COVID-19: the role of telecoms policy makers in levelling up

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This article discusses issues that policy makers may choose to focus on as a result of the COVID-19 pandemic, lockdown, and future economic recovery efforts. It is deliberately wide in scope, and is no doubt only a partial summary. The world is badly affected, and new issues arise daily. I have divided telecoms network policy issues into those that I see as being addressable in the medium term and longer term respectively, and address each in turn below.

Medium-term issues

These issues go beyond the immediate short-term responses and represent things that can be achieved with changes to networks and their configuration. Specific items discussed below are:

- a potential conflict between rapid network upgrades and seeking 'trusted' vendors
- assisting in optimising the ICT system as a whole
- prioritisation of what capacity we have.

The conflict between rapid network upgrades and seeking 'trusted' vendors

If we start to run out of network capacity, new technologies may be deployed on existing infrastructure, such as massive MIMO and 10G PON systems. If we want lots of massive MIMO in the short term, we might need to worry less about whether the vendors of such systems are 'trusted'; or we may need to push the trusted vendors harder, or accept slower growth in capacity.

Assisting in optimising the system as a whole

Governments and regulators might have a co-ordination role, because we might be able to make better use of what we have, if we understood better where the bottlenecks or 'pain points' are.

- Operators may seek to reconfigure their mobile networks for more FWA-like traffic or configure their DSL management/vectoring to preserve upstream capabilities to better support video calls.
- End users might buy customer premises equipment (CPE) with better Wi-Fi, or might cable up their home office/kitchen table.

This coordination role could for example take the form of mass-endpoint network performance monitoring that could be correlated with end-user experience on their applications of choice; the resulting data would potentially let operators and end users see which network parameters were correlated with a poor experience (for example, if latency spikes or packet loss resulted in certain types of poor audio quality during Teams calls), and whether these were related to in-home, access network or internet service provider (ISP) performance issues. This is not easy, for several reasons: application performance is a complex mix of factors; existing mass-monitoring solutions tend to neglect in-building factors and measure when the link is not otherwise in use by that end user;

and finally, the resulting performance indications could be contentious if ISPs (or CPE vendors) thought that they were not fair.

Prioritisation of what capacity we have

In EU member states and in some other countries, net neutrality rules make it difficult for ISPs to offer services that prioritise traffic in a targeted way (for example, services that prioritise specific educational or work-related conference calls). But they do allow these things to be done by end users (for example, as features on an end-user's firewall), and most CPE already have simple web interfaces.

Obviously policy makers could change their stance on net neutrality, although the merits of such change are debatable and would take years to achieve. But even without doing so, governments and regulators could help users to help themselves configure their in-home devices (or run new services on their home devices) to better manage the conflict between the Zoom lessons, the Teams work calls and the OneDrive synchronisation. Some kind of 'pump-priming' investment in upgrading capabilities on mass-market CPE or providing additional legal clarity regarding whether ISPs could assist in managing such solutions on behalf of end users might help here.

Longer-term issues

In the longer term, it is likely that there will be an increased focus on the following existing areas of network-related public policy:

- universal service for broadband
- system resilience of critical infrastructure
- competition policy in telecoms.

Universal service for broadband that is 'good enough'

First, the case for high-quality broadband for all is stronger than before. There are widespread benefits if more people can work from home or attend online lessons, for example. These benefits do not just flow to those who can themselves work from home – we are all in this together (that is, there are externalities), which is the guiding principle of a funded universal service obligation (USO).

Second, the required standard to be 'good enough' may have changed, assuming that several people in the same household are trying to work or learn simultaneously. Until now, the ability to support one channel of streaming video of a quality roughly equivalent to terrestrial DTT has been seen by many policy makers as the threshold for 'acceptable' broadband speeds in rural areas (for example, in the UK). Now, teleconferencing (or to some extent remote login to centralised, virtualised IT) may add new constraints in terms of higher speeds, upstream requirements and desire for lower latency.

This may favour FTTH or 5G FWA and may require larger-scale use of subsidies to provide FTTH in commercially uneconomic rural areas. Ireland decided to do this even before the impact of COVID-19. During the coming recession, public investment in infrastructure could provide local employment and build FTTH in uneconomic areas, possibly in co-ordination with 'green' investment, for example in reducing the need for commuter travel.

System resilience of critical infrastructure

The ICT system has shown that it has a critical role to play, and will need to remain operational in an extended COVID-19 crisis and in other kinds of crisis.

A major cyber attack similar to WannaCry or a solar storm of a similar scale to the Carrington event of 1859 could cause major damage to the power and ICT networks that would render a pandemic lockdown even more crippling and/or disable critical health services at the same time, greatly increasing danger to life. In turn, ICT will need to be strengthened, which is likely to mean more regulatory intervention regarding cyber resilience, diversity of routing, diversity of supply, and operator interconnectivity, and some resistance from operators that do not want to pass these higher costs on to customers at a time when many are losing their jobs or are worried about finances. Capitalising these costs and spreading them over time may be important.

We can expect a renewed debate about whether public services should be provided using commercial networks (and hence where the available spectrum should be used), although it is not obvious that COVID-19 has changed the merits of either argument for or against reserved spectrum for public services.

Working from home and e-learning makes home networking more important, which might encourage regulators to allocate more spectrum for Wi-Fi or similar uses (although 5G FWA may also have a crucial role in improving the ability to work from home in rural areas, at least until the FTTH investment can be delivered).

Some operators are already beginning to think about what they want from policy makers so that these network improvements are as cheap as possible to deliver (for example, see recent Vodafone comments about planning and permits).

In countries where the retirement of the highly resilient, but costly, PSTN is not planned for a number of years, another relevant point is whether the industry can bring forward this switch off and replace it with voice over broadband.

Do we need to think about competition policy in telecoms?

A post-lockdown economic crisis and a need for more network coverage and more resilience will potentially be seen conflicting with the desire to protect competition.

In theory, resilience is improved by parallel networks (we can use mobile if fixed fails) – but in practice there are ways in which inter-operator interconnection can be a weak point in such systems (for example, if it is underdimensioned or misconfigured in ways that are not exposed except at times of crisis). Fixing these weaknesses may require government or regulatory supervision including, for example, audits of network configuration, paper exercises or simulations to test the impact of loss of specific interconnection points; one difficulty is that there is no ‘test rig’ for the national communications infrastructure and it is hard to justify ‘live’ testing when the communications network may be carrying important data or calls at any time of the day or night.

There is a balance to be struck between static and dynamic efficiency. Static efficiency would favour having the lowest total cost (and hence, a single network); dynamic efficiency favours multiple networks and hence (to a certain extent) infrastructure competition even if there is some duplication of costs (that is, static inefficiency). This can be seen in the policy conflict between multiple independent networks, or multiple operators on one physical infrastructure, (for example, with regulated wholesale access, or access to dark fibre).

The model of a regulated fibre utility (based on local franchises) may deliver higher coverage than the European model where there can be no franchises, leading to the possibility (and reality in some places) of direct parallel infrastructure competition. Even if policy stances remain unchanged as a result of COVID-19, we will start to get answers to these questions over the next few years, because we have 'natural experiments' arising across the EU, where local markets for FTTH are radically different in different member states, and if we compare the EU to (say) the broadband networks of New Zealand and Australia, each of which took radically different policy options as regards monopoly supply and the nature of state involvement in funding FTTH deployment.

These longer-term debates are just beginning and are likely to form a significant backdrop to the rebuilding of the economy that we will need to do in the decade ahead. Since the end of the second World War only 75 years ago, the current generation (with our parents and grandparents) have rebuilt a war-ravaged world, and lived through an age of relative material wealth and substantially improved health. We can do so again. COVID-19 has brought a lot of suffering, and there will be more suffering yet. We owe a huge debt to the caring professions. But until we can meet face to face and travel freely again, we can communicate, we can build a better network together, and we can dream of a better future.