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How Public Telecommunications Operators Try to Survive

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1. Brief History of Telecommunications and Broadcasting in Japan

1985 Privatization of NTT and introduction of competition in all areas of telecommunications market
1987 Competition in the long distance phone services started.
1992 Spin off of NTT DoCoMo
1994 Rapid growth of mobile services started.
1999 NTT's reorganization
(former NTT→Headquarters, NTT East, NTT West, NTT Com in line with traditional phone services)
2001 Broadband services took off.
(cable, ADSL, FTTH)
2003 Digital terrestrial broadcasting started.
(the start of the final digitization of broadcasting)

2006 Policy study of competition policy in the IP age started.
(including the net neutrality issue)
2006 Mobile number portability started.
2006 The rapid growth of FTTH started.
2006 Legal reform took into effect that enabled the distribution of digital terrestrial broadcasting programs through IPTV.
2006 NTT's NGN field trial started.
2007 Commercialization of NGN ?
2010 Target year of the broadband availability throughout Japan
2011 Analog switchoff of terrestrial broadcasting

2. Sea changes in Telecommunications in Japan

Typical examples of the sea changes in telecommunications are shown such as the rapid shifting from fixed phone services to mobile phone services to multimedia data services in wired as well as wireless networks.

Fixed Lines

-- 56M subscribers as of December 31, 2006 (*1)
-- The peak number was 62M in 1997.(*2)
-- The revenue of fixed lines decreased as much as 1.7 billion euro during April – December in 2006. (*3)
-- The number of fixed line subscribers was surpassed by the number of mobile subscribers in 2002.(*2)

Mobile

-- 96M subscribers as of March 31, 2007 (*4)
-- The penetration rate: 81.2% (population ratio) (2005)

-- The subscription growth rate has matured.

Mobile (continued)

-- Subscribers by carriers as of March 31, 2007
NTT DoCoMo: 52M (54%)
KDDI: 28M (29%)
Softbank Mobile: 15M (16%)
-- Average Revenue Per User (ARPU) in 2005(*5): 6,769 yen = approx. 42 euro
Voice ARPU: 4,902 yen (72.4%)
Data ARPU: 1,867 yen (27.6%)
-- Subscribers by system as of March 31, 2007 (*6)
PDC: 26M (27%)
W-CDMA/CDMA2000: 70M (73%)

-- The number of shipment of mobile phones with one segment broadcasting service(*7): 5M (as of February 28, 2007)

Multimedia Services

 # Internet

Internet users: 30M as of December 31, 2006 (*8)
Broadband users: 25M (84% of the total) as of December 31, 2006.
-- FTTH users: 8M (market share: 31%)
785 thousand increased from September to December, 2006.
-- DSL users: 14M (55%)
The users decreased 159 thousand from September to December, 2006.
-- Cable modem users: 3.5M (14%)
In June 2006, DSL users began to decrease for the first time. (*9)

Triple Play

NTT East/West	KDDI	Softbank Group	J:COM
BFlets	Hikari one	BB Hikari	Grand Slam Service
Hikari Phone IP Phone (0AB – J) Video Distribution	Hikari one Net Hikari one Phone Hikari one TV	BB Phone Hikari IP Phone (0AB – J) BBTV	J:COM NET Primary Phone (0AB – J) Digital Hivision + J:COM MOBILE

VoIP

— Two kinds of VoIP services are provided.

050C – K (11 digits) Best effort type: via ADSL
0AB – J (10 digits) Guaranteed type: via fiber optics

Video Distribution Services through Broadband

Provider	Service brand name	Users	Services
IP multicast			
BB Cable	BBTV	Broadcasting service is provided to subscribers of Yahoo! BB Hikari/ADSL.	Multi-channels (41ch) VOD (5000 titles)
KDDI	Hikari one	Broadcasting service is provided to subscribers of DION or the other Internet service providers	Multi-channels (35 ch) VOD (5000 titles)
Online TV	4th Media	Broadcasting service is provided to subscribers of Flet's Hikari Premium and B Flet's	Multi-channels (more than 60 ch)
I-Cast	On Demand TV	Broadcasting service is provided to subscribers of Flet's Hikari Premium and B Flet's	Multi-channels (31 ch)
The same system as CATV			
Opticast	Ska Per Hikari	Multi-channel service of Sky PerfecTV is provided to subscribers.	Terrestrial broadcasting service, multi-channels, Pay Per View (SkaPer 270ch)
STNet	Pikara Hikari TV	Broadcasting service is provided to subscribers	Terrestrial broadcasting service, multi-channels more than 50 channels
Telecommunications			
NTT Communications	OCN Theater	Video content with the Internet service and telephone service is provided to subscribers of CoDen Hikari	VOD (100 titles with unlimited viewing)
CasTY	casTY	Video content with high quality image is provided to subscribers of Hikari one free of charge, and video content with low quality image is provided to subscribers of the Internet service free of charge.	VOD
TV Bank	TV Bank	Video content is provided to users of the Internet free of charge.	VOD
USEN	GyaO	Video content is provided to users of the Internet free of charge.	VOD

3. Sea changes in Broadcasting in Japan

Some examples of the changes in broadcasting are illustrated such as development of multi-channel video services as well as digitization of terrestrial broadcasting.

Multi-channel Video Distribution Services
-- Cable and satellite broadcasting users(*10)
2001 6M households (12.2%)
2006 10M households (19.8%)
-- Annual growth rate: 12.9% per year (from 2001 to 2006)

*The number of users itself is rather small compared with that of other countries such as the U.S. and the UK. However, annual growth rate is comparatively high.

Digital Terrestrial Broadcasting
-- Service areas in December 2003
Tokyo, Osaka, Nagoya
-- Expanded nationwide in December 2006
-- Population Coverage
84% of all of the households as of 2006
Target in 2008: 90%
-- Analog switch off
According to the Radio Law, analog switch off should be carried out by July 24, 2011.

Provider	Service brand name	Users	Services
Broadcasters have gradually started to provide video programming via communications networks.			
Fuji TV	Fuji TV on demand	Programs of Fuji TV and video content are provided to major ISP users and STB users	VOD
NTV	The 2nd NTV	Past programs of NTV are provided to all the Internet users	VOD
TBS	TBS BooBo BOX	Programs of TBS are provided to major ISP users and STB users	VOD

4. The root causes of the sea changes

PTOs are facing sea changes due to not only digital technology but also globalization of the economy and business activities. Digital technology enables the unbundling of conduit and content. That means content can freely choose conduit and vice-versa unless laws stipulate otherwise.

Digital technology enables:

-- unbundling of conduit and content
-- Triple play
-- IP a pervasive technology

Globalization of the economy and the business activities

* M&A

-- Japan Telecom was separated into Japan Telecom Holdings and Japan Telecom when Vodafone acquired 66.7% of the stocks of Japan Telecom in 2001.

-- In 2003, Japan Telecom was sold to an investment fund, Ripplewood Holdings.

Then, Japan Telecom was sold to Softbank in 2004 (Softbank Telecom). Softbank also bought Vodafone Japan (Softbank Mobile) in 2006.

*Big losses caused by overseas investment
at the time of telecom bubble and bust in the first years of the 21st century
e.g.
NTT DoCoMo acquired 16% of the stocks of AT&T Wireless in 2001. Then, AT&T Wireless was acquired by Cingular Wireless in 2004. DoCoMo sold its stocks to Cingular and made a huge loss.

5. Various usages over the electronic communication networks including the Internet

Electronic communications networks have been utilized for various purposes than ever before. And people work, learn, entertain and lead a daily life by heavily depending on electronic communications networks.

Communication
-- VoIP
-- mass media (one way)
-- consumer generated media (CGM) like blog and SNS

Information retrieval and gathering
Google's mission is "to organize the world's information and make it universally accessible and useful."

e-Commerce (e-transaction)
-- online shopping, auction, e-trade, e-banking

Content distribution

e-Government

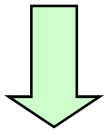
Applications for social services
-- tele-medicine, e-learning,

Intra and inter firm collaboration

Various work style through broadband services
-- SOHO, tele-work

As a consequence of various use of applications, upper layer businesses are expanding and getting sophisticated.

That leads to…



Web 2.0 World

6. Business strategy to address sea changes

How should PTOs respond to such huge changes strategically not only to survive but also to thrive in an unprecedented management environment?

There are two ways to improve the bottom line: cutting cost and increasing revenues

1. Upgrading the network infrastructure
   the shift from public switched network to next generation network
   (IP based, high speed, router-based, reliable and guaranteed network)

2. Finding out a growth engine by wisely crafted revenue sharing schemes
   *provide upper-layer services such as Internet connection and portal services
   *provide corporate services

3. Taking advantage of positive alliance based over convergence issues between telecom and broadcasting and between fixed and mobile services

4. Overseas business deployment

5. Increasing non-traffic businesses

6. CSR (corporate social responsibility) activities
   *promoting secure and safe network use
   *concomitantly, expansion of the market accompanies through users, usage frequencies, use applications

7. Upgrading the alliance strategy
   *vertical integration
   *alliance among players of different layers

-- The key question is whether PTOs have enough expertise and well deliberated strategies.
   If over-expectations in a short run and under-estimation in a long run might be the way of the world, PTOs should find out the optimal timing of when to start new services and how to speed the penetration rate of the services to make their R&D efforts and investment rewarded financially.

7. Policy Framework

How effectively and efficiently can a nation take advantage of electronic communications networks? It might dictate the domestic industry structure, the competitiveness of PTOs and firms of different industry segments, and the quality of life as a whole on a larger scale than ever before.

The importance of the industry is twofold. One is that this industry itself is a large and growth industry. The other is that this industry provides ubiquitous inputs to all other industries and influences the quality of life. Thus, the quality and the price are crucial determinants for competitiveness of all industries and the quality of life.

There have been three major ICT related policies since 2001

-- "e-Japan Strategy" was made public in January 22, 2001
Japan must take revolutionary yet realistic actions promptly in order to create a "knowledge-emergent society, "where everyone can actively utilize IT and fully enjoy its benefits.
We will strive to establish an environment where the private sector, based on market forces, can exert its full potential and make Japan the world's most advanced IT nation within five years.

-- "e-Japan Strategy II" was made public in July 2, 2003
Policy focuses shifted from network infrastructure to effective IT utilization
to create a new society suited to the 21st century.

-- "New IT Reform Strategy" was made public in January 19, 2006.
-- Realizing Ubiquitous and Universal Network Society. Where Everyone Can Enjoy the Benefits of IT--

This new IT strategy has been formulated based on the following three principles:
-- Significant advancement through structural reforms
-- Emphasizing users and citizens
-- International Contribution and the strengthening of international competitiveness.

(Appendix)

*1: Subscription Contact Numbers for Telecommunications Services as of the end of December 2006 by MIC, the Ministry of Internal Affairs and Communications

http://www.soumu.go.jp/joho_tsusin/eng/Releases/Telecommunications/news070306_1.html

*2 & 4: Transition in the number of subscribers to fixed communications and mobile communications by MIC

http://www.johotsusintokei.soumu.go.jp/whitepaper/eng/WP2006/chapter2-1.pdf

*3: The settlement of accounts of NTT from 2005 to 2006.

*5: Transition of ARPU by MIC

http://www.johotsusintokei.soumu.go.jp/whitepaper/ja/h18/index.html (Japanese only)

*6: Number of subscribers by TCA, Telecommunications Carriers Association
http://www.tca.or.jp/eng/database/daisu/yymm/0703matu.html (Japanese only)

*7: The number of shipments of mobile phones with one-segment broadcasting service by JEITA, Japan Electronics and Information Technology Industries Association

http://www.jeita.or.jp/japanese/stat/digital/2007/index.htm (Japanese only)

*8: The number of subscribers of broadband services by MIC

http://www.soumu.go.jp/s-news/2007/070313_5.html (Japanese only)

*9: The number of subscribers of broadband (as of June 2006) by MIC
http://www.soumu.go.jp/s-news/2006/060911_5.html (Japanese only)

*10: Market of Multi-channel Video Distribution & Data Service by “Broadcasting Journal” (December 2006)