Response to the OFCOM consultation on - Designing the broadband universal service obligation

Summary

- Establish understanding of end-users expectations of universal broadband service through a USE team, based in DCMS or in the BSG.
- There are 200,000 end-users not able to access affordable service of at least 10Mb/s from current networks including the recently launched 'hybrid access' service.
- A USO fund should be established, funded by the industry and based on approximately 50p per year for each broadband fixed or mobile line.
- The USE team should administer requests from end-users and allocate grants to be paid from the USO fund.
- The Universal Service process should be overseen by a Board reporting to Ofcom, chaired independently and consisting of members representing government/Ofcom, industry and end users.

Universal Service Expectation

The applications and services available over broadband have become more and more comprehensive and sophisticated. Work, daily life and entertainment for many people is dependent on accessing good broadband – high enough speeds and reliable enough for what they want to do. Applications and services over broadband will only become more essential and pervasive as time goes on. Therefore the industry, regulators and politicians should strive to ensure suitable broadband connectivity is available to everyone – to meet the USE – Universal Service ***Expectation*** of all end users. This expectation is the challenge to which we all need to respond. And the expectation of speed and reliability will steadily increase with time – so the criteria of the USE will increase with time and the USO on industry, regulators and politicians must evolve to match. It would be wrong for any USO framework to be specific to speed, technology or specific provider. The framework must be able to respond to an evolving USE from all end users.

Everyone?

Everyone is a tough challenge with which we have been struggling for some time. The further people are situated away from the centre of networks the more difficult it is to provide broadband connectivity from either a commercial or technological perspective, or both. From the commercial perspective the greater the distance, the higher the cost, the more sparse the end users, the lower the return, and worse the ROI. From the technological perspective all terrestrial technologies suffer from decreasing performance with distance – be it copper pair, coax, cellular or microwave radio; all except FTTP suffer from inconsistent performance due to congestion.

So where are we today? The figures seem to indicate that about 1.4M end users can only connect to broadband below 10Mb/s with DSL technologies over wire pair; about 100K of those users are in deep rural locations. Some are in well populated urban situations, the rest being in rural towns and villages. Alongside that only about 50% can access services using coaxial services, dominantly in cities and larger towns. In addition cellular services using 3G and 4G cover cities and towns well in most cases and coverage is steadily improving in rural areas. These are the dominant networks delivering broadband today. Fibre based networks are being deployed in a limited number of rural areas where potential take-up justifies the ROI. Satellite service is by definition available everywhere but its cost and performance have led to limited take-up so far; if a new LEO satellite fleet were to be implemented that would overcome the limitations of GEO based service.

A new approach called 'Hybrid Access' is being implemented which augments fixed line broadband with an available cellular connection. The benefit is that by combining two existing networks broadband services can delivered which are faster and more reliable than either on its own and without investment in new infrastructure. So far this has been installed in Germany and is now being offered in Italy. A hybrid access service was recently launched by Sharedband in the UK with a product called Boosty. This is particularly for residential and SOHO users and augments fixed line broadband with 3G or 4G via a smartphone. The annex to this paper has an independent review from the current edition of Computer Shopper which describes the product and comments on its performance and the relevance to the 10 Mb/s objectives for everyone.

This hybrid access product reduces substantially the number of end users to whom speeds over a 10Mb/s USO are not available. Firstly it makes the USO achievable for all those urban users who find themselves with poor service due to the legacy of wire pair deployment to them. Secondly it provides the solution in areas where 3G and 4G

coverage has reached rural towns and villages. It does not solve the problem for the remaining 200,000 to 250,000 in difficult to reach rural areas. The availability of this service reduces the number not able to access a service over 10Mb/s by more than 1M end users. It is expected that this product will be marketed by a major communications retailer in the near future. The Boosty product works with all Android and iPhone smartphones, any 3G/4G network and routers from all service providers and network operators.

The scale of the problem to support those still seeking to improve their broadband above the 10MB/s figure is therefore reduced to a much more manageable 200,000.

A Universal Service process.

The government has proposed to put the onus on end-users to apply for improved broadband. This is a reasonable position, as the take-up figures for improved services when networks have been installed are not as high as expected. As we look to rural areas where the cost of new network installations is higher, the lower (or negative) ROI becomes unsustainable. It is therefore necessary to provide support to those requesting, but not able to get, the better broadband service they need.

It is proposed that the industry as a whole should share the financial cost to support a scheme. When the telephony USO was implemented it was taken on by the industry at the time, the government owned monopoly of the BPO. Today the industry is much, much more diverse and competitive, each company having its own strategy, chosen geographic areas and chosen technologies. It is fair to expect all industry players should contribute to a USO fund on an equitable basis, alongside a potential grant from government.

It is proposed that, for broadband, the increased price of service for end-users compared with what would normally be paid is funded by the USO fund. A typical figure could be say £25 extra per month - £300 per year. If 50% of the 200,000 took up the offer, that would amount to a total of £30M per year. The £30M per year would equate to a payment by the industry in to the USO fund of about 50p per year for each broadband fixed and mobile connection.

It is proposed that the subsidy to end-users would cover two years of service, a total of £600 per line. A grant could be paid out from the USO fund over two years, with extension of the grant being considered on request

It is also proposed that a 'USE' team should be put in place as the focal point for requests from individuals who currently have broadband speeds below the 10Mb/s USO and need improved broadband. This team should be aware of all the potential solutions which can be deployed, to advise the preferred options in any case, and register the expectations expressed by end users. It could then issue vouchers to end users to approach a suitable supplier who would be paid from the USO fund. It would seem worthwhile to involve local councils with such a team to provide the means of easy local access for end users to submit requests. This team could be located within DCMS (the current BDUK team with a different remit?), or administered by the BSG. Funding, for what would be a small team, would come from the USO fund.

It is proposed that a USO board would be set up reporting to Ofcom, independently chaired and consisting of members representing government, the industry and users. This Board would report regularly on the status of expectations and the progress in deployments to meet the USO. The board should also keep the recommended speed figure for the USO under review; to this end users should be encouraged to register their needs for improved service even if they are already covered by the current USO figure. My 8½ year experience on the EAB reporting to Ofcom was that we need to have a process that maintains flexibility. The best initial judgements of market needs or technologies are overtaken rapidly, and should not be predetermined. In this context the providers of particular solutions should not be predetermined either – to do so would be anti-competitive. The process described above is proposed to maintain relevance as market conditions and technologies evolve – as they most certainly will!

Dr Peter Radley FREng June 20th, 2016

Annex – Recently launched Hybrid Access product

Independent review by Computer Shopper, August 2016 issue.

INTERNET SPEED BOOSTER

BOOSTY

COMPUTER SHOPPER ★★★★★

BEST BUY £69 one-off payment with £39 subscription for second and subsequent years

• From www.boosty.com

VERDICT

A brilliantly simple idea that not only boosts broadband speeds but also provides a handy backup should your connection drop

THE INCONSISTENT SPEED of broadband in the UK remains a bugbear for a large part of the population. You can live somewhere with superfast fibre, and two streets away a neighbour is tearing their hair out, barely getting 2Mbit/s.

Boosty is a first foray into levelling that playing field, using the power that's already in your hands doing nothing: your mobile phone. If you also have a lousy mobile signal, you might want to look away now, but if you've got 4G that laughs at your home internet speeds, this might be for you.

We first looked at Boosty at the Gadget Show Live (*Shopper* 341) and were struck by its simplicity and elegance – a rare thing in networking. It uses a process called line bonding, common for businesses but almost unheard of in residential circles. The premise is simple: two lines, run together via a central server that meshes the signal. It's similar to the way some download manager programs work. Instead of two ADSL lines, though, it's your broadband line and your mobile signal.

BOX OF TRICKS

Boosty itself consists of a small box, about the size of a matchbox, which plugs into a spare Ethernet port on your PC, drawing power from a USB port. You may even have a spare one of those on your router already.

On the mobile side, an app for iOS or Android runs in the background of your device and listens for Boosty's cries for help. When Boosty detects that your home broadband is a little lacking, for example during gaming or streaming a movie, it sends a call out to the phone to bolster the connection. If the Boosty app is on multiple devices, it will search for the best signal.

Setup is as near to idiot-proof as possible. Install the app, plug Boosty in and follow the instructions. At the computer end, by logging into Boosty's web page you can get control over exactly what Boosty can and can't do.

Alarm bells will doubtless already be ringing as you envisage running up a huge mobile bill. Fortunately, the controls to prevent this are comprehensive. You can control how much bandwidth Boosty is allowed to use, and more importantly set a data limit with a refresh date so you're never caught short. The other important thing to remember is that Boosty will only resort to your mobile connection if it's necessary. If it can manage without, Boosty will do nothing.

Another option is to directly connect Boosty to a 4G dongle so you don't have to worry about having your phone nearby.

If all this sounds too good to be true, there are caveats. First, although we found on a 1.92Mbit/s connection with three bars of 4G, we were able to get 11.86Mbit/s – not quite enough to stream a 4K movie, but fine for a more standard live stream without stuttering – that's the top speed we could reach. If your home broadband is already above 12Mbit/s, this isn't the product for you. Boosty can't suddenly give you fibre optic speeds, it's not designed for that, but we were pleased that despite sending the data via its servers first, the result was impressive.

Second, although all data is anonymised, it does have to pass through the company's servers, and you may be a bit uncomfortable with that. Boosty's makers are adamant that there's no risk of hacking; as well as being anonymous, traffic is bank-level encrypted.

We balked a little at the £69 subscription fee being charged for use of the service, with £39 being charged for each subsequent year. However, do the maths and you'll see that it works out at less than the price of a pint a month, and that's a pretty small price to pay for making the impossible suddenly possible.

FALLBACK POSITION

Even if you have fast broadband, Boosty has another potential use. If you work from home it provides a brilliantly simple means of fallback if your internet drops out or goes down, and when time is money, that's definitely worth the subscription.

There's very little to compare Boosty to. It's one of those rare moments in *Shopper* where we actually get to review something completely unique; but don't think that means it's being given a Best Buy award by default.

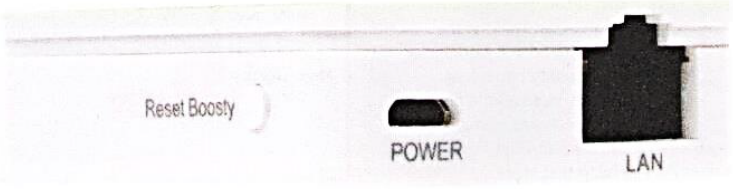
> Boosty is a well-thought-out, well-engineered and simple idea. It does what it needs to do and does it incredibly well

Boosty is a well-thought-out, well-engineered and incredibly simple idea. It does what it needs to do and does it incredibly well. Handoffs between regular traffic and boosted traffic are seamless and our concerns that the app could prove a battery hog have proved, at least so far, unfounded.

It's not a product for everyone. But as the government is considering changes in rural broadband policy that could see communities with speeds of 10Mbit/s and slower only getting upgraded on demand, Boosty could be a valuable alternative.

In those situations, as long as your mobile signal is good, then this could prove to be a more cost-effective instant solution. For everyone else, it still represents a business tool that prevents dropouts, for when being offline is simply not an option. For all those reasons, the Boosty box is a Best Buy.

Chris Merriman



SPECIFICATIONS

OS SUPPORT Android/iOS • **REQUIREMENTS** 4G signal to be effective; spare Ethernet 10/100/1000 port and USB power (not supplied) • **DETAILS** www.boosty.com