

Designing the Broadband USO

Specification and scope of the USO

Minimum technical requirements

10 Mbps has been proposed as the appropriate level for the USO. This has a reasonable rationale, and seems an appropriate current definition of “functional internet access”.

However, this need not be the specification of the USO in terms of the services actually provided.

We should encourage widespread availability of superfast (and ultrafast) broadband at 30 Mbps and higher. The USO has the potential to provide significant support for this aim. Although the “trigger level” for the USO to be available to support a particular connection may be 10 Mbps (or whatever is deemed over time to be “functional internet access”) it should support the provision of a range of possible services – certainly including superfast, ideally including ultrafast.

Our aim should not be to fund the construction of an infrastructure capable of delivering basic internet access, but to use the basic need for “functional internet access” to support the universal delivery of superfast broadband.

The “trigger level” for the USO to be available must be simple and robust. 10 Mbps is simple, and easily measurable. Any other characteristics should be easily measurable.

Providing one single measurement below 10 Mbps should not be sufficient. A number of different measures throughout the day/week should be required to demonstrate that it is a persistent issue. It may be necessary (and desirable) to establish a suitable measurement capability. It is relatively easy to envisage the development of a web-based system that can be accessed and will automatically undertake a series of technical measures over a period of time (perhaps a week), and present an overall assessment of the condition of the connection.

Even where a problem is identified, it would still seem inappropriate to use public money to provide only a moderate increase in performance simply because one service was below a certain threshold, and another marginally above. The replacement service should provide a “material improvement”. While this may not need to be the “step change” improvement required in other initiatives, it still should ensure a practical improvement in user experience.

Ensuring the USO is affordable

Affordability of the USO will be determined by the targeting of the scheme to an appropriate number of properties; the cost of the connections where it is appropriate; and the need for support to address the level of availability of appropriate infrastructure without the use of the USO.

The targeting of the scheme will be determined by the appropriate technical conditions for the “trigger level”.

The need for USO support is determined by the success of infrastructure delivery through commercial build and other part-funded delivery programmes (eg the BDUK programmes) in advance of the commencement of the USO. Hence, it is critical that the USO complements, and does not compromise, commercial builds and other funding programmes. There is evidence that this is already becoming a concern. In Northern Ireland there is a view that funding for superfast broadband should be halted until the USO fund becomes available.

The potential impact of the USO can be considered in a specific illustration:

If a fixed wireless provider is considering providing service to an area they will determine the infrastructure build appropriate to serve that area. This will allow some properties to connect directly, others will require more expensive “in-fill” connections. Properties requiring “in-fill” may be appropriate for support through the USO, when available. If the service provider thinks that another service provider will be funded under the USO to over-build their network, then they may decide not to bother. However, if they are able to access USO funding then this may strengthen their investment decision. Conversely, if they think they may be able to access USO funding where their infrastructure is weak, they may decide to install only the basic infrastructure to “stake their claim” and rely on the USO funding to complete.

To avoid the first issue (holding back all investment) it is important that local providers are able to claim USO funding for delivering services in their area.

To avoid the second (limiting the scope of investment) it is important that competition is maintained. The aim should be to allow and encourage multiple providers of USO services in each local area.

As competition is encouraged in the provision of services under the USO, it may also be possible to support greater affordability through requiring a financial contribution from the end user. For example, the end user may be required to pay the equivalent of the standard connection charges in their area; then they may be required to pay 10% for the next £3,000 of connection cost; then they pay all costs over this level. The payment of the standard connection charges avoids distorting competition. The 10% (or similar) contribution would encourage users to value affordability (rather than simply accepting that someone else was paying). The need to pay all costs over the next £3,000 will encourage the most hard-to-reach to consider the use of satellite services to meet their needs, or to find alternative ways to limit costs.

Social tariff

I think that a social tariff for broadband should be treated with caution. There is already a level of cynicism in areas of the media that “scroungers” are able to access better services than “hard-working-families”. Providing funding to support the most needy to access broadband services may be beneficial, but I suggest that it may be better maintained as an

issue separate from the USO. I believe the USO should focus only on the technical/economic issues of ensuring the availability of infrastructure to deliver functional internet access.

Demand for the USO

Demand for the USO can be expected to be sustained over some considerable time – as more and more people identify the need for improved internet access.

Ensuring that it is complementary to other delivery programmes is important to ensure there is no “initial rush”. The USO should aim to “pick up where other programmes end”. Ideally, the USO should be slightly less attractive than other earlier funding schemes in place. Current funding programmes (including commercial schemes) should encourage early take-up to improve the commercial proposition of the infrastructure investment. The USO should aim to support people in accessing appropriate infrastructure where they are not initially commercially viable (including them would make the overall investment worse, rather than better). It is important that users prefer to access earlier funding mechanisms, rather than “wait for the USO funding”.

Cost, proportionality and efficiency of the USO

Cost evidence

Different technologies have different inherent costs, but the comparative costs vary from location to location. For example, the rollout of FTTC infrastructure has achieved good value for money overall, and this infrastructure may be able to support further extension for delivery of services against the USO. New VDSL technologies are becoming available that will allow greater reach from the cabinet (although possibly not at superfast speeds). Where the recipient values the range of ISP services available from the BT infrastructure, this may be a suitable option.

However, in many areas that include remote rural locations, there is likely to be a mix of FTTC and fixed wireless services. The properties requiring support from the USO will be beyond the direct reach of either infrastructure – but it is possible that USO funding could be used to enable a connection from either one. This level of direct local competition is likely to be beneficial in ensuring the efficiency of the USO delivery.

It is likely that the costs of delivery of the USO will vary significantly from one area to another. Concepts of national cost estimates are likely to be less beneficial than specific local values.

The cost of provision of the USO for a specific fixed wireless user are relatively easy to determine. Many users will be in direct line-of-sight connection to existing masts or similar infrastructure. These users will be able to connect at the standard commercial rate (whatever that may be for that service). Others within range of the basic transmission infrastructure may be in “shadow” or just beyond range. In these cases, specific “in-fill” infrastructure is required to reach that customer (or a small number of customers). The USO can be used to fund this

infrastructure. The user will then typically be able to access a wide range of services – from basic services up to 30 Mbps, 50 Mbps and beyond. I see no reason to limit this choice once the basic “excess construction charges” have been met through the USO.

Note that in this case, the provision of the USO for one user may extend the infrastructure and so allow other users in the vicinity to access the service at only the standard connection fees. The USO would no-longer apply in this area. It is possible that in this case a number of end users may join together to combine their USO contributions. The operation of the “Connection Vouchers” gives some experience in how this can operate. In many ways, these provide an effective possible model for the delivery of the USO.

Supporting “reasonable requests”

In 1.21 you state that you want to “ensure that as many consumers as possible are able to obtain a 10 Mbps connection with a proportionate cost burden.” I must emphasise that I believe we should change this mind-set. Better to ensure that as many consumers as possible not able to access functional internet access (at 10 Mbps or faster) are able to receive support to access a material improvement in the internet access to at least 10 Mbps, but ideally 30 Mbps or faster. Note that in CBS funded projects in Loch Tay and East Lothian funding for basic broadband provision has enabled the delivery of superfast broadband services – this is a realistic ambition.

The cost threshold around £3,000 appears appropriate. This is currently effective for the telephony USO, and was effective in the Connection Vouchers project. GreySky recently considered the use of vouchers to fund a broadband delivery in the Carron Valley (near Stirling). Working with a fixed wireless provider, we identified that through aggregation, £3,000 per user would be sufficient for them to fund the delivery of basic infrastructure to the area, and subsequently fund the provision of in-fill solutions for the more difficult to reach premises in the area.

Shared costs need not be a great concern. If a “pioneer” user accesses the USO funding to extend superfast broadband infrastructure to their area, and this subsequently allows their neighbours to access superfast broadband at basic commercial rates, then this is surely a success. If the recipient does have to pay a 10% (or similar) contribution, this may encourage them to encourage their neighbours to share the costs at the beginning. Where recipients are able to join together, it may be possible to waive this contribution, and so encourage this approach?

If users are required to meet 100% of the costs over £3,000, this can be expected to encourage community approaches for the most difficult to reach. By joining their funding together in aggregated projects, they can fund significant infrastructure development. A community may also be able to use wind-farm funding to meet the 10% contribution to further support the project development. Additionally, they may be able to contribute to wayleave provision, digging of trenches for fibre and backhaul provision, etc. In this way, the USO funding can provide a valuable contribution to complement a range of other funding options to help deliver superfast broadband to the most difficult to reach areas.

Ensuring efficiency

Supporting local competition from a number of USO providers is considered the most effective means of ensuring long-term efficiency.

The USO providers

Designated universal service providers

A single designated USP for the United Kingdom would be disastrous.

Simply confirming the intention to have a single USP for the UK would stop all commercial development of broadband infrastructure in rural areas. The only single provider that could even consider delivering a USO throughout the UK is BT. If BT were the single designated USP, then every service provider considering building infrastructure in rural areas would know that the USO would fund BT to over-build their infrastructure to deliver USO services – and hence allowing BT to build out infrastructure to compete throughout their area.

Where companies are building infrastructure into rural areas, they must be allowed the option to use that infrastructure to offer a basis to deliver services under the USO to properties outside of the scope of their normal commercial delivery capabilities – for example addressing the “in-fill” requirements discussed previously.

Competition at local level is also required. In this regard, it may be appropriate for BT to operate as a USP.

The dilemma that must be addressed is the need for a *Universal* Service Obligation, and local competition. Allowing local service providers to be able to deliver services under the USO is essential – but these service providers will need to be able to operate within geographic boundaries. They must be able to refuse to deliver service to users outside of their area of operation. So the problem remains of who will provide the USO in areas where there are no local operators?

Undertaken on a national level, this suggests that BT will be required to operate as a “last chance” USP where no other providers are prepared to go. This is possible, but it is likely to be resisted by BT?

It is possible that the issue could be addressed at a local level. Local authorities could be tasked with ensuring their areas are provided with a “strategic infrastructure” such that 99% (or similar) of properties are able to receive service from one or more operators for connection charges less than £3,000 (or whatever the USO price cap is determined to be). The remaining 1% can be served by satellite or through community development schemes. This could be the objective of the next phase of BDUK delivery. The “strategic infrastructure” may be secured through a number of “lots” in each local authority area. This could then result in a panel of USPs operating in the area – including BT. Where a service provider delivers “strategic infrastructure” for a lot (specific geographic area) then they would be required to offer the USO to consumers in that area – though not given the unique right to provide. When a consumer is identified as being eligible for USO support, they could be provided with the details of the USP panel operating in their local authority area, including the default operator for their specific area.

Funding the USO and market distortion

Funding the USO

It is not currently clear how an industry funded scheme could operate in this environment.

The Connection Vouchers scheme resulted in very evident distortion of connection fees to fit with the £3,000 funding limit. These were reduced over time, but were still present. Requiring a 10% contribution from the recipient (or from community funds such as wind-farm funds) will help to reduce this distortion.

Minimising market distortions

Ensuring the use of existing local infrastructure is key. This can be extended in advance through the development of “strategic infrastructure” that in part is expected to support the delivery of the USO. This would mean that the basic infrastructure was established to complement the later funding available from the USO – not in competition with it.

Using the USO to fund the availability of superfast broadband, rather than funding a basic internet infrastructure is central to avoiding retail competition – it allows recipients to access normal retail services, not a separate service.

Review of the USO

When should the USO be reviewed

Basing the USO on a “trigger level” of “functional internet access” appears an important concept. If consumers have internet access that falls below the standard, then they are able to receive funding (or appropriate support) to access improved broadband – which should offer a material improvement in the internet access experience.

This approach provides a gap between the “trigger level” and the service that will be provided. It should also mean that no supplier is making “USO network investments”. They should provide “strategic infrastructure” that can deliver through the USO for consumers that meet the “trigger level” conditions.

The review period for the definition of “functional internet access” should certainly be no more than 5 years. Ideally it should be reviewed annually.