The FTTC Project of Deutsche Telekom

Regulatory Holidays would boost VDSL Investments and 3play Market Development

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Berlin, 6 October 2006
### Relevant Questions regarding the FTTC-Project

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tr>
<td>What are the challenges and market problems with regard to the FTTC rollout?</td>
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<td>What is the rollout plan of Deutsche Telekom?</td>
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<td>Are FTTC/VDSL services new, so that regulatory holidays are justified?</td>
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The regulatory discussion of new and emerging markets

Regulators are not taking a neutral stance on the new market concept, more rational and well-founded reasoning is needed

- Liberalisation of telecommunication markets in 1998 was assisted by ex ante access regulation. The overall objective was allocative efficiency of existing networks.

- Today existing access networks reach their capacity limits. Access network operators face a huge fibre investment problem to enable and enter new markets.

- Technical progress has brought many pathways to reach the customers (TV-cable, powerline, fibre, satellite, UMTS, WiMAX etc.). Network assets are no more economically unreplicable, so the reason for ex ante regulation is gone.

- The commitment for regulatory forbearance will give the right incentives for alternative network investment. The fear of new monopolies is not well-founded.

The “hands off”-approach in the US sets the climate for more than 25 billion $ FTTX-Invest.
T-Home Speed

VDSL/FTTC deployment is the most complex and innovative project of the fixed line unit of Deutsche Telekom since digitalisation

- € 3 bn capex in FTTC network
- Bandwidth of up to 50 Mbps
- 18,000 km of fibre cable
- 74,000 new optical street cabinets

- Television of the future (IPTV)
- Quality enhancement (HDTV)
- Attractive content (Bundesliga)

- Access to new costumers, Telcos will develop interactive 3play
- e-Learning, -Health, -Government, -Procurement (Information Society)
- 3-Dimensional TV (new devices, new art of communications)
- Enabling of mass customization
T-Home Speed
Extension of the Access Network Infrastructure

- Fibre deployment parallel to existing copper cable
- Replacement of street cabinets
- Sub loops are still copper based and able to support very high bandwidths
T-Home Speed
VDSL/FTTC Rollout Planning

- Phase 1 - Midyear 2006: 50% of households in the Top 10 cities
- Phase 2 - 31.12.2006: 90% of households in the Top 10 cities
- Phase 3 - 31.12.2007: 90% of households in 50 cities
- Further coverage depends on market development
Bandwidth demand
Full HD Interactive TV, Videophony and 3D applications will be the drivers for access link speeds – multimedia services require VDSL

| Bandwidth driver                  | Example scenario
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<tr>
<td>Full HD-IPTV requires 8 - 17 Mbps</td>
<td>Family with two kids:</td>
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<tr>
<td>Videophony requires 2 - 5 Mbps (symmetric)</td>
<td>- 2 TV channel HDTV* viewed  16 Mbps</td>
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<tr>
<td>3D-Videostreaming requires 20 - 25 Mbps</td>
<td>- 1 TV channel recorded (DVD)  2,5 Mbps</td>
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<td>- WWW 2,0 Mbps</td>
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<tr>
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<td>- Video telephony  2,5 Mbps</td>
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<td>- Intelligent Home  1,0 Mbps</td>
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Example scenario:
- 2 TV channel HDTV* viewed  16 Mbps
- 1 TV channel recorded (DVD)  2,5 Mbps
- WWW 2,0 Mbps
- Video telephony  2,5 Mbps
- Intelligent Home  1,0 Mbps

Seamless channel switching needs 1.3 x normal bandwidth!
What is a new and/or an emerging service?
New services must satisfy additional needs, emerging services are potentially new services

The introduction of the mobile phone created a new market.

FTTC/VDSL services will also create new markets.
Backup
New Market Concept of the EU-Framework
Exemption from the regulation of new networks and new markets is already part of the current European Regulatory Framework

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<th>EU-Framework</th>
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<td><strong>Objective</strong></td>
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<td>- Framework directive (Art. 8 Abs. 2 lit. c): encouraging efficient investment in infrastructure, and promoting innovation</td>
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<td><strong>Market definition</strong></td>
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<td>- Market recommendation (Recital 15): new and emerging markets, in which market power may be found to exist because of “firstmover” advantages, should not in principle be subject to ex-ante regulation</td>
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<tr>
<td><strong>Intention</strong></td>
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<td>- Framework directive (Recital 27): guidelines will also address the issue of newly emerging markets, where de facto the market leader is likely to have a substantial market share but should not be subjected to inappropriate obligations</td>
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<td>- Guidelines on market analysis (no. 32): premature imposition of <em>ex-ante</em> regulation may unduly influence the competitive conditions taking shape within a new and emerging market.</td>
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<td>- Guidelines on market analysis (footnote 92): Article 14(3) of the framework Directive is not intended to apply in relation to market power leveraged from a ‘regulated’ market into an emerging, ‘non-regulated’ market. In such cases, any abusive conduct in the ‘emerging’ market would normally be dealt with under Article 82 of the EC Treaty.</td>
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New Market Concept of the EU-Framework
DIW-Operationalization: To ensure optimal incentives to innovate and invest in new networks NRAs must credibly be committed not to regulate new infrastructure and services for a fixed period of time!

No regulation of newly emerging markets (new infrastructures)  No regulation of new markets (new services)  SMP-Regulation if necessary

This concept reduces the barriers to innovate and therefore it creates economic incentives to invest in competing new infrastructures – not only for the incumbent but for the competitors as well!

Competition intensity through alternative infrastructures

Sources:
Baake, Kamecke, Wey (2005) „New Markets under the new Framework“, published as DIW Policy Consultancy compact No. 6
New Market Concept of the EU-Framework
The government proposal of a new article regarding the regulation of new technologies and new markets

Statutory provisions concerning the regulation of new markets

Section 9a of TKG (German Telecommunications Act)

“New Markets”

As a rule, **new markets shall be regulated** in accordance with the provisions set out in this part only **if the facts of the situation justify the assumption that the development of a permanently competition-oriented market in the field of telecommunications services and networks would otherwise be obstructed in the long term.** When assessing the need for regulation in accordance with Section 10 and imposing conditions in accordance with this part, **the Federal Network Agency must ensure** that its stipulations are of an appropriate nature and pay particular attention to **the aims of promoting efficient infrastructure investments and supporting innovation.**

Evaluation of the proposed ruling

- Effort in the right direction but falls too short
- Qualitatively almost no difference to the current rulings
- Gives no planning reliability for any market player, hence no encouragement of **efficient** investments in infrastructure
- NRA must have a definition of newly emerging markets and new markets
- Minimum time periods must be set otherwise there will be no commitment for regulatory forbearance