Transformation of Telco in the Internet Era

“MIIT ITU Seminar on Broadband Development and Innovation using Internet”
Contents

1  The Big Picture
2  Challenges & Ordeals
3  Are Telcos’ Key Markets Safe?
4  Telcos Future (KT)
5  Final Comments
1. The Big Picture

- Era before Smartphones (− 2007)

Telco Domain:

Telco does everything

Era before Smartphones (− 2007)

SKT + SK Broadband

CT + KT

LGT + Dacom + Powercomm

23.1 m

14.0 m

40.2 m

PSTN

Broadband

Apps to Mobile handsets

Mobile

H/W

Cost / Lay offs

Change management

Limit of telco market: No win situation

Cutting cost / Lay offs

Change management

Customer Loyalty is with Telco

Key words:

Telco does everything

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Key words:
1. The Big Picture

- Era of Smartphone begins (2007)

2007

Apple’s iPhone & iOS
1. The Big Picture

- Era of the smartphones (2007 - )

Key words:
- Limit of telco market: No win situation
- Cutting cost / Lay offs
- Change management
- Customer loyalty lies with H/W manufacturer and App developer
1. The Big Picture

- Telcos diversify: First few steps into convergence

- KT’s non-telecom revenue proportion increased from 3.5% (2010) to 28.6% (2013)

- Major Acquisitions:
  - Since SK Telecom’s acquisition of 49% shares in Hana card, telcos in Korea have begun to look outside of their traditional telecom market into areas with possible convergence

- KT:
  - Kumho rental (Car rental) (2010)
  - BC Card (Credit Card) (2011)

- SK Telecom:
  - Hynix (semi conductor) (2012)
  - Hana card (Credit card) (2009)
  - NSOK (Security) (2014)
  - iRiver (Music H/W) (2014)


<table>
<thead>
<tr>
<th>Year</th>
<th>Telecom Revenue</th>
<th>Non-Telecom Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>96.5%</td>
<td>3.5%</td>
</tr>
<tr>
<td>2011</td>
<td>88.6%</td>
<td>11.4%</td>
</tr>
<tr>
<td>2012</td>
<td>74.1%</td>
<td>25.9%</td>
</tr>
<tr>
<td>2013</td>
<td>71.4%</td>
<td>28.6%</td>
</tr>
</tbody>
</table>

[KT Revenue proportion of Telecom vs. Non-Telecom]
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1  The Big picture
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2. Challenges & Ordeal

- Telcos in application market: United but unsuccessful

- Success of Apple iOS (15.6%), Google Android (22.5%) (2010)
- Telcos rethink value offering and unite under Wholesale Applications Community (WAC) for a common platform (2010)

**WAC**

- 48 mobile operators (KT, Telefonica, etc.)
- 2010 - 2012

**JIL**

- Vodafone / Verizon / Softbank / China mobile
- 2009 - 2010

- **Outcome:**
  - Not successful as yet: More specific Roles & Responsibilities needed for future alliances
  - KT now develops apps mostly related to its main telecom services (For Customer service).
  - Apple iOS (15.6%), Google Android (78.4%) dominate (2013)
2. Challenges & Ordeals

- Telcos’ SMS market erosion: Major revenue source lost

- Global SMS revenue to decline after 2016 (Ovum)
- Korea telcos’ SMS revenue has declined since 2011
- Personal SMS is now free in Korea bundled with data package

![Telcos SMS market (Korea)]

- Telecom expense, a popular manifesto by political parties in recent presidential elections (2007, 2013)
- Resulting in telcos to provide 50 Free SMS per month (2011)

- OTT mobile messengers (Kakao talk and Line) disrupting SMS market
- KT’s personal SMS revenue show signs of decline
  - From $380 m (2010) to $252 m (2011)
- Telcos unite to provide Rich Communications Suite (RCS) (2012)
  - Korean Telcos were among the first to introduce JoyN

- **Outcome:**
  - Joy N: 3.2 m users, actual usage of 0.1% (2014)
  - Kakao: 40 m users, actual usage of 94.7%, Line: 10m users, actual usage of 3.0% (2014)
  (Source: KISDI 2013)
2. Challenges & Ordeals

- Telcos’ SMS market erosion: What’s left of the SMS market

- Personal SMS market has disappeared into thin air

- Bulk SMS market remains for telcos, but not for long!

- G Market, major user of telcos’ bulk SMS switches to Kakao talk (2013)
  - G Market owned by e Bay owns 20% of Korea’s e-commerce market share
  - Major shift expected by other businesses into using cheaper OTT mobile messengers
2. Challenges & Ordeals

- Telcos’ international call market decline

- Introduction of Free or cheap international call services
- KT’s international calling revenue continuously declining

- Skype, Apple’s Face time, Kakao talk kill mobile operator’s international calling market
- VoIP played a big roll in disrupting international call market, but now followed by OTT players
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1 The Big picture

2 Challenges & Ordeals

3 Are Telcos’ Key Markets Safe?

4 Telcos future (KT)

5 Final comments
3. Are Telcos’ key market safe?
- New enemies in traditional telco market

- Mobile Operator alliances don’t work (WAC, Joy N)
- Google now entering Telcos’ key telecom infrastructure market
  - Project Fiber / Project Loon / Project Link

- Google experiments with innovative technology to provide internet using its ability to create new eco systems and changing the rules of the game.

- Google Fiber providing Gigabit speed internet has pushed AT&T and Time warner in the US to start providing Giga internet

- Different ways to win over customer loyalty and information
3. Are Telcos’ key market safe?

- New enemies in traditional telco market

- **Google’s Project Fiber**
  - Pilot testing in 3 cities (2011) followed by 10 bigger cities including Atlanta (2014).
  - Major cities such as New York, Los Angeles not included.

- **Free Internet**
  - At basic speed (5 mbps Download, 1 mbps upload)
    - Pilot testing, and Access to customer data

- **or Pay for Gigabit internet**
  - Up to 1,000 mbps speed
3. Are Telcos’ key market safe?

- New enemies in traditional telco market

- **Google’s Project Loon**
  - A network of balloons traveling on the edge of space, designed to connect people in rural and remote areas, help fill coverage gaps, and bring people back online after disasters.
  - Provide connectivity to a ground area about 40 km in diameter at speeds comparable to 3G using 2.4 and 5.8 GHz bands
  - Recently completed pilot testing in New Zealand
3. Are Telcos’ key market safe?

- New enemies in traditional telco market

- Google’s Project Link
  - Infrastructure project aiming Africa and other underdeveloped countries
  - Currently linking Kampala, capital city of Uganda with fiber Optic cable.
  - Undergoing Pilot Testing.
  - Challenge to telcos and also a challenge to KT’s initiatives in Africa (Rwanda)

* GOR: Government of Rwanda
Contents

1. The Big picture
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4. Telcos Future

- KT in the future (2014 & beyond)

(KT)

(2014 - )

14.4 m
PSTN

8.0 m
Broadband

17.3 m
Mobile

Government Support (MSIP)

- Leveraging on Key strength: enhancing the Pipe
- Net Neutrality issues
- Convergence efforts continuous
- Working with VCs (ICT / Media Funds)

“Giga Infra”

“Sharing the Cost”

“5 Major convergence Areas”

“investing in future technology”
4. Telcos Future

- KT in the future (2014 & beyond)

**KT**

- 14.4 m PSTN
- 8.0 m Broadband
- 17.3 m Mobile

(2014 - )

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**“Giga Infra”**

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**“5 Major convergence Areas”**

**“investing in future technology”**
Leveraging on Key strength

- KT’s Giga Infra

“4.5 trillion won on Giga Infrastructure during next 3 years.”

“Giga Infra”

Giga FTTH

Giga Wire

Giga Path

Giga bit speed internet

3 times faster internet speed using conventional copper lines

Blending LTE network with Giga bit speed Wifi

“4.5 trillion won on Giga Infrastructure during next 3 years.”

Unit: Trillion won

[KT’s CAPEX on infra]
4. Telcos Future

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“investing in future technology”
- KT continues to stress domestic content providers such as Kakao and Naver to jointly invest in KT’s Giga infrastructure
  - Content Providers’ market capitalization now exceeds that of telcos

- Netflix agrees to pay Comcast & Verizon for faster & reliable access to broadband (2014)
  - Telcos faced with large amounts of annual capex for infrastructure
  - AT&T and Time Warner originally not keen in deploying “Giga infra”

  - AT&T: Gigabit service to 100 cities (New York, Chicago, LA 등)
  - Time Warner: Gigabit service (New York, LA)

- In the long run, it may spark net neutrality again
4. Telcos Future

- KT in the future (2014 & beyond)

(2014 - )

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“Giga Infra”

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Convergence efforts continues

- KT’s 5 major convergence area

“5 Major convergence Areas”

Klive hologram concert hall

4. Telcos Future

- Smart Car (M2M / IoT)
- Tele medicine ICT check up center
- Micro Energy Grid
- Media technology
- National Disaster safety network

Transport -ation

Health

Energy

Safety

Media
4. Telcos Future

- KT in the future (2014 & beyond)

(2014 - )

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“investing in future technology”
Investing in future technologies and companies

- Working with Venture Capital Companies (VCs)

- Jointly organized funds to search, support, develop new start-ups in 4 areas
  - ICT, Media, Policy and Global.

- 24 funds in operation
  - 5 ICT funds
  - 10 media funds
  - 6 are global funds

- Funds support KT’s initiatives in 5 major convergence areas

- Different cultural DNA
  - Telcos and VCs think different
4. Telcos Future

- KT in the future (2014 & beyond)

(2014 - )

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Government support

● Ministry of Science, ICT and Future Planning (MSIP)

- MSIP organized working group to discuss “Giga internet construction” (June 2013)
  - MSIP, NIA, ETRI, Universities, Telcos, Manufacturers
  - Giga internet technology, building eco-system, future Road map are discussed

- Aim: To build Giga internet infrastructure by 2017
  - 84 cities in Korea by 2017
  - Develop related technology and foster related venture firms
  - Develop related equipment with price competitiveness
  - Gathering various ideas from the public

- MSIP to maintain country’s competitive advantage in ICT
  - To cope with rising internet traffic
  - Fear of falling behind US and Hong Kong in Gigabit internet deployment
  - Expectations for export in technology, equipment and human resources

* NIA: National Information Society Agency, ETRI: Electronics and Telecommunications Research Institute
Final comments

- Long term strategy of Soft Bank (Japan)

- Softbank’s so called “30 year strategy” and outlook
  - Build size to achieve economy of scale
  - Revenue from “Gungho” & “Supercell” helps Softbank financially support itself from the acquisition of Sprint Nextel

- SoftBank takes control of US Sprint Nextel by purchasing a 70% stake for $20 billion (October 2012)

- SoftBank increases its stake to 58.5 per cent in GungHo Entertainment (March 2013)

- Softbank acquires 51% of Supercell for $1.53 billion (October 2013)

- Softbank acquired 34.4% of Alibaba. Alibaba is currently waiting for IPO
Final Comments
- Insight: What should telcos do

- **Long term strategy and aim**
  - Softbank’s CEO is a good example
  - Economies of scale

- **Leveraging on key business: line business**
  - Maintaining Network Excellence (QoS): Giga infrastructure (Comcast & Verizon)
  - Continuous ways to provide faster, reliable communication at lower price

- **Convergence market**
  - Continuous adventure out of the telco domain, and into adjacent industries
  - KT’s 5 Major convergence areas

- **Continue collaboration with VCs and promote more practical alliances**
  - Difficult with incumbent DNA to directly manage Start-up companies
  - Financially not feasible to invest in every field: Due to Cash restraint ➔ Collaborate and Cherry Pick

- **Continue ties with government**
  - Continuous financial, regulatory support especially in infrastructure deployment
  - Pushing on Net neutrality issues although this would not be easy
Thank you
KT is a Korean integrated fixed and wireless telecommunication service provider and leading the development of the information and communications industries of Korea since its foundation in 1981.

- Established: December 10, 1981
- Revenue: USD 23.8 bil. (2013)
- No. of Employees: 32,197 (KT only, Jan. 2014)
- Stock Exchange Listings: Korea, New York, London

Major Service Subscribers

<table>
<thead>
<tr>
<th>Mobile</th>
<th>Fixed Broadband</th>
<th>Pay TV²</th>
<th>Fixed phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.3</td>
<td>8.0</td>
<td>7.0</td>
<td>17.9</td>
</tr>
<tr>
<td>(M/S 30%)</td>
<td>(M/S 43%)</td>
<td>(M/S 27%)</td>
<td>(M/S 66%)</td>
</tr>
<tr>
<td>LTE: 8.0</td>
<td></td>
<td>IPTV: 5.0</td>
<td>PSTN: 14.4</td>
</tr>
<tr>
<td>3G: 8.5</td>
<td></td>
<td>Satellite TV: 2.0</td>
<td>VoIP: 3.5</td>
</tr>
<tr>
<td>WiMax: 0.8</td>
<td></td>
<td></td>
<td></td>
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Source: KT, Ministry of Science ICT and Future Planning, Korea Communications Commission

1) IFRS basis, Exchange rate: USD 1 = KRW 1,000
2) Pay TV: IPTV, Satellite TV, Cable TV
KT provides not only telecommunication services but also media, IT and convergence services with 54 subsidiaries and its major subsidiaries are BC Card, KT rental, KT skylife and KT telecop.

KT group provides from telecommunication services to media, IT and convergence services.

Subsidiaries are successful in their fields.

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue ($mil. as of 2013)</th>
<th>Number of Employees (as of Dec. 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC card</td>
<td>3,073</td>
<td>825</td>
</tr>
<tr>
<td>KT rental</td>
<td>885</td>
<td>1,064</td>
</tr>
<tr>
<td>KT skylife</td>
<td>600</td>
<td>313</td>
</tr>
<tr>
<td>KT telecop</td>
<td>262</td>
<td>2,469</td>
</tr>
</tbody>
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Appendix 3. Miscellaneous facts of Korea’s Telecom market

[2G/3G/4G proportion in Korea]

Source: MSIP (2014)

[KT’s LTE growth]

Source: KT (2014)
Appendix 4. Miscellaneous facts of Korea’s Telecom market

[Broadband by technology in Korea]

<table>
<thead>
<tr>
<th>Year</th>
<th>Satellite</th>
<th>FTTH</th>
<th>HFC</th>
<th>LAN</th>
<th>xDSL</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>13.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22.7</td>
</tr>
<tr>
<td>2012</td>
<td>11.8</td>
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<td></td>
<td></td>
<td></td>
<td>28.2</td>
</tr>
<tr>
<td>2013</td>
<td>9.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25.5</td>
</tr>
<tr>
<td>2014 April</td>
<td>9.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25.1</td>
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Source: MSIP (2014)