The Ultrabroadband Media Cloud
Capacity Trends in the Home

Columbia University / CITI

April 21, 2006
Safe Harbor Statement:

This presentation contains forward-looking statements that reflect the current views of Deutsche Telekom management with respect to future events. They include statements as to market potential and the planned T-Online merger, and the “Outlook 2006” statements at the end of this presentation. Forward-looking statements are based on current plans, estimates and projections. You should consider them with caution. Such statements are subject to risks and uncertainties, most of which are difficult to predict and are generally beyond Deutsche Telekom’s control, including those described in the sections “Forward-Looking Statements” and “Risk Factors” of the company’s Form 20-F report filed with the U.S. Securities and Exchange Commission. Among the relevant factors are the progress of Deutsche Telekom’s workforce reduction initiative and the impact of other significant strategic or business initiatives, including acquisitions, dispositions and business combinations. In addition, stronger than expected competition, technological change, litigation and regulatory developments, among other factors, may have a material adverse effect on costs and revenue development. If these or other risks and uncertainties materialize, or if the assumptions underlying any of these statements prove incorrect, Deutsche Telekom’s actual results may be materially different from those expressed or implied by such statements. Deutsche Telekom can offer no assurance that its estimates or targets will be achieved. Deutsche Telekom does not assume any obligation to update forward-looking statements to take new information or future events into account or otherwise.

In addition to figures prepared in accordance with IAS/IFRS, Deutsche Telekom presents so-called non-GAAP financial performance measures, e.g., EBITDA, EBITDA margin, adjusted EBITDA, adjusted EBITDA margin, adjusted EBT, adjusted net income, special influences, free cash flow, free cash flow (before purchase of network assets and spectrum in the US), leverage, net debt, net debt/adj. EBITDA, and the adjusted figures on the page titled “FY 2005 – Net Income”. These non-GAAP measures should be considered in addition to, but not as a substitute for, the information prepared in accordance with IAS/IFRS. Non-GAAP financial performance measures are not subject to IAS/IFRS or any other generally accepted accounting principles. Other companies may define these terms in different ways. For an explanation of some of these terms, please refer to “Reconciliation to pro-forma figures” under the “Publications” heading on Deutsche Telekom’s Investor Relations webpage at www.deutschetelekom.com.
Ultrabroadband: Status Quo?
Reading the tea leaves right....

Past and present drivers as proxy for tomorrow's “Ultrabroadband Media Cloud”? 

- Adoption?
- Transmission?
- Price?
- Infrastructure?
- Regulation?
- Deutsche Telekom?
Ultrabroadband: Adoption?

Global broadband take rate history strong, with somewhat slower adoption growth ahead. Asia/Pac leads, followed by U.S./Canada, Western Europe.

Regional Broadband Subscriber Adoption:

- **U.S./Canada**
  - Broadband
  - Dial-Up

- **EMEA**
  - Broadband
  - Dial-Up

- **Asia/Pac**
  - Broadband
  - Dial-Up

- #3 broadband market worldwide to date
- #2 in subscriber growth (+12%/y until '09) behind Asia/Pac, ahead of EMEA
- #1 in dial-up conversion (-15%/y btw. '03–'09)

- #2 broadband market worldwide to date
- #3 in subscriber growth (+10%/y until '09)
- #2 in dial-up conversion (-14%/y until '09)
- DSL tops cable modem use by factor of 6-to-1

- #1 broadband provider worldwide
- #1 in subscriber growth (19%/y until '09)
- #3 in dial-up conversion rate. When counting China and India, 57 Mill. new dial-up subs. actually added btw. '06 – '09

Source: For BB: Infonetics (March 06). For Dial-Up: Ovum (Mar 06). Analysis (Feb. 06). Gartner (Apr 03)
Note: EMEA (Europe, Middle East and Africa); Asia/Pac (incl. China, India, and Pacific region); Broadband (at least 200 kb/s in at least one direction); Dial-Up (56K or less in at least one direction)
Ultrabroadband: Transmission?

As higher transmission rates gain acceptance, U.S./Canada leads both in “low-tier” subscribers losses and “top-tier” adoption growth. Telco TV to “fuel” existing trend.

% of Regional Broadband Subscribers Using …

- ’05 – ’10: Number of subs worldwide using transmission rates under 2 Mb/s will drop to half (~50%)
- North America to see sharpest drop in <2 Mb/s subs (~20%/year)
- 2010: Only 20% of broadband subs will use “low-tier” access (28 mill. subs)

- ’05 – ’10: Worldwide subs using 2-10 Mb/s connections will almost triple (+270%)
- EMEA will lead “mid tier” category, with +46%/year growth until 2010
- 2010: More than 68 mill. subs, or 48% of all broadband users to commit to new “mid-tier” speeds

- ’05 – ’10: Close to 40 mill. subs worldwide will commit to 10+Mb/s (+630%)
- North America to lead “top tier” capacity trend (+860%/year until ’10) – presumably Telco TV main driver
- 2010: Almost 45 mill. subscribers, or 32% of all broadband users committed to “top-tier” transfer rates
Ultrabroadband: Price?

Price key differentiator among same-market incumbents and competitors. As commoditization continues, similar discounts both in U.S. and Germany.

### Incumbents vs. Same-Market Competition

- **Incumbent telecoms tend to sell on price, while**...
- **Same-market competitors leverage added bandwidth often at same or higher price**

### U.S.

<table>
<thead>
<tr>
<th>2004</th>
<th>2006</th>
<th>Chg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$34.95</td>
<td>$29.95</td>
<td>-14%</td>
</tr>
<tr>
<td>1.5 Mb/s</td>
<td>3.0 Mb/s</td>
<td>+100%</td>
</tr>
<tr>
<td>$23.30/Mb</td>
<td>$9.98/Mb</td>
<td>-57%</td>
</tr>
</tbody>
</table>

### Germany

<table>
<thead>
<tr>
<th>2004</th>
<th>2006</th>
<th>Chg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>€74.95</td>
<td>€29.94</td>
<td>-60%</td>
</tr>
<tr>
<td>3.0 Mb/s</td>
<td>2.0 Mb/s</td>
<td>-33%</td>
</tr>
<tr>
<td>€24.98/Mb</td>
<td>€14.97/Mb</td>
<td>-40%</td>
</tr>
</tbody>
</table>

Source: Company data

Note: All pricing for lowest available broadband offer above 1 Mb/s (access and ISP portion) ex voice, bundling or promotional discounts.
Ultra broadband investments well within historic wireline capex commitment range. As to consumer CPEs, continuing price drops should help “digital media cloud” growth.

Regional Telecom Wireline CapEx:

<table>
<thead>
<tr>
<th>Region</th>
<th>2002</th>
<th>2007</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S./Canada</td>
<td>$36.6</td>
<td>$32.3</td>
<td>-2.5%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>$19.6</td>
<td>$25.4</td>
<td>+5.3%</td>
</tr>
<tr>
<td>Asia/Pac</td>
<td>$28.6</td>
<td>$29.8</td>
<td>+0.8%</td>
</tr>
</tbody>
</table>

- Western Europe leads in wireline capex commitments (+5.3% Y/Y growth)
- At least 16 carriers in 13 countries currently building NGN broadband/Telco TV, incl. Austria, Belgium, France, Germany, Italy, Spain, UK, etc.
- In U.S./Canada, AT&T and Verizon alone estimated to commit $13bn to fiber builds until 2010.

Regional CPE Wholesale Prices (modems, gateways and routers):

- Btw. ‘02 – ’06, worldwide average CPE unit prices dropped 67% - to just about $39 per CPE (vs. $112 in 2002)
- As consumers consider connecting home network to higher broadband services, CPE price drops likely to help “digital media cloud” growth

Source: Capex UBS (March 2006), Lehman Bros. (Jan. 2006); CPEs: Infonetics (March 2006)
Note: Western Europe ex Turkey
## Ultrabroadband: Regulation?

**U.S. and Europe differ in regulatory approach. Example Germany.**

### U.S.:

<table>
<thead>
<tr>
<th></th>
<th>Unbundled Local Loop</th>
<th>Line Sharing</th>
<th>Resale</th>
<th>Broadband</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulated?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

- Residential broadband services and fiber-based platform exempt from regulatory restriction (DSL since Aug. '05)
- Also no unbundling requirement for residential “local loop” copper circuits / voice

### Germany:

<table>
<thead>
<tr>
<th></th>
<th>Unbundled Local Loop</th>
<th>Line Sharing</th>
<th>Resale</th>
<th>Broadband</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulated?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (DSL)</td>
</tr>
</tbody>
</table>

- Local loop regulated similar to U.S. situation pre-2004
- Currently unclear whether “new market” investments incl. fiber-based NGNs should be exempt from regulatory regime

Bears risks and costs for NGN investments. Should hence be able to determine prices and accesses for competitors by itself!

“New infrastructure” is not synonymous with “new markets”

*Commissioner Viviane Reding*

---

DTAG should share with competitors, costs, risks and ROI. Upon mutual agreement, FNA will not “intervene”.

*M. Kurth, FAZ 11-15-05*

Initially, “new market” investments should not be regulated. Long-term “level playing field” needed to avoid monopoly. *(Dept. of Commerce and Tech.**)*
Ultrabroadband: Deutsche Telekom

VDSL and NGN fiber to enable IPTV plus whole host of digital consumer applications.

Deutsche Telekom powers tomorrow’s “Ultrabroadband Media Cloud”:

- **Network**:
  - Up to 50 Mb/s via FTTC and VDSL
  - Up to 7.2 Mb/s via HSDPA
  - WiMAX in test phase/field trials

- **Content & Services**:
  - 100+ free and pay TV channels, plus VOD, ITV, 3D TV
  - Home security and automation
  - e-Health, e-Learning, e-Government

Source: Company information
Note: * Maximum enabled transmission rates

---

**NGN**

- Next Generation Network
- IP-based network
- Universal platform for
  - Fast Internet
  - Voice
  - Video

The new integrated “Next Generation Network” (NGN) will replace the separate communication networks used for voice (telephone), video & data

Target: One network for all applications forced by technology innovations.
Ultrabroadband: Status Quo?

Reading the tea leaves right....

Past and present drivers as proxy for tomorrow’s “Ultrabroadband Media Cloud”?

- Adoption? Well on its way
- Transmission? Higher rates help gain consumer traction
- Price? No longer a deterrent
- Infrastructure? If we build it they will come
- Regulation? Varies by market
Thank you!

Klaus-Peter Statz
President and CEO
Deutsche Telekom Inc.
600 Lexington Avenue, 17th Floor
New York, NY 10022
Phone: (212) 424-2927 Fax: (212) 424-2975
mailto:klaus-peter.statz@usa.telekom.de