ALL CHANGE TO MOBILE

A global pivot towards mobile broadband and applications is reshaping the market – and regulation. **BRIAN WILLIAMSON** charts a course in the light of new policy

Six years ago Apple launched the iPhone 3G and the apps store and Google launched the Android marketplace. Six years from now the vast majority of broadband connections globally will use mobile networks and the majority of people who use a mobile phone will have a smartphone.[1]

Much of the growth in mobile connectivity will be in developing countries. But this has implications for developed countries too. When most connections are mobile, global application developers will develop for mobile first, as Facebook and others are already doing. These developers will innovate to reduce bandwidth demand so that applications use is affordable. For example:[2]

"It seems reasonable to expect that over the next few years we can deliver many of the same basic services using at least ten times less data than we're using today."
Mark Zuckerberg, September 2013

By encouraging development of bandwidth efficient apps, the pivot towards mobile may alter demand for fixed broadband in general and for fibre in particular. On the one hand fibre is ideal for carrying high volumes of traffic to and from mobile base stations. Here fibre complements wireless. On the other hand applications that are more bandwidth efficient may cut demand for high-capacity, high-speed access links to every household. Here wireless substitutes for fixed. So we may see more fibre but less fixed access.

> **"To reposition policy to capitalise on mobile and apps we may first have to let go of our 'cargo cult' mentality with respect to speed, and fibre in particular."**

Complementing growth in mobile devices, apps stores have lowered barriers to entry for software developers, facilitated app creation, discovery and distribution, and dramatically improved software availability and lowered costs for consumers.[3] This has created a virtuous circle between applications, devices and demand for ubiquitous high-quality connectivity.

In the communications sector rapid adoption of smartphones and apps has facilitated disintermediation of legacy voice and text services by so called over-the-top (OTT) applications such as WhatsApp, Skype and WeChat. OTT is also starting to impact radio and TV. OTT is benefiting consumers while disrupting legacy services.

OTT is also empowering consumers to unbundle producer bundles, from an individual music track versus an album to the separation of messaging applications and broadband access versus integrated network-service offers. It is therefore unclear whether there will be continued growth in conventional service bundles.

Some network operators, particularly in Europe, have been vocal in arguing that OTT is free riding on their networks while also undermining legacy service revenues. It has been argued that the value chain is 'broken' and a fundamental change is required to return the industry to health. In Europe, overall telecoms revenues have declined, though in other regions they have grown.

However, OTT services increase demand for ubiquitous higher quality data access for consumers – demand that network operators should be able to monetise via their existing customer relationships.

So why has the reaction been negative and why are outcomes different in different regions? Two things may help explain the apparent paradox:

- Operators in Europe may be more dependent on legacy voice and text revenues than, for example, their US counterparts, which have offered large 'bucket' plans for some time and are less dependent on termination and roaming charges. The required rebalancing from service to data revenues may therefore be greater in Europe.
- Regulation constrains opportunities for service price adjustment and differentiation in Europe whereas in the US operators are freer to adapt and experiment. Greater pricing freedom is therefore part of the solution.

Responding to greater adjustment pressure and constraints on adjustment, operators in Europe

have tended to see OTT as a problem rather than an opportunity, and tend to see the extended telco-internet value chain as engaged in a zero sum game. However, this view appears mistaken when the redistribution of value between OTT, telcos and consumers is considered:[4]

"The most disruptive effect of the internet is that it involves a rapid transfer of value not between producers like telecoms companies and internet companies, but from producers as a whole to consumers as a whole."
Richard Feasey, May 2013

It is therefore to their existing customers that network operators must turn to restore revenue growth and investment, offering and charging for the higher quality access consumers increasingly demand. Growth in OTT, and corresponding data growth, is an opportunity rather than a threat – provided operators adjust their business models to focus on access.

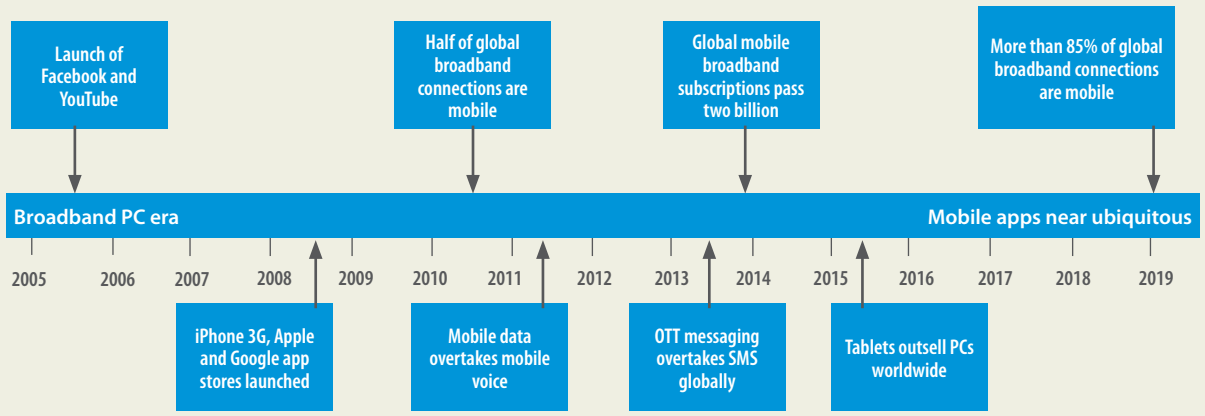
It would therefore be a mistake to undermine the internet norm of 'innovation without permission' that has generated so much innovation and growth in applications. Instead the principle of innovation without permission should be extended to network services. This requires a reduction in regulation where regulation constrains the market unduly, with any remaining regulation narrowly focused on genuine bottlenecks.

POLICY OPPORTUNITIES AND CHALLENGES

To reposition policy to capitalise on the opportunity from mobile and apps we may first have to let go of our 'cargo cult' [5] mentality with respect to speed, and fibre in particular.

The 2010 US National Broadband Plan would appear to be an early exception to the tendency

The global pivot to mobile



to focus first and foremost on fixed access and speed, with significant weight given to mobile broadband and without overcommitting to fixed access speeds. Speed is good, but not at any price, and fibre to the premise is slow to deploy outside of city states (ask an Australian).

Fibre will be extended, but where copper-based fixed access is already established a lower cost and arguably sufficiently 'future proof'[6] route to fast broadband may be hybrid solutions (VDSL, vectoring and potentially G.Fast). Fibre to the premise does not, in any case, offer an end-to-end solution with the last few metres served by copper and WiFi.

Rapid growth of the mobile ecosystem implies that it brings substantial benefits to consumers, businesses and the economy; in terms of its potential this transformation has barely begun. When most people have smart mobile devices, when connectivity is fast and near ubiquitous and when apps fill far more niches and are smarter, the impact will be far greater. It will also touch the offline world in a way that fixed never could, since we carry mobile devices with us.

Mobile will be the first, and potentially only, form of broadband access available to many in developing countries, while less populated areas of developed countries may also migrate to mobile only (operators in the US are now proposing a reduction in fixed services in less densely populated areas). One of the key challenges in countries without developed fixed access is to ensure availability of lower (UHF) frequencies with better propagation characteristics to facilitate increased mobile coverage at low cost.

While broadband availability is the first priority in developing countries, broadband universality and internet adoption is a priority in developed countries. The proportion of people who do not use the internet where broadband is available is significant and falling only slowly. In Europe 25% of surveyed adults in 2012 had not used the internet in the past three months, in the US, 15% had not used the internet while in South Korea 22% had not used it. In Europe there is a pronounced north-south divide in terms of internet use.

A key challenge in developed countries is therefore how to increase internet adoption and use. Reorienting digital inclusion initiatives away from the PC and towards tablets, smartphones and mobile connectivity may reduce skill, cost and relevance barriers to adoption.

In relation to OTT a key question is whether regulation is 'levelled up' to the levels applying to legacy services or 'levelled down' to minimal levels typically applying to online. Given that OTT has increased competition in the telecoms services market, and may do the same in the radio and TV markets, there are sound grounds for levelling down.

> **"The debate underway in Europe is relevant elsewhere since the same technology and market forces are at work everywhere."**

The alternative (levelling up) would also risk stifling the innovation that has characterised online to date. In some instances the right response may not be to attempt to level the playing field, namely if technology differences require a different approach. Either way, the starting point for review should not be a presumption that the existing approach is the right one.

Changes in the communications market also have implications for the geographic scope of competition and potentially for the scope of regulation and institutional design. Whereas, previously, national network operators offered national services, network evolution and competition is now more local while applications and services are global. One option would be to focus sector-specific telecoms regulation on access bottlenecks alone, while leaving services to general competition and consumer law. TV and radio broadcasting and content policy – typically inextricably linked – will also need to adapt.

THE EUROPEAN POLICY RESPONSE – IN THREE EASY STEPS

The European Commission has responded to some of the emerging challenges and has announced its intention to address others, yet it does not have the same powers as national governments and regulators. A delicate dance necessarily ensues.

The debate underway in Europe is relevant elsewhere since the same technology and market

forces are at work everywhere. The European debate is particularly relevant in those countries that have adopted regulatory frameworks modelled on that in Europe.

Here we consider three elements of the European response to change in relation to telecommunications:[7]

- The costing and non-discrimination recommendation, which was adopted in September 2013. Don't let the name fool you; in spirit this guidance recommends regulated copper price stability and fibre pricing freedom for operators found to have market power.
- The single market proposals, also published in September 2013, which aim to create scale and reduce internal barriers to trade in the communications market in Europe.
- The review of 'relevant markets', namely those markets defined as susceptible to ex-ante regulation, which is currently underway.

The first of these – the recommendation – recognises that continued erosion of, and uncertainty regarding, copper network revenues is harmful to investment. It also recognises that pricing freedom and scope for service-price differentiation for next-generation broadband is desirable, subject to sufficient competitive constraint from competing platforms (including any parallel ADSL regulated 'anchor product' and cable and/or wireless access).[8] Non-discriminatory wholesale access and retail service replicability are also conditions of pricing freedom. This approach represents an intermediate position between full ex-ante regulation and reliance on ex-post competition law alone.

The package of single market proposals includes measures to progressively eliminate roaming premiums, promote net neutrality and more harmonised allocation of spectrum for mobile, and provide for a standardised wholesale fixed access product. The package is contentious, particularly in so far as it would involve a shift in power to Brussels and away from national governments and regulators. We note also that the net neutrality measure is intended to allow service price differentiation, provided it is competitively neutral.

Finally, the review of relevant markets susceptible to ex-ante regulation is required following the previous review in 2007. The most obvious candidate for removal from the list of relevant markets is fixed voice access and origination services, which now compete with mobile and with OTT services provided over broadband.

There is also scope, through new guidance, to reinforce analysis that focuses first and foremost on retail market competition. At present, there is a tendency to focus on a specific and technology specific wholesale access market, for example on unbundled local copper loops, and to conclude that the only provider of local loops has significant market power. A focus on the retail market might identify a wider set of substitutes, for example, including mobile broadband and cable retail services. New guidance might also aim to discourage regulation at multiple points in the wholesale access value chain, which is complex to administer and may prevent efficient service-price differentiation.

CHALLENGES THAT REMAIN TO BE ADDRESSED

There are three high-level challenges and accompanying opportunities:

- Allowing destruction alongside creation as part of a process of 'creative destruction'
- Providing for commitment while also allowing adaptation to changing circumstances
- Ensuring innovation in the online-to-offline era.

Allowing destruction alongside creation

Innovation is the engine of growth, but it is also disruptive. Rules established in relation to existing markets – which were sound at the time they were introduced – may become a barrier to beneficial change. An example in telecoms is local loop unbundling. This facilitated service innovation, including accelerated deployment of ADSL2+. However, having facilitated innovation the businesses which now depend on access to local loops can be expected to resist withdrawal of local loops, and with it a move to fibre or to mobile only services. These are precisely the transitions planned by operators in the US.

> **"The FCC is also considering the transition to all-IP networks, which will involve retiring legacy services."**

Operators in the US and the FCC are also actively considering the transition to all-IP networks.[9] This transition will involve the retirement of legacy services, but also a process to identify those elements of service that customers expect and which should be preserved. The FCC proposes a diverse set of experiments to better understand the impact and to identify the legal, policy and technical challenges that must be addressed to support transition.

While 'technology neutrality' is not always straightforward to implement, it is clear that commercial or consumer rights defined in terms of a particular technology (eg. copper loops) may become a barrier to change. Further, politicians and policymakers have to champion innovation if they want to see it realised – not necessarily actively in terms of funding or intervention, but by explaining why innovation is worthwhile and by removing rather than maintaining barriers to change.

Providing for commitment while also allowing for adaptation

The regulatory commitment problem is likely to become more prominent in Europe now that the prospect of fibre pricing flexibility has increased with the publication of the Commission recommendation. If fibre pricing freedom is offered, investors will want to know how long it might last and what will happen if it ends – will the regulator be tempted to expropriate the value of their (now sunk) fibre investment?

The commitment problem is also illustrated in the spectrum area, where UK regulator, Ofcom, has proposed recovering the 'full market value' of spectrum via annual fees.[10] These fees would apply to both spectrum not acquired at auction and to spectrum purchased at auction at the end of the initial 20 year licence period (within which fees do not apply). This would open up potential for ex-post expropriation via extraction of value, potentially including value created by operators through investment in infrastructure and brand.

Both failure to commit and failure to adapt can be costly. Commitment is important to prevent expropriation of value ex-post in circumstances where investment and costly innovation is necessary, and one party has power over another. The ability to adapt is also important as circumstances change and policy needs to adapt or be designed in a way that permits the market to adapt. Both commercial contracts and monetary policy illustrate how it might be possible to achieve commitment and scope to adapt. Contracts may involve contingent clauses and mechanisms to address changes in circumstances or disputes. Central bankers seek to reassure markets that they are committed to low inflation, but also seek to signal the circumstances under which monetary policy will adapt.

These examples show that one approach to reconciling adaptability and commitment is a contingent contract where the set of objectives and rules include the terms and mechanisms under which they might change. Another approach is to keep options open before making an irreversible decision, for example waiting to see how technologies such as VDSL and vectoring develop before committing to a national fibre plan or overly ambitious broadband targets.

Ensuring innovation in the online-to-offline era

The online-to-offline era refers to the development of services which involve a blurring of online and offline, typically facilitated by mobile since mobile is carried by consumers and allows more direct interaction with offline services.[11] Examples of online-to-offline services are Hailo and Uber for ordering a taxi or private car, sharing your location with the driver and paying for the service.[12]

The economic and commercial opportunity here is large simply because offline dominates economic activity – many things are and will remain physical rather than virtual. However, the way in which an offline service is delivered may improve if an element of the online world is integrated into the service. The issues here are broader than communications policy. However, the online-to-offline era will be a key driver of demand for connectivity, and lessons from disruption of the communications sector by online are relevant.

Mobile could facilitate a rapid expansion of online-to-offline services, but existing regulation may be an inappropriate barrier to innovation and change. The challenge, as has arisen in the communications sector, is to reconsider what form of regulation is appropriate while avoiding capture by legacy interests.

> **A systematic re-examination of regulation of every vertical sector in the economy is required to facilitate mobile app innovation.**

Those nations and regions that anticipate and are quick to adapt existing policy and regulation to the emerging reality will reap the rewards. In the US we have already seen initiatives to rethink regulation in relation to health apps,[13] the taxi and car rental industries[14] and short-term apartment rental markets.

A systematic re-examination of regulation of every vertical sector in the economy is required to facilitate mobile app innovation, focusing on adapting the approach to ensure that it is open to online-to-offline innovation. Policymakers and regulators need to ask what is required to facilitate innovation via mobile while also ensuring that necessary protections remain in place. In some cases, as in telecoms services, the answer may be that facilitating increased competition removes the need for continued regulation. Transformation of the offline economy via complementary use of online will be a key driver of demand for communications services, but success depends on fit for purpose reforms beyond the communications sector.

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