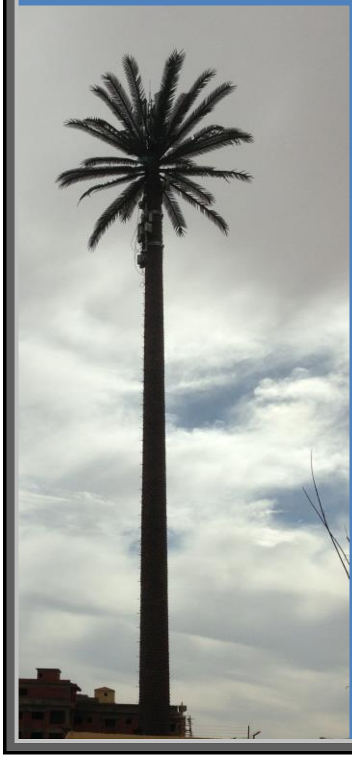
Telzed Limited

Thoughts on the introduction of a broadband USO in the UK

Roger Steele

A discussion paper



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1 The UK government has announced a broadband USO

In November 2015, the UK Prime Minister David Cameron announced the intention to introduce a Universal Service Obligation[1]. Key facts centre on it being a "legal right" that UK citizens have access to 10Mbit/s, no matter their location. The government will consult on the matter in 2016.

This PM announcement has been made during the Ofcom Digital Strategy Review[2] Consultation – a "once in 10 year" fundamental review of UK regulation. Responses have been submitted to Ofcom (including one from Telzed), but the outcome from the Consultation has still to be announced. The Consultation is far reaching, but a major focus is on broadband, and on encouraging investment and competition. A considerable amount of press words and Consultation responses covered a possible split-up of BT to give a separate access/network business, as one of the ways to better outcomes.

Supplementary facts help to put the announcement in perspective:

- Past UK government statements lacked a clear direction or target. The March 2015 statement[3] mentioned the intention to *consider* a possible move to have a broadband USO and to possibly raise the USO from dial-up to 5Mbit/s. Clearly the new announcement is more concrete and has a faster target.
- BT has already announced in September 2015 its intention to supply a minimum of 5-10Mbit/s to all. This may have some caveats, depending on the new regulatory regime, plus it was made under the pressures from the industry to break up BT.
- The Consultation and its responses have covered the UK broadband outcomes at length. Some parties have focussed on broadband figures that put UK in a good light compared to peer countries, others point out deficiencies. As noted in the Telzed response, UK has generally done relatively well. But this depends on the comparisons, as some other measures can show that the UK lags[4]. There is nothing unusual in this as all statistics can be used selectively.

Clarity of a USO target by the PM is one step. However, there are a number of issues with the announcement.

A gap exists in policy. There has been little clear definition of exactly what the UK broadband levels should get to. Targets have been lacking (though the Digital Agenda Europe [DAE] exists), and there has not been a proper visionary mission statement of the targets and general principles of how to get there. The Consultation should help to define how to get

[1] https://www.gov.uk/government/news/government-plans-to-make-sure-no-one-is-left-behind-on-broadband-access
This was also reported upon in the press

[2] http://stakeholders.ofcom.org.uk/consultations/dcr-discussion/ This link also has the responses

[3] The digital communications infrastructure strategy and Ofcom Consultation para 1.29

[4] For example: broadband speeds and availability are reasonable and better than many EU countries. Some countries have higher speeds or more coverage. Fibre in the loop and especially to the home lags some leading countries. Use of internet economy in the UK is good. Growth of broadband speed is average (close to Nielsen's law)

there - Ofcom's role is to optimally regulate towards, and promote, certain outcomes based on stated principles. The government announcement is one small step towards defining a target (a 10Mbit/s minimum). The percentage of coverage of premises with say 100Mbit/s or the level of fibre (FTTH or FTTx) have not been defined. The future government funding levels (if any) are uncertain. These are part of the missing vision. These affect the Consultation and ways forward, but seemingly the Consultation does not try to define the end point(s).

2 The USO announcement raises critical questions

Any USO approach means that some businesses will have an obligation to supply the service. Immediately the next question is: which ones have the obligations?

The follow on from this is: who pays for the obligation? There is no point in the USO where the service target is easy to meet and is commercially viable – it is already far exceeded in many areas. It only matters in marginal areas or the "digital divide," where the service supply would be loss making and competitive-supply pressures are missing. Many funding options exist:

- The existing (or a new) service provider has the obligation. This is a self-funded USO. This means the provider must pay from its own funds and from the more profitable customers.
- Other parts of the industry. These can be other telco operators, internet service providers or perhaps even over the top (OTT) internet-based services. The first is the most logical and the second is just possible. The third is less likely, but it *is just* conceivable in some situations. Though probably not in the UK.
- Government. The UK government has funded broadband already with the BDUK funds. This did not require a broadband USO. This is not without controversy – almost all monies were obtained by BT and critics could also argue that BT would have done the rural build anyway and it is an unreasonable government subsidy.

Additional questions concern the detail of the USO: what really is the best target figure? 10Mbit/s might equally be 5 or 50 or more. Ireland, for example, chose 30 Mbit/s in its intervention strategy of July 2015.

A legal/political issue is the use of legal right. David Cameron stated "it should be a right – absolutely fundamental to life in 21st century Britain." Should this really be something akin to liberty and rights to education? This can be taken partly as political posturing, but it gives some concerns. It *is* certainly good for the national economy and for citizens to have broadband, in much the same way as having electricity and water, but perhaps this is not the same as a *right*.

So the key issues[5] of a USO are not totally settled by the announcement:

[5] See Telzed response to Ofcom Consultation, Section 5 for some USO points

- What is the USO? This is stated to be 10Mbit/s. But it is to be consulted on, so still unclear. There will surely be huge disputes over this figure.
- Who pays?
- Who has the obligation and gets the funding (if any)?

In addition: are there a better options than a USO? A broadband USO is only one approach and it has not been needed so far. Some Consultation responses have suggested good/better outcomes might be obtained from better pro investment and competition regulations. As the announcement was made by the PM, it is reasonable to assume that a USO of some form will be in place and the other measures will be in addition.

Some could argue that taking funding from one part of an industry to assist another is fundamentally a wrong approach[6]. This might support the view that, those in rural areas have made the decision to have more limited services anyway by living there and/or there is no "right" that everyone gets the same service or even a minimum service. It is also possible to give the fund monies to the consumer – so they can then afford to pay the additional cost of service provision (and they make the decision). A key message point is that there are many ways to apply a USO. Further, a USO is certainly not the only way to ensure coverage of marginal areas with broadband: it is one solution among many, each with its own pros and cons.

3 A critical appraisal of the USO announcement

This report has so far set out the key facts and questions that directly follow. It is useful to give the announcement some more critical assessments. In part, this is a political issue (the announcement was made by the *Prime Minister*) and so "normal" regulatory economics, competition and investment discussions have to be modified. The political agenda is further enforced by the announcement by the PM's own minister at the end of September that cast doubts on the idea of a BT break-up[7]. This is a clear political statement that must be considered as part of the Ofcom Consultation, because it was made during the final stages of lobbying and submissions by respondents to the Consultation.

It is reasonable to presume that the government has not made these statements in isolation and Ofcom was made aware of them in advance. More speculative is whether Ofcom asked for the statements or even supports them. In any event it sets a new agenda that Ofcom has no choice but to consider, and *include*, in its Consultation outcome and its new strategy. A problem is that the details were not decided upon – so Ofcom has to make all plans with the proviso that investments and competition may (or may not, depending on locality[8]!) be subject

[6] E.g. IEA article http://www.iea.org.uk/blog/do-we-really-want-to-make-the-broadband-sector-more-the-postal-service

[7] Ed Vaisey was widely reported to be not in favour of a BT break-up. E.g. "Taking Openreach out of BT could backfire, warns Ed Vaizey" http://www.telegraph.co.uk/finance/newsbysector/mediatechnologyandtelecoms/telecoms/11903239/Taking-Openreach-out-of-BT-could-backfire-warns-Ed-Vaizey.html

[8] Many city areas already have significantly more than 10Mbit/s, so the USO is academic there

to a 10 Mbit/s (or more!) USO requirement and may (or may not!) have funding to receive or make. Such uncertainties are not very helpful for potential investors.

Further speculation can be made about whether the PM announcement was really thought through and there are already pending answers to the key questions. The answer depends on the degree of political cynicism.   As Ofcom has presumably been involved, then we can reasonably speculate that such questions have been considered.

The 10Mbit/s figure can be welcomed as: it is surely better than no target. In a small way it starts to answer a key point in Telzed's Ofcom submission, that the national directions have not been fully defined. It follows directly that a strategy is always going to have a problem if the target and main routes or tools to get there are not defined[9]. The lack of consideration of the follow-on points, makes the announcement more open to criticism. It is then "nice to have, but almost useless because no problem has actually been solved and more uncertainties are created." However these should be quite manageable by Ofcom, as discussed later in this report.

A number of more serious points follow. The first is the connection to BT. The Government target figure is essentially the same as that of the BT announcement. This is surely no coincidence.   Taken together this means that the target will be met anyway, or can be subject to a few conditions that are probably not too arduous, as BT plans to do it mostly anyway. This makes it an excellent government policy: it costs nothing and will be met without any real intervention. The government support for not breaking up BT, as well as other arguments within the Consultation responses against break-up, together make it less likely that Ofcom will support the split and this further reduces the potential of a competition authority movement to enforce a split. The win-outcome for BT is clear, even before the Ofcom consultation is complete.

The second issue is the target itself. 10Mbit/s is possibly a *reasonable number* and many would be pleased to get this. However the UK average is already far above this – the Ofcom 2015 UK market report (figure 4.43) noted the average UK average actual residential fixed broadband download speeds was 23Mbit/s at the end of 2014. This is rising at ~ Nielsen's law rate[10]. The government target is well less than half what is normal today. By definition, the target therefore sets a two tier UK economy: those with USO type levels and all the rest. This is clearly far different to the PM claim of a universal "right" to the *same* service, like post, electricity and water.

The third issue is the speed: how reasonable is *another value* compared to 10Mbit/s? This is a subject of endless debate about what consumers really want, need or deserve.   Certainly many households can live today with 10Mbit/s and it covers many current activities. We can be sure that the demand will inexorably rise, and what is adequate in 2014 is inadequate in 2017 and beyond. This Telzed paper does not attempt define a "best figure." The key point is that, if the main telcos are already giving on average >23Mbit/s, then either they are stupid

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[9] Strategy discussions sometimes quote Alice in Wonderland and the conversation with the Cheshire Cat . Alice: "*Would you tell me, please, which way I ought to go from here?" "That depends a good deal on where you want to get to." "I don't much care where –". "Then it doesn't matter which way you go*."   The late Yogi Berra put it more succinctly: "*If you don't know where you are going, you might wind up someplace else*"

[10] See Telzed and other responses to Ofcom Consultation. Nielsen's law notes that average broadband speeds in developed countries are rising exponentially

and giving too much capacity that is not really required, or else they know something about the real needs and the growth that was not seen as part of the PM's USO announcement. Many households currently *do* need far more than 10Mbit/s or even 23Mbit/s. This is also reflected in the marketing of ever-faster broadband: telcos are not known for spending money without good reason[11], nor are consumers all so stupid as to buy excess broadband if there is no need[12]. 10Mbit/s does not meet the current average customers' needs. This might be enough to "get by with," which is not the same.

Assuming the 10Mbit/s figure remains the target, then: how will 10Mbit/s be delivered? This seems at first to be a big issue: many areas today cannot get near to 10Mbit/s with current copper technology, and the existing 3G does not cover the region and/or would struggle to deliver this speed anyway. In fact, the issue is probably not so serious:

- BT has to upgrade the network anyway and some old copper and older electronic systems must be replaced. This is a normal churn of old assets and technology. Certainly some of it could have remained in place, but the *additional* investment in new equipment to help cover the more marginal areas is therefore not so huge. The replacement-investment is often required anyway. BT has made only limited moves to fibre-to-the premises, where costs *are* much more. So the 10Mbit/s figure can be covered by some DSL developments or G.FAST and/or else fibre to the cabinet which is cheaper in the short term than fibre to the premises. Together: this is probably not a huge *additional* cost over what would have been spent on simply maintaining the same network. Therefore many seemingly marginal USO areas will probably not be making much of a loss at all, probably making "merely" slightly less than the normal cost of capital.

- BT has a 4G option. This can deliver ~10Mbit/s. Mobile technology is economic to cover large areas (compared to copper and/or new fibre to rural areas). Of course 4G in rural areas is not as profitable as in in city areas, but it should still be a low cost solution.

- Any alternative new-access-network provider will of course deliver superfast broadband (mostly based on fibre) and so *if* there is to be alternative investor, then the USO will always be met.

The net result is that this USO target will be met without the need for any significant government assistance or additional funding from the alterative service providers via a USO fund. Only a very few areas might need the additional finance.

This is *not* as good as it might first appear. *If* 4G is the low cost national "fill in" to meet the USO obligation (this is currently speculation), then there is likely to be a major limitation: total download. Mobile data business-economics works well when there are many consumers (cities). It is also good (compared to building a new fixed network) to cover a large rural area: a few base stations provide the coverage. Everyone gets the high speed potential. Problems start when the data volumes from each consumer rise: spectrum limitations mean there is a

[11] There is of course a facetious reply to this, and there have been many mistakes made by telcos. The general assumption that telcos mostly invest only after some due thinking , is still fair!
[12] Barnum may apocryphally have said "There's a sucker born every minute" but it is unlikely that the majority of the UK consumers are

finite total capacity per base station. This higher demand requires more base stations, but this is really only economical when there are many customers to pay for it. The 3G and 4G coverage seen in cities and non-coverage in rural areas reflect this. The almost inevitable outcome is that a USO speed will be possible (say ~10Mbit/s), but the service will have a download per month limit.

A mobile download limit is standard in existing mobile data packages. This might suggest that a monthly download limit is not a problem. But, a download limit is, in part, why mobile data is not really a total substitute for fixed line broadband: many high volume consumers cannot be easily/economically served over mobile. Fixed line broadband costs only increase slowly with increased download volumes and as the related *net effective average speed* per customer increases. Mobile costs rise much faster: more masts are needed. Hence the familiar download limits for mobile customers. USO/rural customers, if they downloaded volumes like fixed-users do, then the base station numbers must probably rise and the business case then becomes dubious.

The result is that the USO, using 4G as a fill-in, is likely to reinforce the two tier nation. First the physical speed is less, secondly the allowed download per month will be limited. The download is not so commonly discussed as the focus is on the headline speed figure. In reality the allowed download (#Gbyte per month) *is* a major issue. Who cares if they have a USO of 10Mbit/s or a 100Mbit/s fibre service, if the download is "only a few film views per month" or else only a few customers in the base station's cell can be downloading at the same time?

The key message is: the USO *must* consider the total download (Mbyte) or the effective average Mbit/s that consumers actually end up getting (the two are related). Network contention factors matter. A headline physical speed is necessary, but not sufficient.

If the USO rural and digital-divide coverage is based on: BT's current standard copper technology-evolution; with in-filled by a 4G solution (probably mostly by BT); and with some new entrants also covering the digital divide, then this certainly has a number of benefits:

- Consumers get a broadband service. It might not be ideal, but it is better than today.
- It probably costs the government and other service providers almost nothing *in addition:* no USO funding subsidies.
- The 4G coverage is also available for travelling consumers – it should mean the notorious no signal "not-spots" of 3G are avoided.

All is not perfect, of course. The last point only helps customers who are on BT's network. A point in the Telzed Ofcom consultation paper is that most customers are on another network – coverage by *a network* is not much use to most *mobile* customers. Other networks are unlikely to cover this same rural area, for much the same reasons they are not covered today by every 3G network. This provides additional benefits to BT. BT may have the burden (if any) of the 4G USO provision, but it gains a distinct advantage from covering both the fixed broadband market (which includes delivery using 4G technology that is partly deployed for the USO delivery in the *fixed* market) *and* the mobile market. This issue was raised in the Telzed and other Consultation responses: covering many separate markets creates a new level of market influence that is seemingly not currently under full regulatory consideration. Of course some may argue that this is good – more economies of scale and trans-market service provision benefit consumers. Others will argue to the contrary.

If BT in-fills USO coverage using 4G or radio, for the hard-to-address-fixed-network areas, then this is clearly good for the fixed network consumers and it also should give 4G coverage, for travelling consumers, as it avoids total not-spots. This BT-supply outcome introduces some obvious competition concerns from the ability to cover several markets.

The *opportunity* certainly exists for the other 4G suppliers to cover the same rural areas (USO/digital divide customers). If BT can do it, then so could others. This would give almost 100% UK 4G coverage by several network providers – a good outcome. How likely this is, is debatable. Rural areas have not been served well with 3G, and so why should the mobile operator's behave radically differently with 4G? If one player (BT) is covering the same area anyway as part of a fixed market play, should another want cover the same area (with low customer density)? BT should be mainly concerned with the *marginal* cost of the 4G fill-in compared to the full cost of a fixed-line 10Mbit/s delivers. Are other mobiles able to compete on a totally equivalent basis? Would they also build in the digital divide areas?

4 Conclusions: the key USO questions are not answered, but perhaps it does not matter anyway

The USO announcements have been widely commented on. In general the comments were mostly on the points not covered by the PM - the unanswered questions of: the target speed, the funding and who has the obligations.

If the target remains at ~10Mbit/s then this should be easily achieved at little or no cost to government or to the alternative service providers. A BT provided solution is likely to happen anyway - BT would not have offered it in September this year if it was prohibitively expensive. Other providers who are building in the digital divide using their own business plans will also help to achieve the USO target, again without additional funding.

It follows from this, that there is probably only a limited need, if any, for USO funding by Government or for cross payments from other service providers. Given the current budget cuts and preference to avoid more pressure on the tax income, this is more than convenient for the government. This also means that Ofcom or the government should not be pressurised to additionally-fund BT or to give significant regulatory benefits as a *quid pro quo* for BT being "so nice" for delivering a 10Mbit/s USO.

A number of significant concerns exist. The target speed is open to severe criticism. Even if accepted as "reasonable" it certainly does mean there is a clear national divide. This creates a two tier broadband society. This is better than today's split which has some who have almost unusable broadband or even none at all. Instead, the UK will have some with a lower "USO performance," and the majority who are on "normal" speeds.

The speed target issue is important but it must be linked to the download limits. In turn this is linked to the technical delivery of a possible ~10Mbit/s USO. *If* this technology is to be partly based on 4G or other radio solutions, then very likely that download limits will be a major issue. Even 100Mbit/s, with only a sub 1Gbyte download limit, is going to be almost useless for most consumers. A download volume target is as important as the target speed in any USO.

The PM announcement certainly creates a problem for Ofcom. New strategic plans must now work around this almost-certain legal requirement. However this paper shows that it will probably be met relatively easily. Of course bigger issues would arise if BT were to be split or if the target speed were increased. A split makes a "4G USO fill-in" more problematical, but not impossible. The cost factors are *much* more serious if 30Mbit/s or even 100Mbit/s were the target. These need FTTx and so the cost/revenue gaps are clearer to see, but the exact figures are disputed. Note that these are not crazy targets, although unlikely to be set by this government, and would result in the USO needing some external funding solutions.

Government statements about there probably being no BT split and other split-opposition comments, suggest that the 10Mbit/s USO figure fits with a BT-centred supply of the USO and no BT split, as the likely outcomes. Perhaps the PM announcements, Minister's statements and the BT statements all combine.

Does BT delivery of the USO, perhaps including a 4G solution, mean that BT has no trans-market advantage? Is competitive 4G coverage in rural areas likely to happen as a result of a USO and BT's possible coverage using 4G, or will many not-spots remain as seen in 3G? The answers are surely clear.


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