



Arqiva submission to Ofcom's Call for Inputs on Broadband Universal Service Obligation

About Arqiva

Arqiva is a communications infrastructure and media services company operating at the heart of the mobile and broadcast communications industry. Arqiva provides infrastructure for television, radio, mobile and other wireless communication in the UK.

Arqiva operates shared radio site assets throughout the UK, including masts from under 30 to over 300 metres tall. We have worked with the mobile industry over two decades to deliver mobile services to consumers with a significant presence in suburban and rural areas. Our portfolio includes over 8,600 active, and more than 16,500 marketable sites, including radio and television broadcast sites, BT telephone exchange rooftops and use of National Grid pylons.

Arqiva enables the Airwave emergency services network in remote areas through c1,000 of our sites. We are working with DCMS to build new shared sites for villages in 'not-spots' as part of the Mobile Infrastructure Programme (MIP). We also own and operate 50 In-Building Systems to extend the MNOs' coverage and capacity into challenging environments such as Canary Wharf and the ExCel Centre. We are one of the UK's largest public WiFi providers, enabling us to offer unique propositions for venue WiFi and small cell networks, for example at Heathrow airport or in Central London.

Arqiva is building a national Internet of Things ("IoT") network, starting with 10 of the UK's largest cities. Our smart metering service, connecting 10 million homes using long-range radio technology, will be one of the UK's largest machine-to-machine deployments.

Arqiva is a founder member and shareholder of Freeview. We broadcast all eight Freeview multiplexes, are the licensed operator of four of them as well as owning Connect TV - the first company to launch a live IP streaming channel on Freeview. Arqiva is the licensed operator of both national commercial DAB digital radio multiplexes.

Arqiva is a major player in the UK's satellite industry, operating over 80 antennas to geostationary satellites, and providing Telemetry, Tracking and Command support services to some of the leading satellite operators. We are a major provider of permanent satellite services to both Freesat and Sky customers. Arqiva also provides global satellite based services to the broadcast, communications, security, oil & gas and exploration sectors.

Our major customers include EE, H3G/Three, Telefónica/O2, Vodafone, BBC, ITV, Channel 4, Five, Sky, Global Radio, Airwave, Heathrow and Whitbread/Premier Inn.

Arqiva is owned by a consortium of long-term investors and has its headquarters in Hampshire, with major UK offices in London, Buckinghamshire and Yorkshire.

Overview

Arqiva is the UK's largest independent provider of mobile network assets. As such we offer a specific insight into the potential role that this sector could play in expanding broadband coverage. In particular, we will seek to illustrate in this submission that the infrastructure underpinning mobile broadband services could be rolled out in a way that minimises costs for operators, thereby enabling services to end users to be provided more cost effectively.

We are supportive of the goal of government and Ofcom in trying to make broadband available to everyone who wants it. Access to fast, affordable internet services is an essential tool to being able to participate fully in modern life and too many people in the UK are still being left behind. Delivering this may require proportionate and targeted interventions by government and Ofcom.

A number of key criteria are delivered through a formal USO mechanism including technology neutrality, the ideas of affordability and the addressing of market failures. Even if the government ultimately chooses to deliver its outcomes using an alternative policy or regulatory interventions it is important that these criteria are not lost.

Any USO needs to be seen in the context of the wider set of interventions that the government is making to support connectivity in the UK including planning reforms and reforms of the Electronic Communications Code. All of these measures will take friction out of the market and help communications providers to roll out services to consumers.

Our interest in this Call for Inputs lies principally with two key elements identified by Ofcom as being central to the design of a broadband USO, namely:

- **Ensuring the USO is affordable**

In that respect, we offer insight into the role that mobile plays in minimising costs and delivering more cost effective solutions for consumers; and

- **Minimising market distortions**

We also set out how greater mobile coverage can be met, in part, by market-based solutions. This would be the case where independent mobile infrastructure provision leads to extended coverage as a result of costs of deployment being reduced.

We otherwise offer broad support for the high level principles that guide Ofcom's approach to this important issue. In particular:

- A variety of technologies could deliver download speeds of 10 Mbit/s and that, accordingly, the most appropriate technology should be used to achieve the goals of the USO in the most efficient way;
- Overall costs of the USO should be efficient and proportionate; and
- Sharing network infrastructure or building on existing infrastructure is an important consideration in minimising the costs of important inputs to USO service delivery.

This submission sets out how independent mobile infrastructure provision can deliver high speed data services in a cost effective way, including to areas otherwise challenging to cover. We note that as the cost of fixed line solutions rises in challenge areas, the lower costs of mobile broadband networks will become an increasingly viable solution for policy makers.

More broadly, however, we understand that Ofcom will need to make a judgement as to what outcomes the USO will be seeking to achieve. In particular, whether the 10 Mbit/s USO will serve as a “safety net” for all consumers, guaranteeing a minimum download speed, or whether it will be a driver for growth and commit to guarantees on reliability to ensure that certain services can be provided. Given that one of the drivers for data demand growth over the coming years will be video, we consider that the broader UK infrastructure environment is critical to the effectiveness of any USO.

Demand for linear TV is expected to remain resilient for the foreseeable future at the current average of 4 hours viewing per person per day¹. On demand viewing has also increased, though this remains at a comparatively modest percentage of total viewing. Delivery of this high capacity content is principally over broadcast networks – both terrestrial and satellite – with the significant benefit that there is no contention between users of these services. This clearly has additional indirect benefits for broadband delivery which may otherwise be required to provide linear video services to mass audiences. As it stands, even with multi-cast, contention between very significant numbers of users of this service would create a technical challenge for the broadband. Therefore, if a USO guaranteed delivery of linear video content it is unclear how could be secured in an affordable way.

As a result, the hybrid strategy being followed by the DTT sector (through both Freeview Play and YouView) should be a fundamental element of any effective USO. Mass audience linear content is most efficiently delivered via broadcast technologies – on demand via broadband.

¹ As set out in Ofcom's August 2015, Communications Market Report

Independent mobile infrastructure provision can contribute to an affordable broadband USO

Network operators rely on access to wireless infrastructure assets to provide their services. While much policy focus is typically given to the requirements of Mobile Network Operators (MNOs), this infrastructure is also crucial to delivering other services such as fixed-wireless broadband, radio and TV broadcast, emergency services and machine-to-machine communications.

Increasingly, MNOs have sought to access infrastructure jointly in sharing arrangements. They have done this in the UK by setting up joint ventures (EE and H3G setting up MBNL and Vodafone and Telefónica/O2 setting up CTIL and Beacon) as well as making extensive use of Independent Infrastructure Providers (IIPs), whose business model is based on allowing as wide as possible access to their assets.

In the UK, the MNOs own and operate the majority of passive mobile assets. However the IIPs constitute a small but significant part of the market as a whole for the provision of passive assets. There are difficulties in determining what the precise market share is, but a reasonable Arqiva assessment suggests that in the region of 30-40% of passive assets are provided by IIPs. This contrasts with the United States, where EY has estimated that 84% of market share is accounted for by independent providers.

The contribution that IIPs bring to the mobile ecosystem is, therefore, significant. It ensures that greater numbers of consumers enjoy the social and economic benefits of mobile communications. In that respect, we note that many IIP sites are based in rural areas, delivering those benefits to consumers who may otherwise not receive them.

The importance of IIPs is illustrated by H3G's entry into the UK MNO market as the fifth operator in 2003. Due to Arqiva's commercial incentive to share masts, we were a key partner in a fast and cost effective rollout so H3G could rapidly launch its own 3G network.

Wireless infrastructure sharing has grown over the past few years

Infrastructure sharing has become an increasingly attractive option for a number of reasons, including:

- It facilitates faster roll-out of services as it reduces the potential for delays associated with acquisition, design and build of suitable sites;
- Costs to industry can be significantly reduced if more efficient use is made of existing infrastructure. Moreover, increasing utilisation rates of each tower ensures that the unit costs for network operators can be reduced;
- Co-locating equipment allows for the use of joint backhaul to the core network, further reducing cost to MNOs; and
- Using existing infrastructure can promote greater coverage for more operators sharing masts.

Additionally, the 2003 Communications Act also places an obligation on Code Operators to maximise the use of existing infrastructure. This is, in part, to avoid a proliferation of structures which could cause a negative impact on the environment and/or local communities.

In the UK, the nature of infrastructure sharing has evolved over the last decade with a series of initiatives between MNOs as well as in response to the changing nature of the market itself (driven primarily by merger activity).

Independent infrastructure provision is a cost-effective solution to deploying mobile services

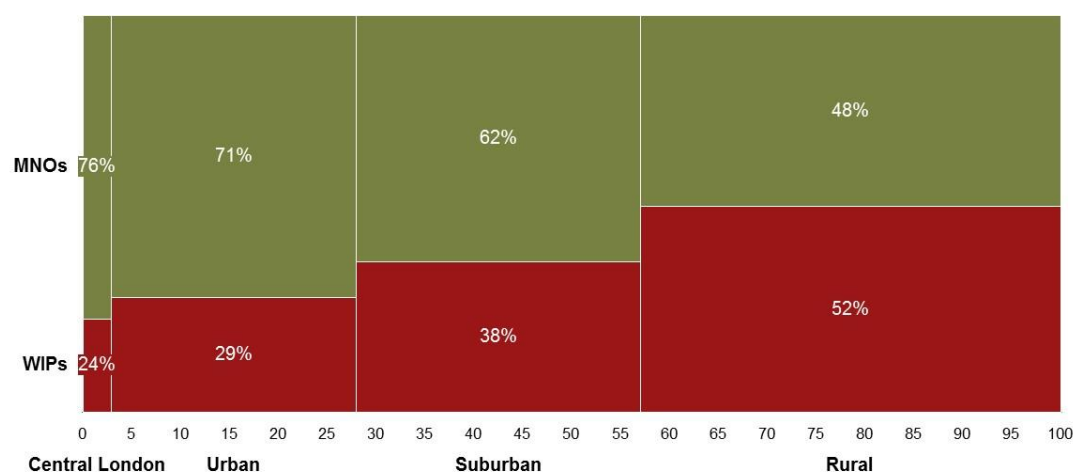
Independent infrastructure providers have a commercial incentive to make their assets available to all wireless network operators. Accordingly, the average number of sharers on each MNOs' mast compared with that of the IIPs shows that the latter achieve significantly higher utilisation rates through providing access to multiple operators.

As well as competition from within the IIP sector, IIPs face competition from self-providing network passive asset holders such as CTIL and MBNL. This acts as a competitive constraint on their ability to arbitrarily raise prices to MNOs.

As a result of these factors, the otherwise significant fixed costs involved in constructing and maintaining passive infrastructure assets are reduced as more efficient use is made of them. Increasing utilisation rates of infrastructure ensures that the unit costs for MNOs can be lower. This makes it cost effective to improve service coverage, including to areas where it may be unprofitable for them to invest in additional own assets.

This is illustrated by the diagram below:

Figure 1: Breakdown of sites by player type and location



Source: AT Kearney

This diagram shows that despite IIPs accounting for just c34% of the total UK macro sites, they provide more than half of sites based in rural areas. This is consistent with the benefits

we would expect to see from maximising sharing opportunities, particularly where costs of site deployment would otherwise be expected to be high.

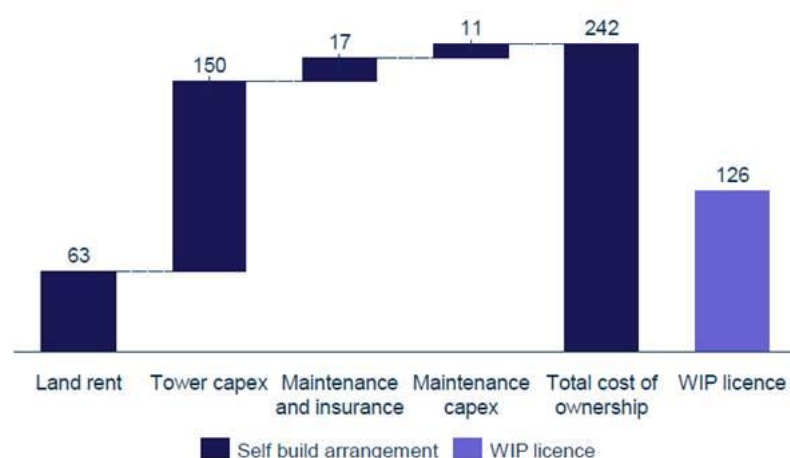
This matters in the context of Ofcom's USO consultation because, as set out in paragraph 1.12:

- *1.5m of the 2.4m households in the UK who cannot receive broadband speeds of greater than 10 Mbit/s are in rural areas; and*
- *These households are found disproportionately in the devolved UK Nations.*

By reducing the pace at which new masts need to be constructed it enables the faster rollout of wireless broadband network expansion and upgrade. The higher rate of co-location achieved by IIPs reduces the need to build more masts, speeds up deployment and reduces MNO lifecycle costs. IIPs are also able to reduce operating costs and lower cost of capital. This is as a result of the ownership and operation of masts being their core business.

The difference in costs for an IIP operating masts compared to a self-provider can be shown below:

Figure 5.6: Total cost of ownership: comparison of self-build tower vs WIP licence model (GBP thousand per site in NPV terms) [Source: Industry submissions]



Source: Financial Impact of Electronic Communications Code Changes, Analysys Mason, May 2016

This report, published in May 2016, was commissioned by the Department for Culture Media and Sport (DCMS) to inform its policy approach to reforming the Electronic Communications Code. That report was accompanied by DCMS implicitly supporting the future development of the independent infrastructure sector:

we do not want to disrupt market incentives for investment in passive infrastructure by establishing a legal framework to allow compulsory access and thereby subject the market to further regulation²

Cost effective infrastructure solutions can help underpin an affordable USO

Ofcom seeks details on how much cost savings could be derived from different supply side assumptions. Such a figure would rely to a great extent on the precise evolution and make-up of the network at the time. It would also depend somewhat on the mobile technology being adopted to meet the UK's coverage ambitions. For example, we consider there may be significant merit in exploring the potential of fixed wireless access solutions for those homes in challenge which specifically struggle to receive sufficiently fast speeds on an indoor basis.

Finally, we note that the ongoing reform of the Electronic Communications Code and the other policy changes in areas such as planning will improve the prospects for more cost effective mobile broadband provision for all mobile infrastructure providers, thus making a mobile contribution to USO provision an increasingly viable alternative to fixed. Ofcom and the government should look at removing further burdens, in particular in planning, to help the market to roll out services to consumers.

² A New Electronic Communications Code, DCMS, May 2016