Welcome

Stuart McIntosh, Group Director, Competition
Agenda

• Business Connectivity Market Review  Gideon Senensieb

• Charge control update: LLU/WLR, MTRs and WBA  Stuart McIntosh

• Spectrum update  Graham Louth

• UHF spectrum strategy  David Harrison

• Questions  Stuart McIntosh
Business Connectivity Market Review

Gideon Senensieb, Project Director
Business Connectivity Market Review

It’s about leased lines

- Businesses
- Public authorities
- Hospitals
- Universities
- Schools
- Libraries
- etc.

Mobile operator’s network

Broadband ISP’s network
Leased lines use a variety of technologies

Traditional interface (“TI”) – legacy: some analogue; digital from 64kb/s to 622Mb/s

Alternative interface (“AI”) – up to and including 1Gb/s, usually Ethernet

Multiple interface (“MI”) – Ethernet faster than 1Gb/s; and wavelength-division multiplex
London is more competitive

BT’s network faces more competition in parts of London than elsewhere in the UK
Growing demand for bandwidth

- Demand is shifting to higher bandwidths
- TI legacy is eroding, more quickly at higher bandwidths
- New installations are primarily AI
- MI volumes are still much smaller than AI, but growing fast
Main proposed findings on BT’s market power

**TI**
Large but declining installed base

- SMP in trunks now confined to regional routes
- Otherwise no change. SMP in:
  - wholesale and retail services <=8Mb/s in all UK
  - other wholesale services <=155Mb/s outside London

**AI**
Large and growing rapidly
Better prospects for future competition in London than elsewhere

- SMP outside London
- SMP also in London, but recognise different competitive conditions

**MI**
Still comparatively small but growing very rapidly.
Some competition from other networks, especially in London.

- SMP outside London only
Main proposals for remedies to BT’s SMP

**TI**
Largely unchanged
Maintain established set of wholesale remedies, including charge control

- No charge control on national trunk routes
- Safeguard price cap on retail analogue services

**AI**
No change outside London.
Recognise better prospects for competition in London

- Charge control outside London
- Lighter-touch price control within London

**MI**
Regulate for the first time, but only outside London

- Confine charge control to Ethernet faster than 1Gb/s
- No charge control on most MI services, which use wavelength-division multiplex
Next steps

• Leased Lines charge controls consultation to be published shortly

• Business Connectivity Market Review consultation closes on 24 August

• Subject to both consultations, we aim to publish a final statement and for the new controls to become operational in calendar Q1 2013

• New controls to run for three years
Questions?
Charge control update:
- LLU/WLR
- Mobile Call Termination Rates
- Wholesale Broadband Access

Stuart McIntosh, Group Director, Competition
LLU/WLR Charge controls

- New controls to run to March 2014 (3 years from expiry of last controls)
- Individual controls on core rental services for MPF, SMPF, WLR and other key migration services
- Separate baskets for LLU ancillary services

<table>
<thead>
<tr>
<th>Service</th>
<th>Previous charge</th>
<th>Charge from 1 April 2012</th>
<th>Second year control</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPF rental</td>
<td>£91.50</td>
<td>£87.41</td>
<td>RPI-5.9%</td>
</tr>
<tr>
<td>SMPF rental</td>
<td>£14.70</td>
<td>£11.92</td>
<td>RPI-15.9%</td>
</tr>
<tr>
<td>WLR rental</td>
<td>£103.68</td>
<td>£98.81</td>
<td>RPI-7.3%</td>
</tr>
</tbody>
</table>
Why the direction of prices has changed

Target MPF price is above the start point of the last control...

...but is below previous target as:

- Reduction in WACC from 10.1% to 8.8%
- Greater efficiency savings
- Reduced rates bill
- New copper/duct valuation
- Other small variations
LLU/WLR Charges appealed by both sides

• **BT appeal**
  – Focus on Regulated Asset Value (RAV)
  – Currently includes treatment of pension deficit repair payments and cost of capital estimates as for WBA
  – Also a number of other cost allocation issues

• **Sky/TalkTalk Group appeal**
  – Precise grounds for appeal to be refined after disclosure stage
  – Current grounds are volumes estimates, BT rates allocation, fault rate estimates, line length estimates, copper scrap and indexation of post 1997 duct investment

• Timing is not yet clear due to the interaction between the appeals
Mobile call termination rates after the CAT judgment

- March 2011: Ofcom sets rates using pure LRIC. Appealed to CAT (and referred to CC)
- 11 May 2012: CAT upholds pure LRIC but quickens ‘glide-path’. Mobile termination rates now set as per CAT judgment.
- Everything Everywhere has leave to appeal CAT judgment to Court of Appeal.

Note: CAT glide-path assumes no retrospection and does not include the period 1 April 2012 to 10 May 2012 when rates were still being set using Ofcom’s glide-path.
WBA July 2011 Statement

• This relates to the wholesale broadband access product sold to communications providers.

• This enables providers without infrastructure in rural areas to compete with BT.

• The WBA charge control was the first to take account of Ofcom’s Pension Guidelines.

• In addition, we estimated the cost of capital for BT Group, Openreach and the Rest of BT as part of the charge control.
Recent WACC estimates

<table>
<thead>
<tr>
<th>Year</th>
<th>BT</th>
<th>Openreach</th>
<th>Rest of BT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>10.6%</td>
<td>10.1%</td>
<td>11.0%</td>
</tr>
<tr>
<td>2009</td>
<td>9.2%</td>
<td>8.8%</td>
<td>9.7%</td>
</tr>
<tr>
<td>2011</td>
<td>9.2%</td>
<td>8.8%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

**Ofcom estimate of WACC**

- Charge controls ensure that BT recovers its costs including its cost of capital – therefore we needed to estimate BT’s cost of capital.
- We used the ‘Rest of BT’ rate of 9.7% in the WBA charge control.
WBA appeal concluded

- BT appealed the WBA statement in relation to:
  - The treatment of pension deficit repair payments; and
  - The cost of capital estimate.

- The Appeal has recently concluded and the CAT has dismissed the appeal on both grounds.
Questions?
Spectrum update

Graham Louth, Director of Spectrum Markets
What spectrum is to be auctioned?

- 800MHz and 2.6GHz bands
- Equivalent to three quarters of the mobile spectrum in use today
- 80% more than was auctioned in 2000
- 800MHz available across much of UK from beginning of 2013 (subject to DTT mitigation), available across whole of UK from Q4 2013 (following DSO, and clearance of channels 61, 62 and 69)
- 2.6GHz band available following radar remediation – from H1 2013
Overview of mobile spectrum bands
Who holds what today?

- **O2**: 2x10MHz, 2x17.5MHz
- **Vodafone**: 2x15MHz, 2x17.5MHz
- **Everything Everywhere**: 2x20MHz, 2x45MHz
- **H3G**: 2x15MHz
- **To be divested by EE**: 2x15MHz
- **To be awarded by Ofcom**: 2x30MHz, 2x70MHz, 50MHz

- 2.6GHz unpaired
- 2.6GHz paired
- 2.1GHz unpaired
- 2.1GHz paired
- 1800MHz
- 900MHz
- 800MHz
What are our objectives?

• To secure the best use of this spectrum for the benefit of UK citizens and consumers

• To promote competition, encourage investment and deliver wide coverage of services

• Achieved through a combination of measures to promote competition and ensure good future mobile coverage
Next steps – 800MHz and 2.6GHz auction

• Statement on auction rules and licence obligations before end of summer
• Auction process to begin before end of Q4; aim to invite applications before end of year, with bidding in Q1 2013, and licences issued shortly thereafter
• Mobile operators expected to start rolling-out 4G networks from the middle of next year, and to start offering 4G services to consumers before end of next year
• Expect 4G services to be widely available across the UK a few years later
Next steps – 1800MHz liberalisations

• Currently considering responses to notice of proposed licence variation

• Working to reach a decision as soon as reasonably possible
Questions?
UHF spectrum strategy

David Harrison, Strategy, Economics and Technology Group
Mobile data usage is growing rapidly

Mobile data volumes and revenue growth

Data volumes transferred over mobile networks increased by 67% in 2010

Penetration of different mobile devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smartphones</td>
<td>43%</td>
</tr>
<tr>
<td>Tablets</td>
<td>11%</td>
</tr>
<tr>
<td>3G Dongles</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: Ofcom Technology Tracker Q1 2012

Smart phone sales nearly tripled between Q1 2009 and Q1 2011

Source: Ofcom Communications Market Report 2011
Ways to address increased demand

**Total mobile network capacity**

**More Spectrum**
- ‘More MHz’
  - X 7 to 13 increase
    - In total amount of additional harmonised mobile broadband spectrum

**More efficient technology**
- ‘More bits per MHz’
  - X 3 to 10 increase
    - Estimated increase from techniques supported by LTE advanced

**More sites**
- ‘Smaller number of users share the capacity of each site’
  - 10 - 30% increase in macro sites and much larger increases in small cells
    - Practical constraints and cost implications are likely to make this the least favoured option for mobile operators

**Offloading**
- Reduces data carried on mobile network core
  - Almost half of the data generated by mobile devices is routed through fixed networks

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700MHz harmonisation for mobile broadband

But its release would significantly reduce the amount of spectrum available for DTT
600MHz use for DTT could enable 700MHz release

- Consultation closed 7 June, statement Autumn 2012
Questions?
Current or planned Ofcom work

• Next round of market reviews / charge controls with respect to local access & broadband markets – covering NGA/LLU/WBA/WLR

• Strategic review of non-geographic numbers with a decision on most significant areas of the market

• Application of cost orientation and proposals for new regulatory reporting framework

• Cost of capital review
Questions?
Speaker biographies
Stuart McIntosh

Stuart McIntosh joined Ofcom in January 2008 as Group Director of Competition.

Stuart was previously a Strategy Partner in the Communications practice at IBM in the USA. After graduating from the LSE, Stuart joined the UK Government Economic Service. He then spent two spells with management consultants Coopers & Lybrand/PWC – where he led PwC’s Telecoms Consulting Practice - separated by four years at BT as Head of Business Economics. Stuart then spent four years at boutique consultancy Adventis before joining IBM Europe in 2003, transferring in 2005 to New York.
Gideon Senensieb joined Ofcom’s Competition Group in 2006. He is currently directing the review of the business connectivity market.

Previously he directed the technology and platform operations of Video Networks Limited, a company he co-founded which launched one of the first commercial broadband and IPTV services, Homechoice. The company also pioneered the application of ADSL technology and of local loop unbundling in the UK.

Earlier in his career he was responsible for communications sector consulting at The Generics Group, and worked in telecommunications and electronics R&D at the PA Consulting Group and at ITT.
Graham Louth

Graham Louth joined Ofcom, the UK's converged communications regulator, in December 2003 as Director of Spectrum Markets, tasked with making the changes necessary to allow spectrum users to decide how to make best use of this invaluable national resource, rather than being dictated by the regulator.

He is now Director of Spectrum Policy, Mobile and Auctions, in which role he is responsible for ensuring that existing and prospective mobile network operators are able to make the best possible use of existing spectrum, and have access to critical bands of new spectrum such as the 800MHz and 2.6GHz bands, so as to be able to deliver the best possible mobile services to UK consumers and citizens at competitive prices.

Prior to joining Ofcom, Graham spent over 10 years working as a consultant with the leading telecoms strategy advisors Analysys, ultimately as head of their regulatory practice worldwide. Whilst at Analysys Graham played a leading role in the development of regulatory thinking and practice in a number of economic and policy areas, working closely with clients such as the European Commission, the IDA in Singapore, and Oftel in the UK.
David Harrison

David joined Ofcom in 2003.

His role is consists of providing technical leadership across a diverse range of policy areas including: Spectrum, Digital Radio Switchover, Network Neutrality and Online Copyright Infringement.

Prior to working at Ofcom David worked in a variety of public and private sector positions in Europe in management and technical research and development roles.

Key areas of expertise include, broadcast and mobile transmission and monetisation technologies.

David’s academic background is Electronic Engineering.