

Digital Infrastructure in Wales

This paper reflects views from the Ofcom Wales Advisory Committee and are not necessarily those of Ofcom.

Digital infrastructure is a means to an end and not an end in itself. The infrastructure is installed to enable citizens and organisations to achieve benefits in their lives and operations. Take up is a necessary measure but an insufficient measure because it does not capture the valued benefits derived from using the infrastructure.

Superfast Cymru is a premises landline digital infrastructure. Mobile is part landline and part wireless digital infrastructure. Mobile is the digital infrastructure for people 'on the move', as well as a premises infrastructure.

Superfast Cymru is a work in progress to achieve completion, take-up and benefit realisation. It started with substantial supply side commitment but without matching benefit marketing to citizens and organisations in intervention areas.

The Welsh Government then started a project to focus on benefit realisation to businesses from exploitation of the infrastructure. The Ofcom Advisory Committee Wales had raised concerns publicly on the need to focus on stimulation to realise the benefits, as a return on the £406 million investment.

The fruits of this work are seen in the government's figures, but it remains work in progress. The realisation of the benefits from stimulation was hampered by BT changing its deployments of infrastructure.

The project seeks to mobilise Welsh Government resources including local authorities. Some authorities were more energetic in helping mobilisation than others.

The project is evolving and there is scope for all businesses paying rates in intervention areas to be contacted. There is scope for publicly funded bodies to consider whether they would benefit from citizens and organisations in intervention areas taking up superfast links and consequently promoting their beneficial use.

Mobile coverage in Wales is worse than all the other nations both to premises and particularly 'on the move'. The topography of Wales and its population density across 80% of its land mass hampers private sector commercial coverage. The economics could be changed by permitting companies to have masts of 100m+ and not charging rates and making available sites and wayleaves for the backhaul free on public land. Such changes would not provide universal coverage but would help. A subsidy is probably necessary for coverage in areas which are still uncommercial. A planning policy which makes consent a Wales decision might also help.

The other schemes for broadband are helpful because they fund services which the commercial market would not support. The schemes are also beneficial because applicants are individuals and likely to consider the individual benefits to themselves of the service.

The objective of coverage and speed from digital infrastructure, which creates the opportunity for benefits across the whole of Wales, needs a tight definition. The Wales Advisory Committee submitted a paper to Ofcom and possible solution to complete universal coverage. The paper is attached as an annex.

In essence it proposes use of multi-technology 10mbs solutions for coverage (particularly in use of wireless/landline combinations) with asset sharing and marginal cost open interconnect funded by a 2% tithe for five years on all network providers fixed, mobile or wireless. The new networks to be owned by the infill company with shareholding in proportion to tithes and the infill company not retailing its assets. It is very likely that many of the solutions would involve wireless connections.

This paper has focussed on the supply side reflecting the Committee questions. The realisation of benefits and how that will be achieved from past, present and future investment is important, if public spend is to be productive. Therefore, there should be a comprehensive well-funded mobilisation plan sustained over several years. It should involve public bodies, particularly with targeted links to the remote business and citizen communities. Experience suggests that a coherent funded cooperative mobilisation produces beneficial results.

John Davies – Chair, Advisory Committee for Wales

8.12.16

Advisory Committee for Wales – Input

Universal Service Obligation for Broadband (USOB)

Introduction

The USOB proposition is worded derivatively, as a supply side duty, derived from the monopoly position of the Royal Mail and British Telecom. This paper approaches the issue from a customer perspective (not supplier perspective) and the reality of several suppliers (actual or potential) and multiple technologies. This paper proposes a UK wide solution but with a default to a Wales only solution.

Universal Customer Service Broadband definition (UCSB)

Universal means all customers (individuals, groups, organisations) in the United Kingdom can buy a link to all others. The link can carry voice, data or images enabling viable live two way communication between the customers.

The customers may be at a fixed location or on the move and hence their communication needs are met and their lives benefit.

Link definition

The link can be provided by landline, radio, satellite or mixtures of these links (includes technological solutions which are inhibited by current regulatory policy).

The link will be able to carry live two-way quality two-person video conferencing and simultaneous information transfer at reading speed (400 words/minute). The link (L) will always be at 10Mbit/s on a two-way basis (contention and capacity management restrictions are excluded to ensure no speed loss at any time).

This paper will adopt 10Mbit/s two way as satisfactory customer need (L). The equalisation of upload/download speeds reflects non-domestic use and more demanding domestic user use. A move away from the equality definition should be validated by consumer/business user research. Equality favours future proofing.

Premise USOB or mobile USOB

Customer benefit will be maximised if the USOB meets the needs of customers at premises or on the move. The use of mobile communications has demonstrated clearly the benefits to customers' lives of communicating whilst on the move. Therefore this paper advocates delivery of USOB should be for both premise communication, on the move communication either with another customer on the move or at a premise and vice versa. A move away from complete 'on the move' coverage, again should be user tested and any diminution expressed in user terms.

The customer benefits flow directly to the customer who can now have a (L). The benefits also flow to customers who already have a link because they can now communicate effectively with the newly linked person. Universality means maximising benefits to all customers because it is a two-way network benefit expansion.

Economies of USOB

Competitive market entrants in the communications market will not give a (L) service to all customers in the UK either at premises or on the move because the economic return on capital is uneconomic.

Therefore to provide the benefits to customers' lives of a quality (L) a method of funding is needed. Funding should not result in patch pricing, nor should it be used to bar social tariffs which the state or Ofcom favour.

A reversion to creating a monopoly across the whole market and forcing the monopolist to use the monopolistic profits to pay for uneconomic infrastructure with standard UK prices is infeasible. BT's fixed line USO is also tempered at the extremes by cost and does not provide universality in a fixed line market.

The three routes to funding are the customer or customer groups pay the actual infrastructure cost, the government pays from general tax or suppliers pay through a tithe on their revenue. A mix of these options is also feasible.

Universality will not flow from the consumer paying for the infrastructure, as they do not have the funds. General taxation would mask the rewards from the bigger market to the suppliers and would be a subsidy from non-users. Therefore the preferred option is for the industry to pay. The communications market is far from being highly competitive and in both the subsidiary markets of fixed line and mobile the suppliers earn monopolistic/oligopolistic profits (the profits are reinforced by barriers to new entrants). The funding should be on UK revenue as a percentage and therefore being both proportionate to market share and adding a constant percentage to cost across all suppliers. All suppliers are permitted to raise their prices by the same amount. The funding to be completed over five years. Logically the benefits will flow back to all the consumers of the USOB and the increased revenue from new USOB consumers to the suppliers. A 2% tithe could produce £3650 funding /line for all 822,000 without service, after 5 years. (Current Wales superfast subsidy is about £520 /line).

Achieving delivery

There are various options for achieving USOB links and the most economic provision will depend on local circumstances e.g. an isolated Welsh cottage up a mountain may be most economically suited to a mobile link but the same cottage in a valley floor may be most economically suited to a landline or landline and Wi-Fi. The critical factor for USOB is the existing suppliers declaring all the areas where they will not provide service after 2017 with USOB quality links. Analysis can then map all premises and road networks without USOB (some of these areas may be urban).

The next issue is, given the identity of localities without USOB links, how is the capability provided. The choice of technologies is varied but more important will be the ability to mix technologies and interconnect new or other suppliers to existing supplier assets at marginal cost prices (subject to regulatory control) and the marginal cost pricing to apply to traffic carriage both ways across the link. The pricing is vital to open entry of the most economic link construction and must be done first.

Achieving delivery from the most economical solution and least burden on the suppliers and customers could be achieved by inviting existing suppliers to bid for delivering links patch by patch or by offering the patches at auction and inviting any supplier/supplier consortium/new supplier (free of policy barriers to entry) new supplier consortium, community consortia or by all the existing suppliers forming a UK company funded by their tithe and given five years to deliver USOB links to all premises and on the move locations by the most economic mix of technologies. The incentive to do it economically rewards them with a lower tithe and shared rewards to the company for subsequent carriage revenue from asset ownership. If the USB company fails to deliver universality in 5 years the 2% tithe continues until completion. Analysis of the actual deployment costs is necessary. A threshold of £3650 /line might be an attractive way of diminishing user universality at the margins. Current experience suggests that the total cost of provision to all excluded customers could probably be absorbed within the total tithe income over 5 years, as it is a small number of customers. A USB company is the optimum solution.

Universality means that areas may not be excluded

The USOB company would be a de facto monopoly for the USOB links and hence would need to be regulated. The company would not own the end customer relationship which would be open to competition but just be a network link provider to retail suppliers.

The profits being reaped by suppliers are above the level that a perfectly competitive market would generate. This paper proposes a solution which transfers some excess profit to provide the offer of service to customers who are uneconomic for private enterprise provision. It will be a judgement call as to whether the service definition should be diminished to allow suppliers to keep more excess profit and exclude some localities (premises or roads) or individual premises. This paper advocates a way forward where there is a clear incentive to provide UCSB in the cheapest way without conflict and with the uneconomic costs being borne by all those who will benefit. Fundamentally the balance of economic surplus should be given to customers, not retained by the imperfectly competitive suppliers. The regulator, as stand in for customer competitive power, should ensure USOB is available to all customers to fulfil its raison d'être.

Wales has the worst mobile coverage in the UK on all dimensions and consequently large areas where customers on the move have no coverage. The rural areas of Wales also have material gaps in broadband fixed coverage. Wales has a low GDP/head compared with the rest of the UK and a disproportionate number of small businesses in its rural heartland. Therefore from a purely Welsh perspective a Wales only company on this model is as desirable as a UK model. The diminishing of the Universal Customer Service Broadband would reinforce the existing economic disadvantages of Wales and its citizens.

Wales has three people per square kilometre compared to 15 people per square kilometre in England.

Conclusions for true universality

- 1) Define USOB in customer terms not supplier terms and call it Universal Customer Service Broadband (UCSB)
- 2) Include 'on the move' as well as to premises (because on the move is normal user life!)

- 3) Describe UCSB link in terms of beneficial use constant two way live image with voice and information
- 4) Set minimum standard as 10Mbit/s constantly
- 5) Supply industry to declare areas not covered by UCSB in 12/17 by 12/16
- 6) Map areas without UCSB
- 7) Fund by 2% tithe on revenue of all market suppliers with completion in five years and stop tithe for early completion or continue until universality.
- 8) Determine marginal cost pricing regime for interconnect to all existing assets which could serve areas without UCSB and similar regime for traffic carriage
- 9) Set up a not for profit company from all suppliers to deliver UCSB to all customer premises and road by 2022 as network provider (not retail)
- 10) Remove any policy barriers to new entrants being part of company hence generating lowest cost single or multi technology solutions
- 11) Regulate company provision, maintenance and economic performance on UCSB annually.
- 12) 1-11 above will provide UCSB to all customers but the economics may mean policy makers will exclude customers on the move from their UCSB definition and exclude premises (even if grouped) where the marginal cost price of provision is above a threshold. Both exclusions mean that it is 'almost Universal Customer Service Broadband' and is discriminatory!
- 13) Wales has a great need for the benefits of UCSB as it has the worst mobile coverage in the UK and material fixed network gaps, particularly in its low population density areas.