⁵

There was also a surge in gaming. At end 2019, the average UK gamer played for 11.6 hours per week, up less than an hour since 2012. However, by Q2 2020 this had jumped to 13.4 hours. The number of gamers also grew, with 31% of those gaming in Q2 saying they’d started in the last 3 months. This has had social benefits – of those playing multiplayer games, 61% report that it helped them feel less isolated.¹⁶ A significant portion of gamers (24%) expect COVID to have a lasting, positive impact on gaming.¹⁷

Video conferencing and calling

The start of lock-down saw a surge in video calling, both for business and socialising.



While Zoom is now off its peak, others continue to grow, and (Skype aside), all are well above their pre-COVID levels. This suggests another permanent shift in behaviour.

Implications for networks and policy

UK broadband has coped well with the COVID crisis, but if there are permanent changes in the way the network is used, then this has implications for network planning and policy.

Reliability

If home-working by knowledge-workers becomes widespread, then home broadband becomes part of the UK’s business infrastructure. Outages wouldn’t just mean a delay in watching the latest box set, but also days of lost work. Reliability and response times will be more important. The deployment of fibre-to-the-home will be helpful here – Openreach reports that fault rates on fibre are half those of copper.¹⁹

Changing customers for home broadband

If an employee’s home broadband needs additional reliability (or possibly speed) for business use, then it would seem natural for employers to pay for or subsidise that connection. At the moment this would be a taxable benefit, but given the societal benefits of home working, it may be better to encourage such provision by employers, not discourage it.

Improved business internet for some employers

Many businesses are increasing their use of cloud services. For them, the quality of connectivity at their own premises is less significant, since home workers can access the services they need directly from the cloud. However, those firms hosting key data or applications on their own premises may need improved connectivity to support home working, since employees will be using the internet to reach that data.

¹³ BARB

¹⁴ BBC, Group Annual Report and Accounts 2019/20, 2 September 2020

¹⁵ Thinkbox, [Lockdown TV](#), 23 June 2020

¹⁶ Ipsos MORI, [Video games in the UK: State of the play and COVID-19](#), 30 July 2020

¹⁷ YouGov, [Gaming and eSports: the next generation](#), 19 October 2020

¹⁸ Comscore, quoted in Ofcom, [Effects of Covid-19 on online consumption in the UK](#), November 2020

¹⁹ Yahoo Finance, [Edited Transcript of BT.A.L earnings conference call or presentation 7-May-20 7:00am GMT](#), 3 June 2020

Pressure on operators' business revenue

An accelerated shift to home working and e-commerce comes at a cost for physical retailers and office premises. Retail is facing a 'tsunami of insolvencies'.²⁰ If premises are empty as a result, there will be reduced business need for broadband. This will reduce providers' revenues, and weaken investment cases for network deployment in relevant neighbourhoods.

Increased importance for mobile networks

During the pandemic, working from home has meant exactly that. However, in time it will come to include 'working from Starbucks'. As firms reduce their office footprint (or do away with premises entirely), an increasing number of meetings, both internal and external, will be in ad hoc locations. Thus out-of-office, out-of-home connectivity provided by mobile networks will be even more important for productivity.

Potential worsening of the digital divide

If working from home becomes a more important aspect of employment, then internet access and digital skills grow even more significant in ensuring equal opportunity.

For example, poorer domestic broadband in rural areas may act as an impediment to employment in those areas, exacerbating the existing brain-drain to cities. Equally, urban disadvantaged areas that cannot support an investment case for quality broadband may also see their employment options worsened.

Nor is this simply a matter of connectivity. A computer and the skills to use it matter also, since homeworking is generally not possible purely on a mobile device. However, of those online in September, 33% went online (outside their place of work) only via a mobile device. This figure rises to 53% of those in social grade E.²¹

While many of these people may have jobs today that are not suited to home working, a growth in

jobs requiring a PC risks being a threat to their future options, rather than a new opportunity.

Conclusion

We are fortunate that the UK had broadband infrastructure in place that enabled the country the work, learn and entertain itself remotely when COVID hit. Many of the new behaviours started during lock-down, such as home working, will become permanent for many.

The government's 2025 ambition, shared by leading broadband infrastructure players, is to meet the future needs of society and the economy by investing in the additional performance and reliability that gigabit-capable broadband can provide. However, the pandemic has accelerated the digitalisation of UK society, bringing an increased urgency to deploy future-proof broadband to support economic recovery. The future is coming sooner than expected.

According to the National Infrastructure Strategy, the "vast majority" of investment required for full fibre broadband and 5G that will underpin these gigabit-capable services will come from the private sector.²² Thus appropriate investment incentives for widespread deployment are both critical and even more urgent as a result of COVID, as is the removal of unnecessary barriers to deployment.²³

Network availability is not the whole story, however. To make the most of an accelerated digital transition, policy makers and employers will need to drive awareness, adoption and usage of improved broadband.²⁴ This will ensure that opportunity is available as widely as possible, not just to those who already have good access, equipment and skills, but also to those across the UK whose lives and livelihoods policymakers are seeking to level-up in the years ahead.

Robert Kenny, December 2020

This paper represents the view of the author only and is not a corporate view of BSG or Communications Chambers

²⁰ Accountancy Age, *"Tsunami of insolvencies" likely as retail faces collapse*, 1 December 2020

²¹ UKOM, *Digital Market Overview*, September 2020

²² HM Treasury, *National Infrastructure Strategy*, November 2020

²³ BSG, *BSG response to the DCMS Select Committee's Call for Evidence: Broadband and the Road to 5G*, 20 April 2020

²⁴ See WIK (for BSG), *Moving to a fibre-enabled UK: International experiences on barriers to gigabit adoption*, 4 June 2020