BluePhone – BT’s killer app?
Fixed-mobile convergence in the UK

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British Telecom and Project Bluephone

Trends enabling convergence
  – Technological
  – Social
  – Regulatory

Dubious product economics

Impact on value chain
  – Benefits to cellular partners
  – Alternative operator models
British Telecom at a glance

- Incumbent PTT in the UK
- Largest access infrastructure – 24 million homes
- 19.5 million residential voice customers
- 5.1 million business voice customers
- £18.5 billion group revenue
  - £13.5 retail revenue
BT facing attack on multiple fronts

- Secular decline in traditional revenue base
  - Group revenue down from £20.5 billion in 2002 to £18.5 billion in 2004
- Line loss and call leakage
  - Cellular
  - Indirect Access resellers (4.1 million CPS lines)
- Regulatory pressure
  - LLU
  - Pressure to split retail from wholesale

BT must respond to these challenges

- Multiple initiatives
  - 21st Century network
  - Re-enter mobile market
  - Video
  - Bluephone

Source: BT Plc  Q2 04 Quarterly results, Oftel
BluePhone

- BT’s fixed/mobile convergence solution
- BT taking global lead in convergence
  - Founding member of Fixed Mobile Convergence Alliance
- Soft Launch in 2004 December, full launch in spring 2005

- Partnership with Broadcom for chip, Motorola for handset and Vodafone for mobile service
Fixed / mobile convergence

- Single handset and telephone number supports both fixed line and cellular.
- Calls routed to fixed-line network within range of Bluetooth access point
- Out of range calls routed to cellular network

Source: BT Plc
Social trends driving convergence

UK mobile penetration

- High mobile penetration today vs 10 years vs 20 years ago

Telco preference by age

- Whole generation grown up with cell phones

Source: mobilecomms-technology.com; Ofcom 2002
Technological progress (Handset Evolution)

- Handsets were bigger than regular cellular phones.

- Requirements for handsets
  - Single phone for cellular and local wireless.
  - Same form factor as cellular phone.

- Currently, both chipsets and handsets are available.
  - Motorola handset using Broadcom Bluetooth chipset.
  - Range: 25 m indoors, 60 m outdoors.

Source: BT Plc
## Alternative Technology Models

<table>
<thead>
<tr>
<th></th>
<th>WiFi (IEEE802.11)</th>
<th>WiMax and BWA (IEEE802.16, 802.20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pros</td>
<td>High Data Rate</td>
<td>High Data Rate</td>
</tr>
<tr>
<td></td>
<td>Affordable Chipset</td>
<td>Long Range</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate Mobility</td>
</tr>
<tr>
<td>Cons</td>
<td>Short Range</td>
<td>Chipset N/A</td>
</tr>
<tr>
<td></td>
<td>Low Mobility</td>
<td>Power Consumption</td>
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<td></td>
<td>Power Consumption</td>
<td></td>
</tr>
<tr>
<td>Implication</td>
<td>Potential to replace BlueTooth in the handset</td>
<td>Potential to replace cellular in urban areas</td>
</tr>
</tbody>
</table>
Regulatory impetus for convergence

- Regulatory driven discrepancy between fixed and mobile termination rates creates economic arbitrage opportunity
- Key difference between Europe and US

1. Based on published per minute call charges; actual charges may vary depending on choice of package

Source: BT Plc, Vodafone, Comptel
## Who are the right customer?

<table>
<thead>
<tr>
<th>Resident Customers</th>
<th>SME Businesses</th>
<th>Enterprise Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪High risk of churn</td>
<td>▪Moderate risk of churn</td>
<td>▪Low risk of churn</td>
</tr>
<tr>
<td>▪Significant lifestyle and cultural factors</td>
<td>▪Existing PBX investments act as deterrent</td>
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</tr>
<tr>
<td>▪Segment represents more than 50% of voice revenue</td>
<td>▪More open to voice and data convergence via VoIP</td>
<td>▪Enterprises are slow to adopt new technology</td>
</tr>
<tr>
<td>▪Today, high mobile tariffs keep them from switching</td>
<td>▪Latent demand for converged service</td>
<td>▪More open to voice and data convergence via VoIP</td>
</tr>
<tr>
<td>▪Consumers can save up to 50% on home-based mobile call costs using Bluephone¹</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Consumer and SME segments more likely to take up BluePhone

1. Forrester Report 2004
Customer value proposition

- **Convenience**
  - Customers value mobility
  - Single phone number
  - Single handset and address book
  - Convenience cited as “essential” or “very important” to 80% of UK telecoms users

- **Cost benefits**
  - Ability to control expenditure “essential” or “very important” to 70% of UK telecoms users

"We see huge pent-up demand for simplicity"
- Steve Andrews
  (Head of Mobility and Convergence, BT)

1. Survey conducted by National Audit Committee, September 2002
Source: Strategic Review of Telecommunications Phase 1 Consultation, Ofcom
IDG News Service, 06/08/04
Residential product economics

<table>
<thead>
<tr>
<th>Flat Rate Price</th>
<th>£5.00</th>
<th>£10.00</th>
<th>£15.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental gross margin</td>
<td>£0.52</td>
<td>£3.02</td>
<td>£5.52</td>
</tr>
<tr>
<td>Payback (months)</td>
<td>465</td>
<td>80</td>
<td>44</td>
</tr>
<tr>
<td>5-year rate of return</td>
<td>-63%</td>
<td>-11%</td>
<td>13%</td>
</tr>
</tbody>
</table>

- ARPU upside not driven by usage
  - Likely users high-ARPU customers, flat rate 24x7 packages (£25.50)
  - Incremental calling limited usage based revenue impact (mobile termination, international, premium rate only)

- Modeling assumptions
  - £40 SAC, £200 CPE
  - 30% calls to mobile
  - CellCo shares 50% gross package revenue
  - 200 additional minutes per month (c.20% increase)

Residential product economics poor on a standalone basis

Source: Team analysis
Reducing churn is not enough

- Churn reduction creates substantial improvement in customer lifetime value (5-20%)
- Net increase in value not sufficient to offset upfront investment, even with significant reduction in churn
- BluePhone likely to destroy value for residential customers

1. Baseline assumes £22 monthly ARPU, 15% annual churn, 10% WACC, 30% tax rate
Source: BT Plc. Q2 04 Quarterly Results; Team analysis
Business users more profitable

- Business users have potential to generate more attractive rates of return
- However, unclear what price point the market will support

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</thead>
<tbody>
<tr>
<td>Incremental gross margin</td>
<td>£4.36</td>
<td>£6.86</td>
<td>£9.36</td>
</tr>
<tr>
<td>Payback (months)</td>
<td>55</td>
<td>35</td>
<td>26</td>
</tr>
<tr>
<td>5-year rate of return</td>
<td>3%</td>
<td>24%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: Team analysis
What’s in it for Vodafone?

- Vodafone holds approximately 30% of the slow growing mobile market in UK

- However, Vodafone is facing about 29.6% churn rate\(^1\)

- "This enables Vodafone UK to maximise its network and service assets while generating additional revenue from a new source"— Bill Morrow, CEO

- Bluephone opens up opportunity to reach 19.5 million residential customers and over 5 million business customers

- Given that many of these customers are likely to retain their BT phone numbers, Vodafone is likely to retain these Bluephone customers. 10% reduction in churn results in 115M increase in operating profits!

Alternative operator models

- **ARPU generation**
  - Economics for fixed line operator not compelling
  - Benefit accrues to mobile operator

- **Customer acquisition tool**
  - Cable companies better positioned
  - Mobile operators benefit

- **Customer retention tool**
  - Benefit to incumbent diluted by poor economics
  - Bigger benefit to mobile operators

- BT should bundle BluePhone with high margin data products
- Mobile operators should deploy convergent solutions as a customer acquisition tool
- Cable companies can deploy quad-play for both customer acquisition and retention