1. Market Overview: 3 Telcos + Cable + Others

<table>
<thead>
<tr>
<th>Service</th>
<th>Subscribers</th>
<th>Market Share</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadband (BB)</td>
<td>16.7 M</td>
<td>Telco : Cable 80% : SKB : LGU+ : 20% : 23% : 16%</td>
<td></td>
</tr>
<tr>
<td>Mobile</td>
<td>10 M</td>
<td>KT : SKT : LGU+ : 31% : 51% : 18%</td>
<td></td>
</tr>
<tr>
<td>IPTV</td>
<td>3 M</td>
<td>KT : SKB : LGU+ : 56% : 28% : 16%</td>
<td></td>
</tr>
</tbody>
</table>

2. Broadband Experience

- Over 50% of lines are deployed based on FTTH/FTTC.
- Over 80% of subscribers are using max. 100Mbps network services.
- Customers experience 49Mbps real speed.
- BB price has decreased due to continuous competition pressure.

<table>
<thead>
<tr>
<th>Broadband Subscription</th>
<th>FTTH (Fiber)</th>
<th>FTTC (LAN)</th>
<th>HFC</th>
<th>DSL</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub. (mil.)</td>
<td>2.9</td>
<td>5.7</td>
<td>5.2</td>
<td>2.9</td>
<td>16.7</td>
</tr>
<tr>
<td>%</td>
<td>17%</td>
<td>34%</td>
<td>31%</td>
<td>18%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Korea Communications Commission, 2010.5

<table>
<thead>
<tr>
<th>KT Broadband Plan</th>
<th>Speed</th>
<th>Price (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lite</td>
<td>50Mbps</td>
<td>$30</td>
</tr>
<tr>
<td>Special</td>
<td>100Mbps</td>
<td>$35</td>
</tr>
</tbody>
</table>

3. Mobile Revolution

- Top 5% of users consume 50% of all internet traffic.
- Heavy user occupy most of P2P and Webhard traffic.
- P2P traffic account for 57% of all internet traffic.
- The trial of "Usage-based-tariff" as a solution did not succeed.

KT internet traffic has increased 5 times for 5 years.

- 380 Gbps(05) → 1,090 Gbps(08) → 1,800 Gbps(10)

However the ARPU has decreased consistently.

- KT ARPU: $28(05) → $25(07) → $23(09)

Traffic Distribution

Traffic Growth & Imbalance

- Backbone Traffic Growth CAGR=37%
Network Management

**2. Broadband Experience**

KT separated its backbone network after launching IPTV service in 2008.
- Basic backbone: Internet Traffic (Best Effort)
- Premium backbone: IPTV Traffic (QoS)

Forthcoming Smart TV and 3D contents will challenge telcos’ networks.
- Internet traffic will increase 8 times by 2013.
- Widening gap between traffic growth and revenue (Deepening traffic-revenue decoupling)

Telcos will face various ‘Network management’ issues.
- Best Effort Network: traffic management(P2P)
- Premium Network: cost sharing, network charge, balance mechanism(traffic, profit etc.)

**3. Mobile Revolution**

*Late but Fast*

The most notable issue in Korea is ‘Smartphone’.
- iPhone has initiated the growth of Smartphone market.
  - ‘KT + Apple(Phone) and SKT + Samsung(Galaxy S)’ stimulate the expansion.

The Smartphone penetration is expected to reach at 46% by 2012.

- Smartphone sales gain momentum by iPhone
  - 3 years late
  - 4.3 million units sold in just 9 months
  - 12% penetration in just 1 year

**Smartphone**

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage TB</td>
<td>756</td>
<td>786</td>
<td>856</td>
<td>906</td>
<td>986</td>
</tr>
</tbody>
</table>

**3. Mobile Revolution**

*Life Convenience*

Seoul bus allows you to locate the nearest bus stops and the schedule of the buses.

- **Arrival Info**
  - Samsung ART
  - Bus Stops Around me

- **Add to My Favorite**
  - 1st Bus (Seou9163)
  - Arrival in a minute
  - Departure 1st stop

- **2nd Bus (Seou9184)**
  - Arrival in 17 minute

- **Bus Stops Around me**
  - 1st Bus (Seou9163)
  - Arrival in a minute
  - Departure 1st stop

**4. Future Challenges**

Broadband has been the successful story for past years. Smartphone was introduced late but rapidly expanded. Due to Two tiered network management and 3W strategy, the Korean network has been working amazing up to date.

**But, it might not enough for the future**. The traffic generators such as Smart TV, 3D contents and emerging devices will be the threat deepening traffic-revenue decoupling.

It's time to consider **Post Net Neutrality** for sustaining the future network evolution.

**The basic concepts are ;**

1. Balancing between Basic and Premium Network
2. Preparing the business environment for **the Profit of Premium Network**
3. Implementing **Reasonable Network Management**

**Network Management**

Facing the data explosion, KT implements 3W

- WCDMA(3G)
  - Upgrade to HSPA+ in Oct 2010
  - Combination of WCDMA(3G), WiFi, WiBro(WiMax)

- Offloading 95% of Smartphone traffic to WiFi and WiBro
- 3W LTE strategy for future network roadmap

Telcos started to specify traffic shaping by making a fair usage policy.
- Introducing "unlimited data plan" against sharp competition pressure
- To guarantee QoS, KT adopts Data restriction policy
  - $55 ~ 75MB/day, $79 ~ 150MB/day, $95 ~ 300MB/day

**Data Explosion**

iPhone user generates **30 times** more than feature phone user
- An average iPhone user consumes 350MB a month, while an average feature phone user only uses 11MB.

Mobile data traffic increased **7 times**

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<th>Year</th>
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<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage MB</td>
<td>500</td>
<td>700</td>
<td>1,000</td>
<td>1,500</td>
<td>2,000</td>
</tr>
</tbody>
</table>

**Data Usage per Customer**

- Feature Phone
  - iPhone
  - 7 times
  - 11MB

- KT Total 3G Data Traffic
  - 7 times
  - 2,400 TB ('12)
Government plans to launch 1Gbps broadband by 2012.

In 2009, pilot project for 1Gbps broadband deployment has been kicked off.

- Commercial service will be launched in 2012.
- KT is providing 1Gbps broadband pilot service to 1,000 households.

What is 1G broadband?

<table>
<thead>
<tr>
<th>Speed</th>
<th>Current broadband</th>
<th>1Gbps broadband</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main services</td>
<td>Video conferencing, call, IPTV</td>
<td>Multi-angle TV, 3D TV, Giga P2P</td>
</tr>
</tbody>
</table>

Who's offering 1G pilot project?

<table>
<thead>
<tr>
<th>Households</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>KT</td>
<td>FTT-x</td>
</tr>
<tr>
<td>CJ Hellovision</td>
<td>HFC DOCSIS 3.0</td>
</tr>
</tbody>
</table>

Who's offering 1G pilot project?

- KT: 1,000 FTT-x
- CJ Hellovision: 1,119 HFC DOCSIS 3.0

Changing data plan for heavy users from 'usage based' to 'all-you-can-eat'.

- While offering limited data plans for iPhone, KT introduced new unlimited plans as well.
- As opposed to global pricing trends, the unlimited data plans are being expanded in Korea.

Major Factors for Change

- Sharp Competition Pressure
- Strong Network Competitiveness
- High Subscriber ARPU

Expecting to induce subscriber to migrate from $45 to $55 or more.