Vodafone input to Narrowband Markets Review:

Technology choice and 24 hour rates

1 Introduction

In Vodafone's submission to the Fixed Call Origination & Termination Call For Inputs, we introduced material relating to technology choice for interconnection, and the practice of wholesale charging on a Time of Day basis. This contribution elaborates on this, in light of subsequent developments.

2 Technology Choice

Ofcom's approach with respect to the choice of technology for interconnect routes has been to take a hands off approach, leaving the matter to be resolved between interconnecting parties. The logic has been that where there is a heterogeneous choice of technologies, the action of interworking from IP to TDM (or vice versa) is a contestable service, hence the originating/transit Communications Provider (CP) can choose whether to carry out the interworking function, get the terminating CP to do this on their behalf, or indeed get the function carried out by a third party.

In the last market review, we supported this stance but argued that Ofcom should set some criteria to determine when IP interconnection should be considered the norm so that the slowest transitioning terminating CPs could not impose costs on originating networks via their technology choices. Vodafone considers that Ofcom should acknowledge that we are now at this stage, and set regulation around an assumption of IP interconnection;

1. The bulk of networks are either already IP, or have a defined transition path to IP.
2. Laggard TDM networks are imposing inefficient costs onto the mass of networks that have migrated or are migrating to IP.
3. The current situation is open to being gamed by TDM-based CPs to leverage market power in termination to competitive transit markets.
4. Regulation should thus acknowledge that modern networks are IP.

2.1 Modern networks are IP-based

It is increasingly difficult to source network equipment based upon anything other than IP. Many networks such as those of TalkTalk, Sky and Gamma are built solely upon an IP-fabric. Vodafone's fixed network is a heterogeneous one, consisting of both TDM and IP technology, but we have a [✂]programme underway to

replace it fully with the most modern IP equipment. In May, BT publically stated that its network will be fully IP by 2025[1] and Virgin's business customers are already served using IP[2]. The idea that IP is in some way a technology of the future can no longer be sustained: it is TDM that is a technology of the past, and those CPs that do retain it are doing so only to "sweat assets" – this isn't something that should be rewarded by regulation.

2.2 Laggard CPs impose costs on efficient ones

Vodafone fully supports the right of CPs to choose the technology deployed in their network, and to determine their pace of migration to IP. However, this cannot be at the expense of imposing costs on other CPs, especially competitors.

As outlined above, Vodafone is making a massive commitment to modernise its fixed network. In its information gathering exercise, Ofcom has sought evidence on the extent of migration of interconnects to IP, both current and over coming years. We have been clear that [✂]. The main exception is BT. BT is keen to migrate our services to an IP interconnection, but only to an unregulated IPEX capability, which has a default pricing set way in excess of regulated rates. [✂]The costs do not simply extend to gatewaying traffic, however. An efficient IP network has fewer, larger network elements, hence there is a need for fewer interconnect routes at fewer locations. During the aborted 21CN exercise, there was a protracted debate on this with a final agreement of 28 handover locations into BT network. Events in the meantime could imply fewer handovers are appropriate. This is in contrast to a need to connect to 600+ Digital Local Exchange (DLE) TDM handovers in the BT network to secure the benchmark termination rate, spread across high tens/low hundreds of physical sites. Although interconnection between CP and BT networks are on an In Span Interconnect (ISI) basis this does not mean, as may be inferred, that the handover falls half way along the interconnect route between the CP and BT site. In reality, the handover is within 100M of the BT site, meaning CPs are forced to build out to a large volume of BT sites, and, critically, to do so using the SDH transmission technology that underpins TDM voice. CPs are therefore in the position of having to support geographically extensive SDH networks, at a time when their core networks have been transitioned to IP technology. It is this overhead which drives additional cost in CP networks, as much as the more overt gateway requirements.

[1] http://commsbusiness.co.uk/news/bt-set-firm-date-to-switch-off-isdn-network/

[2] http://www.virginmediabusiness.co.uk/Products-and-solutions/Telephony-Solutions/SIP-Trunking/

2.3 Effect on transit markets

In the accompanying paper to this submission, we highlight that the competitive transit market is finely balanced. Regulatory inaction on the issue of interconnect technology also has an impact on this market.

[✂]Vodafone relishes competition, if it is fair. In a competitive market, scale economies are a legitimate winning strategy. However, the situation we face here is not one of scale economies: even if Vodafone was carrying an identical amount of traffic to BT, it is the requirements of their TDM architecture forcing us to have a more distributed network that limits the efficiency of our network. The decisions taken by Ofcom in a bottleneck market are having profound implications for the operation of what are believed to be transit markets.

[✂]

2.4 Regulation should acknowledge the primacy of IP

For the reasons above, Vodafone continues to believe that the time is now ripe for Ofcom to acknowledge that we are at the tipping point for adoption of IP technology, and so terminating networks that haven't migrated from TDM should no longer be able to recover the costs of interworking. We believe that the benchmark rate should apply for IP interconnection.

If an originating network wishes to interconnect to an IP terminating network using TDM, then this is acceptable, but the interworking costs would be subject to commercial negotiation with the presumption that the TDM network should meet the costs. For BT, this would mean that call origination[3] and call termination should be on the basis of handover at a number of interconnects suited to IP transmission[4], and regulated at whatever benchmark Ofcom determines from its modelling exercise. BT could of course request originating and transit CPs to handover traffic at its DLEs as TDM, but it would be for BT to negotiate with CPs about how the additional costs of doing this would be recovered.

As we set out in the initial Call For Inputs, we are not opposed to a transition period, but this matter cannot be left for the market to decide.

[3] Assuming continued regulation
[4] The IPEX service would seem to provide an exemplar for what that number should be.

3 24hr rates

Ofcom routinely carries out its regulatory analysis on the basis of 24hr rates. Vodafone has commented to Ofcom that although we support this, it presents difficulties as we are not able to correlate the regulated rates determined by Ofcom, and the Day/Evening/Weekend (D/E/W) prices subsequently offered by BT [✂]

In our submission to the Call For Inputs, we made it clear that we could see no justification for continued usage of D/E/W pricing, and alignment with the mobile termination rate approach of a flat 24hr regulated rate was the way forward. Since this submission, two things have happened to reinforce our position:

- As set out in the accompanying submission, BT has changed its non-regulated wholesale prices to remove the time-of-day split. Given many of these incorporate a regulated rate[5] on which BT is maintaining time-of-day charging, the implication of this is that BT is actually charging *more* for the unregulated component at evening/weekend than it is during the day. This demonstrates both that BT is comfortable with a 24hr rate, and that the notion of peak pricing to manage demand is an absolute fallacy.
- Ofcom has issued its provisional conclusions on the matter of portability conveyance charges made by BT to Vodafone and Gamma. Regardless of whether the final outcome of the dispute aligns with this interim position, what is of note for the Narrowband Market Review question of 24hr rates is that Ofcom determined the Average Portability Conveyance Costs (APCCs) incurred by BT on a 24hr basis. They did this by looking at the specific volumes and profile of exported traffic to Vodafone and Gamma, and it is clear that the intent is that if BT does not charge a 24hr APCC, the D/E/W rates charged should be reflective of the export traffic to Vodafone and Gamma rather than a network-wide profile[6].

Vodafone considers that both of these developments reinforce the need for a move to 24hr charging. On the one hand, BT is seemingly acknowledging that D/E/W charges have no role to play in a competitive market, so it is thus difficult to see why they should in a regulated market. On the other hand, the draft APCC

[5] e.g. call termination to a tandem node involves unregulated local-tandem-conveyance plus regulated fixed call termination

[6] We are seeking that Ofcom confirms this in the final outcome of the Dispute, but the alternative of BT simply applying its standard Network Tariff Gradient profile to the recommended 24hr rate is that they would recover considerably in excess of the (unique to Vodafone) 24hr APCC rate laid down in the Provisional Conclusions.

dispute implies that if there is a deviation from 24hr rates, it would need to be based upon the specifics of an interconnecting network's traffic profile rather than a generic one.

Vodafone continues to believe that it should be for those who advocate pricing flexibility, rather than a flat 24hr rate, to justify why they should have that regulatory freedom – particularly if their own commercial services have no such distinction.