UK broadband speeds research 2010

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We have taken a number of initiatives in relation to broadband speeds

• **June 2008**: Agreement of the Voluntary Code of Practice on broadband speeds

• **December 2008**: Code came into force

• **January 2009**: Publication of initial research report

• **July 2009**: Publication of second research report

• **March 2010**: Statement on delivering super-fast broadband in the UK

• **July 2010**: Publication of this research report, strengthened Code, updated consumer guide
Most broadband connections continue to use copper

- 65% of UK households have fixed-line broadband
- More than three quarters are DSL - utilising copper wires designed for phone calls rather than high-speed data
- Consumers are connecting more devices to the internet
- Use of high-bandwidth services is continually growing
- Fibre deeper into the network is next step
DSL broadband slows down over longer lines

Theoretical access line speeds for ADSL1 and ADSL2+ broadband services

Source: Ofcom
Interference also slows down broadband speeds

Distribution of access line speeds for ADSL2+ broadband services

- At 2km, 60% of connections have access line speeds between 4.5Mbit/s and 11.5Mbit/s
- 20% of connections above this speed
- 50% of connections above this speed
- 80% of connections above this speed

Source: Ofcom calculations based on data provided by two DSL operators
Slow broadband speeds matter to consumers

- 90% of consumers are satisfied with their overall broadband service
- 80% are satisfied with the speed of their service
- But...
- 24% of consumers say they receive slower speeds than they expected
- Slow speeds are the most common complaint to ISPs (27% of all complaints)

Sources: Ofcom technology tracker, Q1 2010; Ofcom Consumer Complaints Market Research, November 2009
Our research methodology is robust and accurate

- Research conducted with SamKnows
- Over 1,500 UK broadband users, over 18 million tests in May 2010
- Hardware monitoring unit connected to routers
- ISPs compared on a like-for-like basis
- What are the findings?
Consumers have moved to higher speed packages

UK residential broadband connections by headline speed

Proportion of connections (%)

<table>
<thead>
<tr>
<th></th>
<th>Nov-08</th>
<th>Apr-09</th>
<th>May-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 10 Mbit/s</td>
<td>5%</td>
<td>8%</td>
<td>24%</td>
</tr>
<tr>
<td>8 and 10 Mbit/s</td>
<td>62%</td>
<td>63%</td>
<td>68%</td>
</tr>
<tr>
<td>Less than 8Mbit/s</td>
<td>33%</td>
<td>29%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: Ofcom
Note: Based on data provided by the UK’s largest ISPs by retail market share (representing over 90% of the total market)
Actual speeds up by 27% between April 2009 and May 2010

Average download speeds for DSL and cable broadband connections, May 2010

Source: Headline speeds based on operator data / Actual speed from SamKnows measurement data for all panel members with connections in April 2009 and May 2010 (single-thread tests)
The gap between actual and headline speeds has increased

Average download throughput and headline speeds

<table>
<thead>
<tr>
<th></th>
<th>April 2009</th>
<th>May 2010</th>
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</thead>
<tbody>
<tr>
<td>Average headline speed</td>
<td>7.1 Mbit/s</td>
<td>11.5 Mbit/s</td>
</tr>
<tr>
<td>Average actual speed</td>
<td>4.1 Mbit/s</td>
<td>5.2 Mbit/s</td>
</tr>
</tbody>
</table>

Source: Headline speeds based on operator data / Actual speed from SamKnows measurement data for all panel members with connections in April 2009 and May 2010 (single-thread tests)
Most ‘up to’ 20Mbit/s DSL packages deliver less than 8Mbit/s

Distribution of average download speeds for consumers on 'up to' 20Mbit/s and 24Mbit/s DSL packages, May 2010

Proportion of panellists

- Average speed less than 8Mbit/s: 65%
- Average speed 8-14Mbit/s: 32%
- Average speed 14-20Mbit/s: 2%

Source: SamKnows measurement data for all panel members with a connection in May 2010 (single-thread tests)
Average speeds in rural areas are half those in urban areas

Average download throughput speeds in rural and urban areas, May 2010

<table>
<thead>
<tr>
<th>Mbit/s</th>
<th>Urban (All broadband connections)</th>
<th>Rural (All broadband connections)</th>
<th>Urban (DSL 'up to' 8 and 10Mbit/s)</th>
<th>Rural (DSL 'up to' 8 and 10Mbit/s)</th>
<th>Urban (DSL 'up to' 20 and 24Mbit/s)</th>
<th>Rural (DSL 'up to' 20 and 24Mbit/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>5.8</td>
<td>2.7</td>
<td>3.7</td>
<td>2.2</td>
<td>6.8</td>
<td>5.0</td>
</tr>
<tr>
<td>6</td>
<td></td>
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<td></td>
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<tr>
<td>4</td>
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<tr>
<td>2</td>
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<tr>
<td>0</td>
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</tbody>
</table>

Panellists’ average distance from exchange

- Urban: 1,835m
- Rural: 4,195m
- Urban: 1,507m
- Rural: 3,517m

Source: SamKnows measurement data for all panel members with a connection in May 2010 (single-thread tests)
Cable 10Mbit/s services are twice as fast as comparable DSL packages

Average download throughput speeds for 8/10Mbit/s packages by ISP, overall and in the peak period

Source: SamKnows measurement data for all panel members with a connection in May 2010 (single-thread tests)
*Caution: small sample size (<50)
Notes: (1) Only includes DSL customers within 5km of the exchange; (2) Includes on-net customers only for LLU operators (3) data for DSL operators have been weighted to normalise for distance and exchange; data for Virgin Media’s cable service have been weighted to normalise for region and rural/urban; (4) the range shown represents a 95% confidence interval around the mean.
Constraints of copper lines mean average speeds for ‘up to’ 20/24Mbit/s DSL packages are under 10Mbit/s

Average download throughput speeds for high-speed packages by ISP, overall and in the peak period

Source: SamKnows measurement data for all panel members with a connection in May 2010 (single-thread tests) *Caution: small sample size (<100) Notes: (1) Only includes DSL customers within 5km of the exchange; (2) Includes on-net customers only for LLU operators (3) data for DSL operators have been weighted to normalise for distance and exchange; data for Virgin Media’s cable service have been weighted to normalise for region and rural/urban; (4) the range shown represents a 95% confidence interval around the mean;
Fastest speeds are delivered in off-peak periods when multiple files are downloaded simultaneously

Average download throughput speeds for cable and 20/24Mbit/s DSL connections by ISP, single and multi-thread test results, 4am to 6am

Source: SamKnows measurement data for all panel members with a connection in May 2010; Notes: (1) Only includes DSL customers within 5km of the exchange; (2) Includes on-net customers only for LLU operators; (3) Data for ADSL1 up to 2Mbit/s and ADSL1 and ADSL2+ up to 8Mbit/s have been weighted by distance from exchange; data for ADSL2+ services up to 16Mbit/s and all cable services have been weighted by region and rural/urban; (4) The range shown represents a 95% confidence interval

* Single-thread tests involved testing the speed of download of one file, multi-thread tests of three files simultaneously. Both are relevant to the user experience: single-thread tests replicate one PC downloading a single file; multi-thread tests replicate web page downloads, peer-to-peer configurations or multiple PCs simultaneously downloading files fusing the same broadband connection.
New Code expected to bring further benefits for consumers

<table>
<thead>
<tr>
<th>Line speed estimate</th>
<th>Current Code</th>
<th>Updated Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconsistent, potentially inaccurate</td>
<td>More accuracy and consistency with standard range for estimates</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Resolution of problems</th>
<th>Current Code</th>
<th>Updated Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some good practice, some less good</td>
<td>Fault logged if speed is significantly below estimate – incentive to resolve</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Options for consumers</th>
<th>Current Code</th>
<th>Updated Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to lower speed if available</td>
<td>Change package or leave provider (within 3 months) if significantly below estimated range</td>
<td></td>
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</tbody>
</table>
Broadband advertising is currently under review

• Committee on Advertising Practice is undertaking a review of how broadband is advertised

• Our view is that speeds should only be advertised if they are achievable by at least some customers
  – some ISPs continue to advertise speeds (e.g. ‘up to’ 24Mbit/s) which no customers can actually ever receive in practice

• Advertising should also include a 'Typical Speed Range' (TSR)
  – TSR would be based on a standard methodology similar to APRs in financial services or MPG in motoring
Ofcom's aim is to help consumers at each stage of the decision-making process and to facilitate faster broadband.

**Our objective**

- Information on performance
- Clear advertising
- Point of sale information
- Help to improve speeds
- Help with faults/poor speeds
- Superfast broadband

**Ofcom actions**

- Publication of research
- Discussions with ASA
- Clear, consistent, accurate estimates of line speed
- New Ofcom consumer guides
- Option to leave provider
- Clear regulatory framework