OFCOM CALL FOR INPUTS:
FIXED NARROWBAND MARKET REVIEW & NETWORK CHARGE CONTROL

28 JUNE 2012

1. INTRODUCTION

Cable&Wireless Worldwide provides enterprise and carrier solutions to the largest users of telecom services across the UK and the globe. More information on Cable&Wireless Worldwide can be found at: www.cw.com

Cable&Wireless Worldwide is key stakeholder in this narrowband market with both a significant retail business focused on the UK's leading enterprise and public sector customers and an active wholesale customer base, offering transit and end to end call services to other communications providers and resellers.

2. EXECUTIVE SUMMARY

The narrowband voice market is the most prominent of all the communications markets regulated by Ofcom. It is the market where almost every consumer participates, be they a residential or business user. It is the communications market where consumers experience first-hand the benefits that competition can bring in terms of choice, price and quality of service. Even in a world of high-speed broadband, social networking and smart phones, the fixed line telephone remains the mainstay our nation's communication infrastructure, providing a reliable and enduring means of communication.

Following the deregulation of the retail narrowband market in 2009, ensuring that the regulatory environment in the wholesale market is appropriate is ever more important as the wholesale market effectively underpins a competitive retail market. If the correct wholesale remedies were not in place it would not be long before consumers were adversely impacted. For competition to flourish in the retail market, the conditions in the wholesale market need to be favourable, with competing providers having access to the right wholesale inputs at the right price. The wholesale services discussed within this review are little understood by the overwhelming majority of businesses and consumers, yet these services are of fundamental importance to all users of telecommunications services in the United Kingdom. Wholesale services provide communication providers with the capability required to support the products demanded by enterprises and consumers.

With adverse economic headwinds expected to continue for some considerable time it is essential that the United Kingdom has the right regulatory remedies in place. It is vital that Ofcom pays proper attention to the particular features of the UK market, investing sufficient time to ensure that charges are based on fair and reasonable cost assumptions. While technology is evolving, much will also stay the same within the period of the review. So when seeking to accommodate the impact of technology changes Ofcom must get the balance right, ensuring that technology changes bring genuine benefits to consumers, reducing costs and not increasing them and not foreclosing future competition by side-lining infrastructure which continues to serve the interests of the competitive market well.

Ofcom must take the upmost account of the European Commission's revised recommendations on cost modelling, however Ofcom must also take account of the practical realities of the UK market, including the interconnection and infrastructure arrangements that are both in place now and those that are likely to be made within the period under review. We are likely to see a more gradualist approach to technology change in this market, an orderly evolution rather than anything more dramatic. With many new technology standards yet to be defined and the vast majority of investment plans to be finalised, it is essential that Ofcom does not adopt an approach which effectively dictates both the path and pace of technology change. Instead investment decisions should be left as matters for commercial judgement alone, with the focus on creating as much regulatory certainty as possible.

We remain firmly of the view that the UK market for narrowband voice is a national one, requiring a national approach to wholesale remedies. While there are undoubtedly parts of the country where retail competition is more intense, the need for national wholesale remedies is as strong as ever in order to support choice for a broad range of consumers. A fragmented approach to regulation in the wholesale market for voice will greatly undermine consumer choice and harm the development of the market as the ability of key suppliers will be impaired. While at a superficial level parallels can be drawn to the geographic market approach in the WBA market for broadband services, the realities of the narrowband market are very different, with a much broader base of consumers with differing needs to consider and a retail market that is far less able to self-supply and is much more dependent on a properly functioning regulated wholesale market, where universal products are available in all parts of the country to all types of consumers. The removal of a universal call origination remedy in the wholesale narrowband market is likely to have a knock on impact on adjacent or connected markets, potentially compromising sustainable competition in recently deregulated markets.

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3. Q&A

In the remainder of this document we address the specific questions raised by Ofcom in the Call for Inputs:

Question 1: What are the main issues we should examine in this market review?

BT Wholesale Calls

For the most part the wholesale remedies imposed in the last market review have worked well, underpinning retail competition. However retail competition remains precarious and Ofcom should not underestimate how quickly market shares can change if appropriate wholesale remedies are not imposed. The rapid decline of CPS in the face of BT's Wholesale Calls product demonstrates just how quickly the market can shift. It goes without saying that the competition concerns surrounding BT Wholesale Calls product remains a concern and it is currently the subject of a separate Ofcom Competition Act investigation. In the last market review Ofcom failed to take adequate account of BT's Wholesale Calls product as the surge in volumes for the product occurred after much of the market analysis has been completed. BT Wholesale Calls is now a mature product, peaking at over 4M exchange lines and has had a massively detrimental impact on the uptake of CPS and as a consequence has stifled wholesale competition. It is therefore essential that Ofcom includes BT's Wholesale Calls product within all aspects of its market analysis.

Cost modelling & NGNs

Ofcom's approach to efficient cost modelling will be a key issue for this review. In particular Ofcom's approach should take account of the preference to model costs on efficient next generation network principles in line with the commission's recommendations, but it must also respect the interconnect and technology choices made by the majority of communication providers. With few scale users of IP technology, any IP cost model would be based on a theoretical construct, so great care must be taken to ensure that prices are not set higher than they otherwise would be, as by definition this would not be the efficient outcome, nor should anything be done to undermine existing infrastructure that will remain commercially viable for some time to come. In short what is appropriate for modelling purposes in order to derive efficient cost levels through the use of modern replacement assets should not then be used to displace well established and effective interconnection arrangements. It is the Communication Providers themselves who must determine the pace and extent of NGN migration based on sound commercial and technology decisions, not Ofcom.

Continuing need for UK-wide remedies

The advent of LLU investment may mean some exchange areas have more choice of access competition, doubtless leading to BT urging Ofcom to adopt a geographic market approach similar to the WBA market. At face value this might sound a reasonable proposition, but it overlooks a number of significant issues and fails to distinguish between specific markets. A UK wide regulatory approach to call origination is required to preserve competition at a retail level, without it consumers in certain areas will be left with restricted choice and doubtless see prices increase. Those who have no wish or need to take up a broadband service will be left particularly disadvantaged, and those consumers who reside outside the main conurbations risk being marginalised as the range of retail competitors diminishes due to shrinkage in the addressable market limits participation.

Materiality of the Single Transit Market

Ofcom must continue with the existing regulatory remedies in the single transit market. The value of the pure single transit conveyance market is relatively low, indeed some would argue at around £5M it should be viewed as immaterial. However this would be to overlook the very significant strategic importance of the market as it acts as a gatekeeper to many other wholesale markets. In reality BT Wholesale reports annual transit revenues of around £1BN, including the termination costs associated with transit traffic. BT's market power in transit is as strong as ever and it continues to refuse to pay transit fees to any other providers, requiring the overwhelming majority of CPs to interconnect directly with the BT network. The current single transit remedies are not onerous, being entirely proportionate and recognising the competition present in the 'fat' routes, while at the same time safeguarding the wider consumer interest on the 'thin' and compulsory routes where no alternative routing options are available. The current regulatory approach to single transit is one of the best examples of a regulatory approach that almost perfectly mimics a competitive market outcome in a supply area where BT retains a tight stranglehold.

Question 2: Are there particular problems or issues in these markets that this review should address? Where you identify a problem, please explain why you believe regulation to be an appropriate response?

In the wholesale narrowband market there is no adequate substitute for proportionate ex-ante remedies. Ex-post remedies are simply not appropriate due to their inability to deal quickly with adverse market issue (eg. the BT Wholesale Calls investigation has been running for four years without a final conclusion). Ofcom's response to BT's market power in Single Transit in 2009 was a good one, with an ex-ante remedy of no undue discrimination imposed, thus ensuring the enduring bottleneck routes in the single transit market were subjected to the same competitive pricing constraints as the routes where a degree of alternative routing was available. This is a light touch approach as it is neither onerous on BT, nor does not limit BT's pricing freedom through regulation, instead leaving that to market forces.

Question 3: What are your views on the current state of competition in the market for retail narrowband services in the United Kingdom (excluding the Hull area)? How do you think this might change over the next 3 to 4 years?

While BT's market share has been declining in recent years, it still remains relatively high, being the largest single retail provider by some considerable margin. We would caution against overstating the strength of sustainable competition in the market as it remains precarious and is predicated on having the correct wholesale remedies in place. In our view competition in the retail market has advanced over last three years as a result of the following factors:

(1) The universal wholesale remedies imposed in the narrowband market have allowed competition to flourish on a UK wide basis, with WLR and CPS/IDA being freely available in all parts of the UK (exc. Hull).

(2) The success of BT's Wholesale calls offering has also had an impact, boosting the level of competition at the retail level. It is important for Ofcom to consider the artificial nature of this phenomenon, because if Ofcom confirm a finding of margin squeeze against BT's Wholesale calls product, then it would seem reasonable to conclude that suppliers utilising BT's Wholesale Calls product have benefited from BT's margin squeeze pricing and have thus been able reduce their pricing below competitively sustainable levels and capture market share away from BT Retail. In addition, BT's Wholesale Calls pricing strategy has potentially forced CPS providers to drop their pricing in response, one that may be below a level that could be regarded as sustainable, resulting in an artificially high level of customer movement away from BT Retail. When BT Wholesale contracts are renewed at more realistic prices which aren't anti-competitive then there may well be a partial drift back to BT Retail as BT's retail competitors pricing is forced up as their chosen supplier (BT Wholesale) has to increase its prices.

(3) With LLU roll outs reaching maturity, most retail suppliers are pushing bundled propositions, encouraging consumers to consolidate Pay TV and broadband services and telephony with a single supplier. This makes telephony price comparisons difficult as it only constitutes one part of the bundle, and often the best broadband and TV offers are only available to those who take all three

services. The initial migration of consumers to these providers has taken place and the trend is unlikely to continue at its current pace. Indeed BT's own retail Vision offering (and recent £246M per annum spending spree in the Pay TV content arena) is a clear response to this[1].

It remains to be seen if BT's Retail market share will continue to decline to any significant extent, with many of the alternative suppliers now having what could be regarded as mature market offerings. Competition in the market is precarious, particularly for those consumers with no access to or desire to utilise broadband and/or Pay TV services.

The need to retain key universal wholesale remedies such as call origination is vital to preserve the competitive pressure within the retail market.

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Question 4: What are your views on the state of retail competition in the market for retail narrowband services in Northern Ireland?

We are not aware of any particular issues within the retail telephony market in Northern Ireland that would distinguish it from the rest of the UK.

Question 5: What are your views on the state of retail competition in the Hull area?

There would appear to be unwillingness on the part of many alternative retail suppliers to enter the Hull market. This may in part be to do with perceived entrenched customer loyalties to the incumbent supplier, but could also be as a result of reluctance amongst alternative retail suppliers to fragment their existing ordering, fault and in-life management systems and processes to address one part of the country with a limited addressable market.

Question 6: To what extent have changes in wholesale charges (such as for wholesale call origination and termination) affected the pricing of retail services, including line rental charges, number of bundled minutes, bundle composition and call prices? Please distinguish between residential and business packages where appropriate.

Increases in wholesale call origination and call termination costs have largely been absorbed by wholesale or retail providers and not passed on to consumers. In the business market this is also largely true, but there are some instances where tariffs have increased due to changes to wholesale charges.

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[1] http://www.bbc.co.uk/news/business-18430036

Ofcom needs to consider the impact that BT's alleged margin squeeze pricing has had on the retail market. The pricing for several large retail contracts for BT's Wholesale Calls offering were fixed at a time when BT was effectively dumping 'cheap' minutes in the market and as a result distorting competition. This made it very difficult to pass on any wholesale increase to the residential market. It is inevitable that if wholesale charges continue on their current upward trajectory that prices to consumers will have to increase. Consumers have so far seen pence per minute prices typically decline, although this has been partially offset by increases to call set up fees, package fees and line rental.

Question 7: *Do you consider there has been a sufficient increase in the competitive constraint from mobile and/or VoIP on wholesale call origination since the last market review such that they should now be included in the same relevant market? Please distinguish between the direct and indirect constraints from each where appropriate.*

From the evidence presented we do not believe that the picture has altered significantly since 2009, with any substitution from mobile / VoIP on the margins and not considered a mainstream alternative. In the case of VoIP the necessity to have a fixed line to facilitate a broadband connect is a factor. While some use of VoIP for inland and international calls is made, it will not supplant the fixed line or its main stream use as the primary means of both inbound and outbound telephony in the foreseeable future.

In the case of mobile substitution this is largely confined to certain age groups who have gained their telephony independence from mobile handsets and in all likelihood will revert back to fixed lines when their life circumstances alter (eg. moving into their own home after completing their studies). The cost of calling certain numbers (eg. non-geographic services) and the reliability of mobile reception in some locations also plays a part in decision making. We believe Ofcom would be right to exclude both mobile and VOIP from the narrowband market definition.

Question 8*: As the deployment of LLU has increased, should services provided over LLU be considered in the same relevant market as wholesale fixed call origination services provided by BT?*

Full LLU deployment has undoubtedly had an impact on the demand for wholesale fixed call origination. The impact as the retail market is less noticeable as many consumers may be unaware that their chosen retail supplier has migrated their line to LLU and ceased to use WLR/CPS or BT's Wholesale Calls offering. There is no merchant market in LLU based call origination (sold on its own) and it is effectively used in a self-supply capacity only. While some unbundlers offer merchant services, these are typically for full unbundling and cover broadband and telephony together. The lack of a merchant market for LLU call origination and the typically bundled nature of LLU provider retail offerings (usually combing telephony with broadband and in many case Pay TV) means it has a limited competitive impact on the wider fixed call origination market and influence over the price charged by BT, with BT still feeling able to take full advantage of the price rises built into the current charge control. If LLU was exerting any commercial pressure on BT on call origination costs you would expect it would act to suppress BT's call origination charges.

LLU based call origination is a constituent part of the wider call origination market, however its competitive impact on competition should not be overstated as the market it addresses is confined to self-supply aimed at retail customer who also purchase broadband (and potentially TV services) from the same provider and while it had reduced demand for BT based call origination it has not had impact on the wholesale price. The vast majority of consumers who purchase telephony in isolation are typically not addressed by LLU providers who may prefer to use WLR in cases where no broadband connection is needed. Ofcom should consider the impact that retail bundling has had on buying behaviour in the wholesale market, as a sizable number of consumers remain dependent on BT call origination (IDA/CPS , Wholesale Calls & BT Retail).

Question 9: *To what extent do you think that competitive conditions vary materially in different areas, or is fixed call origination subject to broadly similar competitive conditions across the country?*

There are areas of the country where access competition has had an impact on competitive supply, with BT competing alongside cable and full local loop unbundlers. In some cases for larger business customers there may also be other direct infrastructure suppliers present. However LLU competition typically only benefits those consumers who wish to take 2 or more services from the same supplier and doesn't tend to address the market where consumers purchase telephony in isolation. Where LLU providers do offer telephony only, this is often supplied through WLR. LLU competition also does not address multi-site purchases, as typically if a business is purchasing call services for multiple locations it will use a supplier who covers all parts of the UK, rather than one which has a limited geographic footprint.

If a geographic dimension is added to the market definition, depending on the variation in the remedies imposed, this could have a serious detrimental impact on some consumers who currently enjoy competitive telephony offerings. Consumers in Hull do not have the same range of competitive offering available to them, as some suppliers believe that it is not feasible to invest in systems to accommodate customers who are hosted on another network. If the UK market were further sub-divided this could also lead to a general reduction in the number of retail provider contesting the market, with only BT and large scale unbundlers (and possibly BT Wholesale Calls providers) being in a position to serve all geographies. We can see from the WBA market that consumers in market 1 (and to a lesser extent market 2), where no/less competition exists are often locked out of the best deals and have to pay considerably more for their service. Even in market 3, if consumers residing in LLU areas don't wish or need to buy a telephony/broadband/Pay TV bundle they may find themselves excluded leaving them with restricted choice. While BT's share of the call origination market has fallen, it remains high and comfortably above the level where SMP remedies are required.

There are also considerable practical difficulties in mapping LLU unbundled areas to the 600 or so Digital Local Exchanges used for voice, with no like for like mapping. Indeed it is highly probably that if geographic deregulation were to occur then CPs serving existing customers in Market 3 type situations may have to utilise alternative infrastructure to continue to serve them, thus leading to a significant reduction in scale and therefore compromising their ability to serve Market 1 & 2 type customers, thus entrenching BT's market power.

Question 10: *To what extent do you think there has been a material change in competitive conditions that would impact our SMP analysis for wholesale call origination on fixed networks?*

While LLU based self-supply has made inroads into demand for BT's call origination product, we do not believe the change has been material. BT's network serves the largest share of the call origination market (including IDA, CPS, BT Retail Volumes & BT Wholesale Calls). The bundling of telephony with broadband and in some cases pay TV has segmented the market from a consumer perspective. Consumers who purchase Pay TV may be content to place their telephony needs in the hands of the same supplier, however there are still a large group of customers who may buy telephony separately. Absent consideration of this, Ofcom would effectively be merging the narrowband telephony, broadband and TV markets into a single market as consumers would be unable to purchase each independently.

In conducting its market analysis Ofcom need to consider both supply and demand factors. There is no practical evidence that LLU based call origination competitive supply has had an impact on the market price, with BT taking no steps to reduce wholesale charges as a result. The removal of a requirement to supply universal call origination would have a devastating impact on many consumers who rely directly on competitive services or experience at a retail level the benefits of price competition while remaining customers of BT.

There are other factors in related markets that Ofcom need to consider should there be any relaxation in the remedies associated with call origination. There are obvious practical issues that would need to be overcome in relation to the mismatch between the footprint of unbundled exchanges and the footprints of BT's DLEs for voice, with direct correlation difficult, with many DLE only partially covered by LLU based supply.

However there is an important issue in relation to the way in which markets interact with each other that must not be overlooked. If BT's call origination obligation was to fall away in certain exchange areas then the DLE interconnect routes used by many CPs may no longer be economically viable, resulting in them being removed due the high cost of renting interconnect extension circuits from BT. This would in turn increase BT's market power in related markets such as local-tandem conveyance and NTS call conveyance, making it harder for other CPs to compete with the ubiquity of the BT network and causing markets that have previously been deregulated to fall back into a state where regulatory intervention would be required once more.

Cumulative Market Power

Ofcom should not underestimate the negative market consequences of incumbent suppliers being able to combine and then harness high levels of market power in adjacent and interdependent markets. Ofcom's approach to regulating markets is conditioned by the European Framework, which prescribes an ordered silo based approach to both defining and regulating markets, however it should not preclude national regulatory authorities from considering the very real consequences of the collective leverage obtained by having market power (even if not considered significant in the context of an individual market) in a range of adjacent/dependent markets.

For example BT's market share in four linked but inter-dependant markets (eg. transit, call origination, local to tandem conveyance & NTS termination) may fall below the critical level deemed necessary for confirming SMP in 3 out of the 4 markets, but the combination of an unrivalled strong market position in all four markets means no other provider is close in their ability to match BT's capability or pricing to effectively challenge it in critical areas of retail or wholesale supply, thus harming the long term interest of consumers. A narrow market by market approach might not flag up these concerns, but taken together it would be sensible for an NRA to conclude that ability of alternative suppliers to compete had been compromised to such an extent that SMP should be found in possibly in 2 or 3 of the markets (with appropriately scoped remedies put in place) in order to guard against this cumulative market power effect. We believe that the current regulatory framework allows Ofcom the latitude to both consider and take action to safeguard the consumer interest through ex-ante remedies should the cumulative impact of market power be considered to be detrimental to competition. We would welcome both acknowledgement from Ofcom over the significance of the phenomenon and clarity on how Ofcom would address this issue through use of appropriate market analysis and remedies.

Question 11: Do you consider that individual CP's number ranges are a relevant factor in defining the relevant market in fixed call termination?

Yes, we believe the same broad principles apply to both the fixed and mobile markets. As call termination on each number / network is effectively a bottle neck service then appropriate safeguards should be imposed to ensure that no CP is able exploit their control over the termination of calls.

Question 12: *Do you consider that there have been any changes in the markets for fixed call termination that would be relevant in our assessment of SMP in these markets?*

No, the competitive landscape is largely unchanged with call termination a bottleneck service requiring remedies to address what is an economic bottleneck. Ofcom's approach to the fixed line reciprocity arrangement for the setting of fixed termination rates will be in place by October 2012, however this will not altered the bottleneck nature of the service.

Question 13: *Does the deployment of NGNs by a number of CPs change the way we might define the markets of wholesale call origination and termination? For example, should the definition of these markets take into account the reduced number of points of interconnection that would exist in an NGN?*

Cable&Wireless Worldwide believes that there is a need to differentiate between the *definition* of the market for wholesale call origination and termination, and the *implementation* of that definition.

We believe the definition of the markets should not vary between NGN and traditional technology: in both cases Ofcom should be examining whether there is a regulatory bottleneck between the nearest point to the end-customer where it is practicable for a CP to interconnect, and the end-customer line.

The implementation of that definition may vary, however. For example, it is entirely plausible that the usage of new technology could mean that a given number/customer could be served by multiple networks, which could lead to the conclusion that there was no market power in termination following the introduction of that technology. To be absolutely clear, Cable&Wireless Worldwide does not believe there is any evidence that this is the case with the introduction of NGN technology, but a rigorous examination of the market should at least ask the question.

More critically, the location of the nearest practicable interconnection point to the end-customer may differ between NGN and TDM technology, thus changing the implementation of the market definition. With TDM technology, the nearest practicable handover has been on the network side of the DLE, leading to 600+ handover points, spread across 2-300 physical locations. With NGN technology, this will change:

- We believe that a proper definition of the market would refer to delivering both the voice channels, and the call control, to the nearest practicable handover to the end-customer. With TDM, inherently these two aspects are one and the same. However NGN technologies separate call control from the underlying media carrying the communication: there could be a need to differentiate between the interconnection point for call control, versus the media. This will very much depend on the architecture adopted by the CP in question: an architecture based upon Session Border Controllers (SBCs) will bundle the two elements together, whereas one based around decomposed Signalling and IP Border Gateways would lead to the two being considered separately.

- For the media, it may well be that it is feasible to move the handover point towards the end-customer (e.g. for an analogue line, towards the MSAN, or for a fibre line towards the PON head-end). However, Cable&Wireless Worldwide does not believe that this will be the case due to scale economies on network border devices, and we consider far fewer handovers and locations will be appropriate. Some would argue that in an IP network, routeing is less deterministic than in a TDM one, hence the actual routeing used by traffic is less clear, so we can make little judgement on where the lowest cost connection is. Cable&Wireless Worldwide disagrees: while it is possible that a minority of packets will use weird and wonderful routeings, the majority will route most logically and incur least cost if handed over at the nearest possible point to the customer.

  The number of interconnect locations will very much depend upon the economies of scale associated with SBCs/Gateways (as appropriate), and on the underlying transport architecture : in the extreme, for example, if there were huge scale economies in SBCs, then a handful of interconnect locations could be appropriate. However, Cable&Wireless Worldwide believes that it is important that Ofcom is vigilant to ensure that scale economies are not used as a cloak to obfuscate the differentiation between call termination and national backhaul, to the detriment (or even destruction) of the transit market. Separate to its duties in market regulation, Ofcom also needs to keep in mind the duties placed on it around ensuring network integrity: the regulatory landscape should not push CPs in the direction of fewer interconnect locations to the extent that the loss of a handover has a significant detrimental effect on network performance.

  For BT, whilst the voice aspects of 21CN may not have been implemented, the underlying transport architecture very much was deployed. Cable&Wireless Worldwide therefore considers that the same factors which led to a conclusion of 20-30 physical handovers for the aborted voice network still persist, and this should form the starting point for any consideration of the issue by Ofcom. Whether these physical handovers equate to the same number of *logical* handovers will depend upon the nature of call control.

- For call control, if an SBC architecture is assumed, then interconnection of media and call control go hand-in-hand.

  An alternative architecture however is to have a separation using Signalling versus IP Border Gateways, with the IP Border Gateways controlled by callservers within the network rather than having their own intelligence. In this architecture, it could be necessary to incorporate consideration of both targeting the correct physical handover, and minimising the callserver usage in the NGN so that the same callserver controls both the Gateway and customer line. This would potentially lead to an approach of N physical handover points, but M logical routes within those handovers, each under the control of a different callserver. On the other hand, it could lead to media being handed over at 20-30 locations, but the call-control interconnect relationship being more centralised.

Cable&Wireless Worldwide considers that technology evolution is moving to a model where SBCs are the norm, but we believe that Ofcom should confirm this as part of the market review process.

In considering this issue, Cable&Wireless Worldwide also believes that Ofcom needs to be vigilant for blurring of competitive and regulated markets. For over a decade, the term "death of distance" has been a mantra, but in reality it is a gross over-simplification. Certainly distance in terms of "miles between customers" has little bearing in network costs any more. However distance in terms of "network elements used in connecting customers" does have an influence, albeit with reducing core network costs the cost of access is more dominant. Ofcom needs to be very careful that costs associated with the central core of a network are not confused with those of getting from a handover to the customer. So, for example, in a hypothetical example where a CP has regulated termination rates based upon the cost of terminating calls from 10 handovers, it is important that those regulated termination rates do not incorporate any costs associated with any commercial service the CP may offer to originating CPs who don't wish to connect to all of those 10 handovers.

Question 14: *To what extent has competition in the Single Transit market changed since the 2009 Review?*

The Single Transit Market is largely unaltered since 2009. While the value of the conveyance element of single transit is relatively small (~£5M), the strategic importance and the entrenched market position of BT remains. Single Transit remains a vital interconnection product that is essential if all users of telecommunications are to continue to benefit from the seamless and cost effective services they take for granted. We believe the network arrangements for voice telecommunications in the United Kingdom are significantly more complex that most other EU member states, with a very large number of market participants, including a sizable tail of smaller operators.

While BT has undoubtedly responded to the competitive threat posed to it by parties directly interconnecting on the smaller number of key high volumes routes by keeping the price of single transit low, if regulation was removed BT's behaviour would be unconstrained on a very large number of uncontested routes and certain traffic types (such as NTS), giving it the potential to significantly increase the price of transit on non-contestable routes without any prospect of a competitive response.

The pricing of Number Portability transit illustrates the dangers of not maintaining a no undue discrimination obligation. Inherently Number Portability transit is something which is restricted to thin routes, because large CPs typically have direct connectivity; as such it represents a good prediction of BT's likely behaviour on thin routes, should regulation be relaxed. BT have set the price of Number Portability transit at approximately three times that of standard transit (where BT face competition on the fat routes), despite the cost of providing this Portability transit variant arguably being lower (as there are no cascade accounting overheads). This is a clear example of the consequences of not maintaining a remedy that distributes the benefits of competition to non-competitive elements of a service.

The scale of the investment required to interconnect with the large tail of UK CPs remains a major barrier to entry, there remains no prospect of the market tending towards competition and competition law is not able to adequately address the future consequences of a deregulated market. These factors mean we are in no doubt that the UK transit market meets each of the three criteria specified by the Commission when assessing if it is appropriate to regulate a market not on the Commission's list.

No CP can eradicate the need to purchase Single Transit (as even those CPs who make use of an alternative A-Z transit service will be indirectly reliant on BT's Single Transit product to reach a very large number of destinations). Single Transit is also an unavoidable product in number porting (in the form of APCCs) and in the NTS market, where CPs have no alternative but to purchase it from BT. It is also telling that BT refuse to purchase inland transit from any other CP, thus requiring all CPs to interconnect directly with BT or absorb the transit costs should they wish to use another CP's network in order to connect with BT.

It remains vital that BT is not allowed to discriminate in the transit market. Without this safeguard BT could easily adopt an approach to undermine the commercial interests of its competitors by charging more in circumstances where no alternative routing options were available resulting in BT being able to leverage its market power in other markets.

We don't believe the continuation of this remedy would be in any way onerous on BT, as it a light touch remedy that seeks to spread the benefits of some competition on the 'fat' contestable routes to the 'thin' and uncontested or compulsory routes. A simple no undue discrimination obligation has worked well, leaving BT free to determine its own pricing providing it does not cherry pick, it is proportionate, providing a base level safeguard whilst not being onerous. BT themselves acknowledge that the obligation represents a lighter regulatory constraint[2].

Question 15: *Do you think that conditions in the LTC/LTT market have changed materially since the 2009 Review? Please explain why.*

No, we believe the competitive conditions in these markets are largely unchanged since 2009, however competition in these markets is dependent on the current element based charging and interconnect arrangement remaining in place. A move to any different interconnect charging structure with different handover points would potentially compromise competition in the LTC/LTT market as it may well lead to greater utilisation of the BT network for inter-switch / inter –network call conveyance and therefore could undermine competition as well as existing alternative infrastructure.

Question 16: *What general non-price remedies do you consider appropriate and proportionate to address an SMP finding (for the services covered by this review, including in Hull)? Please give your reasons.*

There remedies introduced following the last market review were imposed only after careful consideration of the facts. We do not believe any of the remedies imposed were disproportionate, and each has a key role in countering the adverse impact that significant market power has. The need for transparent and accurate accounting separation is essential to demonstrate compliance with any cost orientation or charge control remedies. Likewise the need to provide access on reasonable request, notify pricing in advance, publish a reference offer and technical information are all base level safeguards to ensure that CPs purchasing SMP services in the wholesale market can do so with a degree of certainty and confidence. In most wholesale markets all these remedies will be required, in exceptional cases, like Single Transit the safeguard of no undue discrimination alone would be sufficient to enable the benefits of competition to flow to services that lie outside the economic reach of alternative competitive suppliers.

Question 17: *Where there is SMP, what do you consider to be an appropriate notice period for the services covered by this review?*

The appropriate notice period should be decided upon based on an assessment of what is required, what is practical and what is fair. The key issue in setting notice periods is to give

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[2] http://www.btplc.com/Sharesandperformance/Presentations/downloads/Regulatoryteach-inJun12.pdf [slide 9]

sufficient time to enable all retail CPs to adjust their prices on the back of a wholesale pricing change around the same time, leaving no one party at a disadvantaged. The length of the supply chain itself is a factor, with some CPs buying through one or two chains of carriers, likewise the needs of onward resellers also need to be considered. The current asymmetric arrangements are unfair to certain CPs and it makes sense to try and harmonise notice periods. 90 days may be too long, 28 days is too short as retail changes typically require 30 days, necessitating a time margin on top to both understand and cascade any wholesale rate change. To this end we believe that a harmonized 56 days notice approach is sensible, with services needing 90 days notice dropping to 56 and services currently under a 28 days notice requirement increasing to 56.

It should be noted there is a practical difference between price increases and price decreases, with price decreases being easier to expedite, with end consumers less concerned about their notice requirement and are keen to realise savings. However it is only right that end consumers are given full notice of price increases. To this end 56 days is the minimum time period to achieve this.

Given that the majority of the industry (including all UKCTA members and BT) are apparently aligned on a reciprocal 56 day notice, we hope that BT will agree to amend the appropriate clauses and schedules of the SIA to reflect 56 days' notice and that Ofcom will reduce the SMP condition commensurately on receipt of the appropriate guarantees. If no guarantees are forthcoming then Ofcom should retain the status quo.

There is one administrative problem, regarding the need to turn around individual CP price change notices to BT that are dependent upon their own price changes (e.g. the Benchmark Fixed Termination Rate, or keeping 056 LIECS pricing aligned to Geographic as is the convention some follow) but these are far from insurmountable and it is our understanding that BT has committed to work with industry to resolve these hurdles.

Question 18: *Were we to find that BT has SMP in wholesale call origination, do you consider that CPS and IA remain appropriate remedies?*

Yes. CPS in particular is a vital product, bringing call competition to consumers and spreading the benefits of that competition to consumers who have chosen to remain with BT in the form of lower pricing. CPS works in tandem with Wholesale Line Rental (WLR) to provide a complete retail alternative to a BT exchange line (without the need for unbundling). While Indirect Access usage has tailed off, much of it being supplanted by CPS and BT Wholesale Calls, it remains a valuable product, particularly in the business market where enterprises utilising PBX type equipment can multi-source suppliers for different call types. We would urge Ofcom to retain both remedies.

Question 19: *If we find that BT has SMP in wholesale call origination, do you consider that specific remedies are required for NTS call origination?*

If the proposals set out in Ofcom's concurrent Non-Geographic Call Services review are implemented it will dispose of the need for the NTS call origination condition. Should those proposals not be implemented then it would be appropriate to retain the call origination condition until such time as alternative remedy was in place. Ofcom's focus from this review should be to ensure that any timing gap is plugged appropriately to minimise uncertainty and protect the consumer interest. A regulatory vacuum should be avoided at all costs, as it will damage confidence, hurt consumers and result in a deluge of disputes before Ofcom.

Question 20: Should operators of TDM networks be required to provide an IP Interconnection service?

Question 21: If so, at how many points of interconnection should this be provided and how would this relate to the currently defined wholesale markets?

Question 22: If not, what should be the arrangements for interconnection between IP and TDM networks and associated charges?

Cable&Wireless Worldwide believes that the answers to these questions are entirely separable from those of which technology should be assumed for the cost model. It would not be inappropriate, for example, to have a cost model based upon NGN technology, but the regulated interconnect handover as TDM.

Cable&Wireless Worldwide expects that Ofcom will receive a variety of responses on this issue. Those CPs that have upgraded their network to IP technology will undoubtedly assert that IP is the now the most efficient proven interconnect technology, hence the regulatory assumption should be that all interconnection is IP and anyone using TDM is hanging onto an inefficient technology and should meet the costs of doing so. On the contrary, those CPs with predominately TDM assets will argue that anyone investing in IP will have done so based on a business case which was compelling even including the cost of interworking to IP, hence TDM should be considered the norm and anyone using IP should meet any additional costs.

Both camps' arguments have validity coming from their own standpoint, but cannot be considered to be absolutely valid across all CPs. The argument that IP interconnection is the most efficient proven technology cannot be compellingly made at this time. Interconnect standards have not yet been agreed for the IP technology most likely to be used (see box). Only a small minority of interconnect traffic is handed over on an IP basis, even between those CPs who have deployed IP technology. However, it would be naïve in the extreme to assert that for the period until the next Market Review, TDM technology should be considered the norm. ✂

Standards for IP interconnection

Although the term "IP interconnection" is used generically, this hides a morass of competing protocols. NICC has previously published standards for IP interconnect, but while fit for the purpose that they were intended, they will not form the future of IP interconnection in the UK:

- SIP-I (ND1612, ND1017) was devised to support an interconnect regime supporting the full suite of ISDN services. Call control is essentially governed by encapsulated C7 ISUP signalling, with SIP just being a "wrapper" to carry it. It meets the requirements of interconnecting two networks supporting ISDN, but is over-engineered for networks designed for native SIP call control.
- BICC (ND1639, ND1640) is a UK profile of international standards which form the core of an early release of the 3GPP architecture. It was devised for the interconnection of mobile networks, and even within the 3GPP architecture is foreseen as a stepping stone to an approach which is ultimately SIP based.

It seems apparent that future IP interconnection will be based on a version of SIP that is profiled for the UK market, to incorporate support of regulatory requirements such as 999 access, number portability, access to directory enquiries etc. The internationally standardised versions of SIP do not specify how such national requirements are met, hence the need for the national profiles. Individual CPs have implemented SIP interconnect, but necessarily in absence of a national standard, the CPs have made bilateral agreements as to the mechanism for supporting UK regulatory requirements. A regulated form of interconnect cannot be left in the hands of bilateral agreements.

Under existing regulatory policies TDM network operators are already compelled to provide IP interconnection on Fair & Reasonable terms: against this backdrop a "no" answer to Q.20 would represent a retrograde step. The key decisions to be made are around what constitutes F&R, who should *provide* the interworking capability, who should *pay for* the interworking capability, and who should pay for any additional backhaul (on the assumption of fewer points of handover for IP than TDM).

Cable&Wireless Worldwide does not believe it appropriate to adopt a stance that "we'll know we're in an IP world when we get there": there is a need for more certainty. We believe that Ofcom has a duty to strive to provide regulatory certainty in an uncertain world. We look forward to exploring our ideas on this topic within the market review process, but in summary support a phased approach, with criteria-driven transitions between the phases.

Now: TDM is considered to be "norm" for interconnection between CPs. CPs are able to request IP interconnection, but this need only be provided on F&R terms, and the cost of this is borne by the IP CP.

IP Growth phase: Acknowledgement that both TDM and IP are present in the market and neither is the universally "right" choice. CPs are able to request IP interconnection, at the reduced set of long term IP handover locations (see our response to Q.13). Efficient interworking costs, as determined by Ofcom in its network cost modelling exercise (see our response to Q.25), would be shared equally between the CPs. Additional conveyance costs from the IP handover point to where the call would have been handed over on a TDM basis would be borne by the IP CP on an F&R basis (which we consider would have a cap of fully allocated cost). *Note: although the assumption is interworking from IP to TDM would be carried out by the TDM CP, by bilateral agreement it could be carried out by the IP CP, with interconnect rates adjusted accordingly.* IP CPs would be required to provide TDM interconnect on request, meeting interworking costs themselves.

TDM Decline phase: Acknowledgement that both TDM and IP are present in the market and neither is the universally "right" choice. CPs are able to request IP interconnection at the reduced set of long term IP handover locations, indeed this is the norm. Efficient interworking costs, as determined by Ofcom in its network cost modelling exercise (see our response to Q.25), would be shared equally between the CPs. Conveyance costs from the point of IP handover to the customer would be regulated using the appropriate cost model (i.e. most likely LRIC). IP CPs would be required to provide TDM interconnect on request, but could recover the efficient interworking costs on a regulated basis.

IP phase: IP is considered to be the "norm" for interconnection between CPs. CPs are able to request TDM interconnection, but this need only be provided on F&R terms, and the cost of this would be borne by the TDM CP.

For such an approach to provide regulatory certainty, it would be essential to agree criteria for the transition between the phases. Cable&Wireless Worldwide considers the transition from "Now" to "IP Growth" could be the commencement of the next charge control period. We have ideas for establishing the transition points between the subsequent phases, which we would be happy to share with Ofcom over the coming months.

Question 23: *If we find that BT has SMP in wholesale call origination, which, if any, pricing remedy do you believe would be appropriate to address such SMP? Please explain why.*

Cable&Wireless Worldwide would favour the continuation of concurrent cost orientation and charge control remedies. It is clear that competitive entry into call origination (in the form of full LLU) has had no impact on BT's wholesale price for the service to date. Ofcom therefore need to exert a charge control in order to harness efficiency incentives on BT and keep pricing tracking towards the underlying efficient cost of supply. A safeguard cap is not appropriate for a market so vital in the development of retail competition and any notion that Competition Law alone is sufficient is immediately undermined by the length and complexity of proceedings in the current Wholesale Calls investigation.

Question 24: *If a charge control remedy is appropriate for call termination, do you agree that we should follow the 2009 EC Recommendation and cap FTRs at pure LRIC?*

Cable&Wireless Worldwide agrees that Ofcom should follow the EC Recommendation of using pure LRIC. It is our understanding that regulators should follow this Recommendation unless there are compelling reasons to the contrary. At this stage, we are unaware of any reasons to deviate from the Recommendation, and note that it would create a market distortion were MTRs to be based on pure LRIC, while FTRs are based on some other costing approach, other than for a transitional period.

Question 25: *The 2009 EC Recommendation states that the core network cost model "could in principle be Next Generation Network (NGN)-based". Do you consider this to be an appropriate approach to cost modelling for this review*?

Cable&Wireless Worldwide agrees that using NGN-based technologies to build the core network cost model would be an appropriate approach, but at this stage we are uncertain as to whether it will be the most appropriate approach.

Ofcom is essentially faced with a choice between two approaches: use a cost model based on TDM cost metrics (reflecting what is currently used by BT), or construct a cost model based upon NGN technologies. The former has the advantage of being possible to calibrate based upon empirical evidence, the latter is arguably based around what would be most efficient for a greenfield deployment (Note: "most efficient" does not necessarily equate with lowest cost in the immediate term…when new entrant CPs have deployed NGNs, they will have done so based on a mixture of cost-drivers and desire for a future-proofed solution).

Cable&Wireless Worldwide believes that regulated prices should be based on a model that yields the lowest possible cost. Therefore, we consider the only appropriate approach is to construct both TDM and NGN models (in the case of NGN including within it technology interworking costs), and ultimately use the one which yields the lowest cost. Whilst we acknowledge that this will considerably increase the regulatory workload (although to some degree the TDM model will be an update of an existing model rather than a blank sheet of paper), we consider that it is the only way of being sure that the most efficient approach has ultimately been adopted.

Question 26: *What in your view would be the best way to calibrate such a model, given that BT does not yet operate a national NGN?*

Cable&Wireless Worldwide is sympathetic to this quandary. However, it cannot be a reason to not adopt an NGN-based cost model, otherwise ultimately NGN-based costs will never be used until such a time that BT chooses to deploy a national NGN : it cannot be acceptable for "the tail to wag the dog" and BT's deployment strategy drive regulatory policy.

The European research undertaken for Ofcom by AnalysysMason similarly shows that other regulators have similarly been grappling with this issue: the French regulator appears to be most advanced, but we are not entirely sure we understand the relative numbers derived.

Cable&Wireless Worldwide believes the only option available to Ofcom is to use whatever empirical evidence is available. We consider possible sources are:

1. Information sharing with other European regulators

2. Usage of cost data from national-scale CPs in the UK who've adopted NGN technology: we would particularly point to TalkTalk and Sky as potential references

3. Usage of cost data from BT based upon the projected costs of the aborted 21CN deployment: our understanding is the transition was halted due to migration issues and costs, rather than outright cost of the network itself.

Question 27: *The 2009 EC Recommendation recommends the use of economic depreciation "wherever feasible". Do you consider this to be an appropriate approach to cost modelling for this review?*

Given the Competition Commission's pronouncements on the issue and in the absence of any sound alternative approaches, 'Original ED' would be a sensible approach to implementing the recommendation.

Question 28: *With termination rates set on the basis of pure LRIC, from which other services should common costs previously recovered from fixed call termination now be recovered?*

It is a fundamental tenet of pure LRIC-based termination rates that common costs are borne from other sources, notably outbound call charges. Of these call charges, many are at a retail level hence it is a matter for each CP that's subject to termination rate regulation, how they recover the common costs in their retail tariffs. However, there are some outbound calls which do not have their costs recovered by retail tariffing, notably CPS and IDA (assuming these remain mandated), NTS call origination (until such a time that two part charging is introduced under the NGSC initiative, at which point it becomes part of the Access Charge hence a retail issue), and Freephone call origination. Cable&Wireless Worldwide acknowledges that the common costs removed from call termination will need to be smeared – equally – across all origination minutes, and this will result in an increase to certain regulated call origination charges. If appropriate, then other service product areas could also bear a share of the displaced common costs. Further thought should be given to this issue within the consultation.

Question 29: *How soon would stakeholders consider it appropriate and practicable for FTRs to be aligned to pure LRIC?*

Cable&Wireless Worldwide notes that the UK is already late in basing regulated termination charges on pure LRIC. However, this of itself should not be used as a justification to introduce a step change to termination rates to move to pure LRIC with immediate effect: such an approach could be detrimental both to the commercial viability of CPs, and to end consumers who consequently incur sudden changes to retail charges. In the mobile market, we note that the Competition Commission accepted the argument for a three year transition from LRIC+ to pure LRIC: this would seem appropriate in the fixed narrowband market too, but until the absolute numbers have been calculated, it is not possible to be definitive about whether a more rapid transition is possible.

Question 30: *Do you agree that we should follow the 2009 EC Recommendation and regulate the termination rates of all fixed CPs at a symmetric level?*

Cable&Wireless Worldwide agrees with the Recommendation, but notes that for symmetric rates to apply, the interconnection arrangements similarly need to be symmetric. The regulated termination rate for BT assumes handover to the correct terminating node, but also critically that calls are delivered at the relevant In Span Interconnect (ISI) point, which is typically within 100M of the BT site, i.e. is at the BT end of the link. For symmetric rates to apply to other fixed CPs, similarly calls should be handed over to the correct terminating node, at an ISI point within 100M of the CP site. Where the originating CP does not do so, for example in the case of BT using the handover outside its own site, we urge Ofcom to confirm that the terminating CP is at liberty to charge for the capacity to get to the appropriate ISI point.

Question 31: *Is it more appropriate to achieve symmetry of fixed termination rates by imposing a 'fair and reasonable' condition or a charge control on all providers with SMP in fixed call termination?*

Cable&Wireless Worldwide believes that Ofcom should take an empirical evidence-based approach to this question. In principle, we agree with Ofcom's approach of imposing detailed regulation only on BT, with everyone else subject to an F&R condition: this approach minimises the regulatory burden.

However, we are acutely aware that in the mobile sector, there is a substantial tail of small CPs that are failing to comply with the benchmark F&R rate advised by Ofcom. In practical terms, it is often not worth originating CPs disputing these rates, because the sums of money involved per-originating-CP are not particularly material (especially when compared to the overhead of managing a formal Dispute). The potential gains for the terminating CP are significant, though, and even if a Dispute is generated, the only financial penalty seems to be an instruction to retrospectively use the benchmark rate. As such, it is a one-way bet for the terminating CP.

In the fixed sector, the new regime for F&R being based around BT LES rate will be introduced in October of this year. Cable&Wireless Worldwide welcomes the initiative by BT to issue OCCNs to all TCPs, setting their FTR to the F&R rate unless the TCP explicitly rejects it. However, we will only know for sure in the autumn whether fixed TCPs generally comply with Ofcom's F&R guidance, or seek to push the boundaries as has happened in the mobile sector. Due to the sheer volume of fixed TCPs, if a similar situation does arise, then we believe that Ofcom will have to consider imposing regulated rates on all CPs set symmetrically to the BT rate. Cable&Wireless Worldwide does hope that this can be avoided, but Ofcom should be prepared to take this measure if necessary.

Question 32: *Are different "time-of-day" rates likely to be important in setting efficient wholesale call rates for call termination and origination during the period from 2013-2016?*

Question 33: *Is there any reason not to adopt a maximum ceiling for regulated wholesale call conveyance rates – similar to our approach in the regulation of mobile call termination?*

Cable&Wireless Worldwide believes that the current system of "time-of-day" rates for regulated pricing is past its sell-by-date. Inclusive packages are increasingly the norm both in the fixed and mobile sector. Where packages and retail tariffs for individual minutes do differentiate based upon time of day, this is typically driven by the need to ripple through differential interconnect charges. CP termination rates are typically set on a reciprocal basis with BT's, but there is no correlation between the busy hour profile experienced on CP networks and those on BT, because inherently the business/residential mix for those networks is not the same as BT's. Arguably, by having an interconnect charging time-of-day gradient based upon BT's retail traffic levels, this allows BT's retail units – however inadvertently – to dictate the retail pricing policies of competing CPs:

1. BT's retail units set their pricing, which drives the traffic profile, hence NTG on BT's network

2. The NTG sets BT's termination rate

3. The same NTG is mirrored across industry via reciprocity arrangements

4. As termination rates are a significant cost element in the pricing of retail geographic calls for competing CPs, their retail tariffs are heavily influenced by the NTG hence by BT's retail pricing.

It is of course appropriate that CPs set their retail pricing with one eye on that offered by competitors : it's not so appropriate that they do so because <u>their cost base</u> is driven by a competitor's retail pricing.

Cable&Wireless Worldwide also believes that there is merit in having equivalent regulation in the fixed and mobile sectors, acknowledging that although they are quite separate markets, there is a degree of substitutionality between the two.

Therefore, in conclusion we are minded to support the adoption of the approach used for MTRs, i.e. that CPs are given a benchmark rate, above which they are not allowed to price, but they have flexibility to price below this. In practical terms, the most likely outcome of this is flat pricing of rates, but there would not actually be any regulatory mandate to do this.