APRICOT 2005

Asia Broadband Summit

http://www.rbbtoday.com/

What is the Economical Effect of Broadband in Japan?

Feb.22, 2005

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Summary

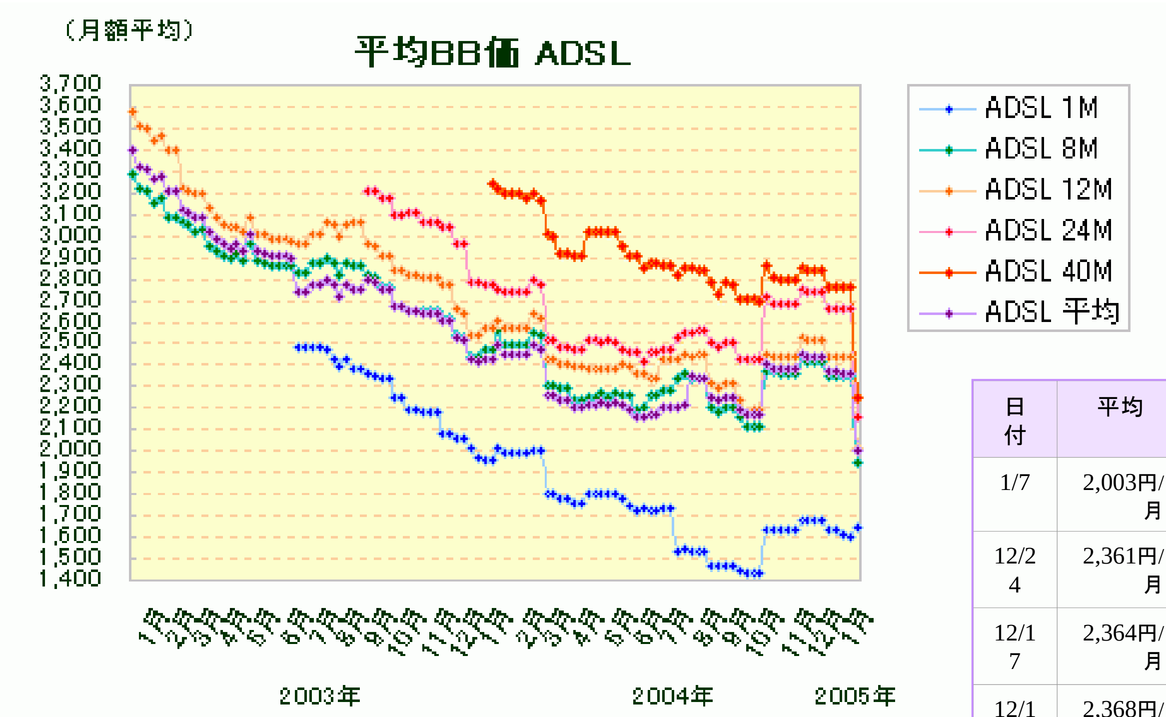
～What is the Economical Effect of Broadband in Japan?～

The commercialization of the Internet began at the end of the 20th century. This coincided with the ″lost decade″ in Japan, a lengthy period of economic stagnation. Following this period, Japan’s Government has moved to a policy of structural reform, however has this really been effective? The answer to that question may not be known for some time however recently the Cabinet created a task force to review and report on the economic effects of the national IT policy. The majority of the task force was comprised of economic researchers however as the lone task force representative of the Internet industry in Japan. I will talk in this session on the Economic Effects of IT Policies on Broadband Penetration in Japan.

In particular, the talk will look at the successes and issues of IT-based society infrastructure development, IT applications, and IT economic impact, offering suggestions for answering outstanding questions.

Status of Broadband Subscribers in Japan and the world

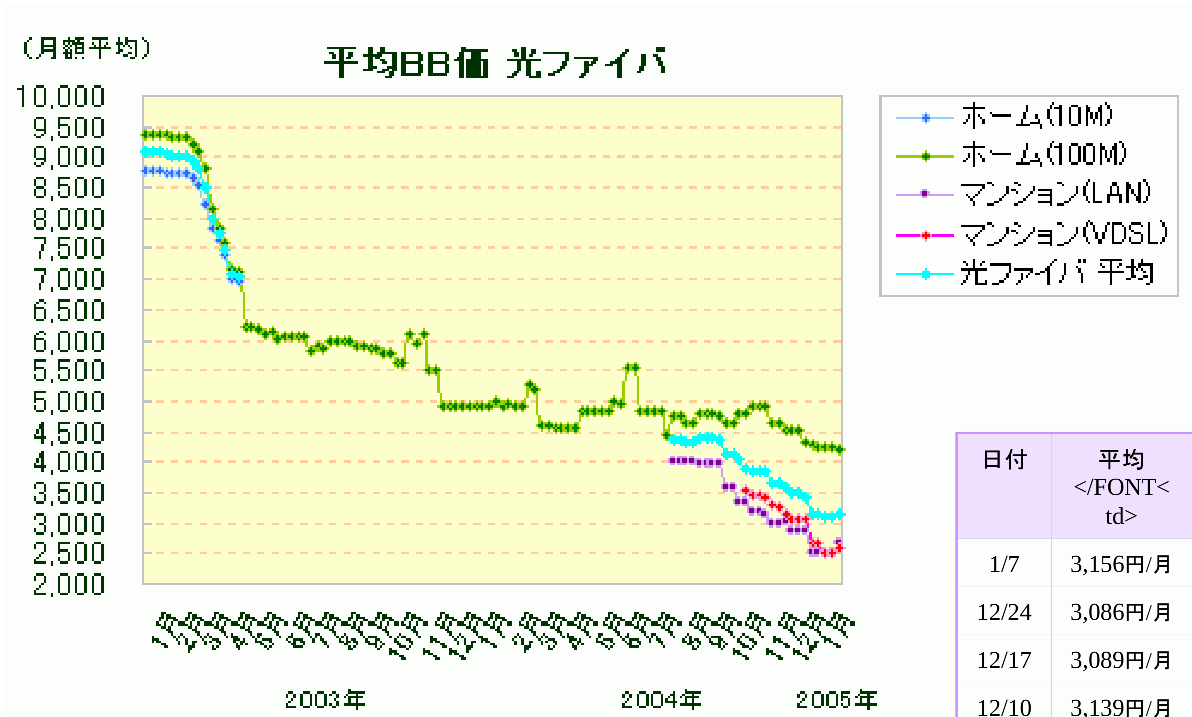
Average Price of ADSL ¥/month in Japan



日付	平均	40M以上	24M以上	12M以上	8M以上	1M以上
1/7	2,003円/月	2,254円/月	2,155円/月	2,014円/月	1,950円/月	1,644円/月
12/24	2,361円/月	2,759円/月	2,663円/月	2,439円/月	2,348円/月	1,598円/月
12/17	2,364円/月	2,759円/月	2,663円/月	2,439円/月	2,348円/月	1,612円/月
12/10	2,368円/月	2,759円/月	2,663円/月	2,439円/月	2,348円/月	1,633円/月
12/3	2,370円/月	2,759円/月	2,663円/月	2,439円/月	2,348円/月	1,639円/月
11/26	2,437円/月	2,838円/月	2,738円/月	2,512円/月	2,420円/月	1,679円/月
11/19	2,437円/月	2,838円/月	2,738円/月	2,512円/月	2,419円/月	1,678円/月
11/12	2,437円/月	2,838円/月	2,738円/月	2,512円/月	2,420円/月	1,679円/月

資料提供：http://www.kakaku.com/bb/news.htm

Average Price of FTTH ¥/month in Japan



日付	平均 </FONT< td>	ホーム </FONT< td>	マンション (LAN)	マンション (VDSL)
1/7	3,156円/月	4,199円/月	2,664円/月	2,604円/月
12/24	3,086円/月	4,240円/月	2,496円/月	2,523円/月
12/17	3,089円/月	4,240円/月	2,496円/月	2,530円/月
12/10	3,139円/月	4,240円/月	2,496円/月	2,681円/月
12/3	3,158円/月	4,297円/月	2,496円/月	2,681円/月
11/26	3,420円/月	4,323円/月	2,883円/月	3,054円/月
11/19	3,487円/月	4,524円/月	2,883円/月	3,053円/月
11/12	3,489円/月	4,530円/月	2,883円/月	3,054円/月

資料提供：http://www.kakaku.com/bb/news.htm

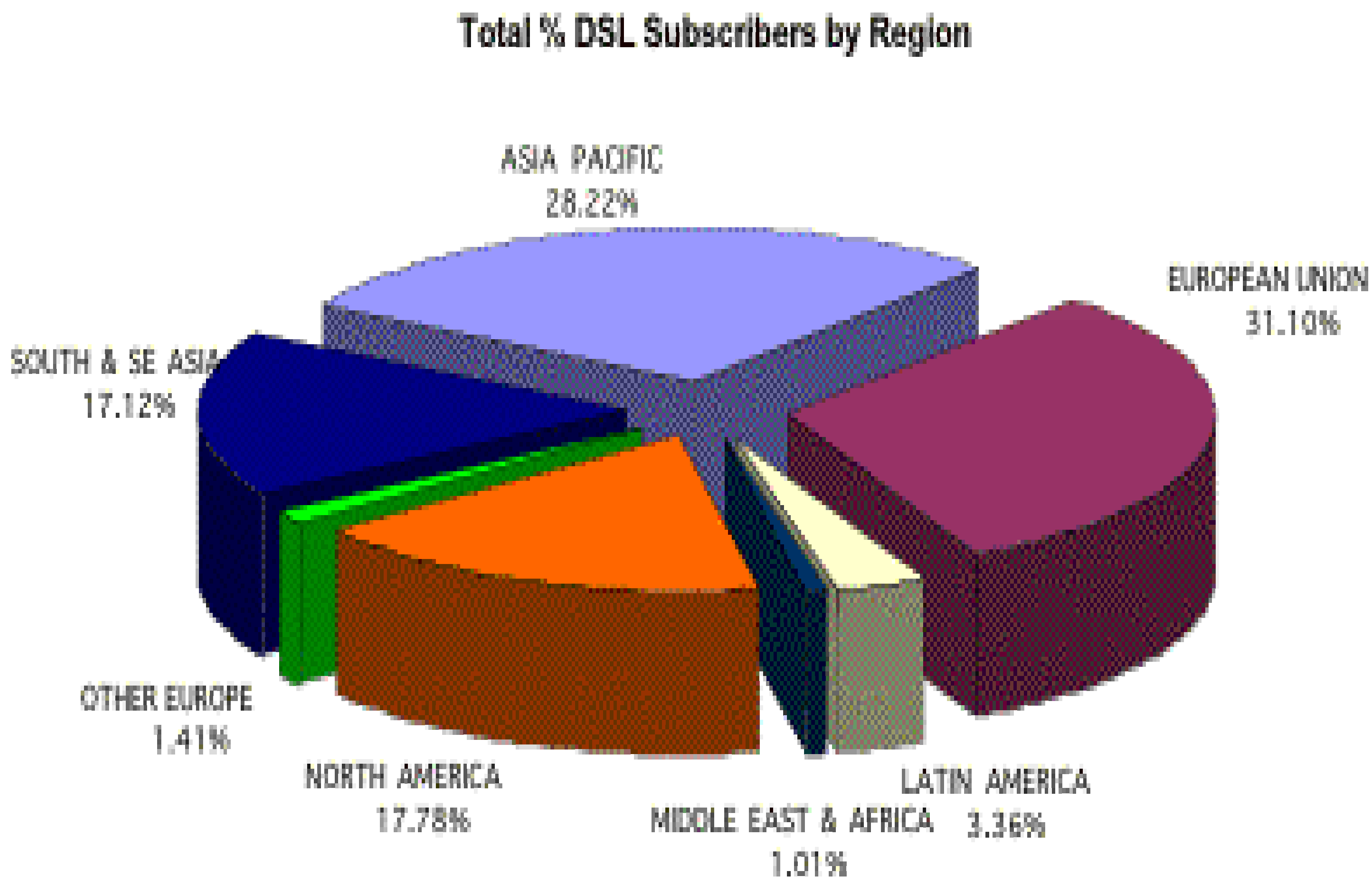
DSL Subscribers by Region

Top countries: total DSL subscribers Q3 04
September 30, 2004

Ranking	Country	Total DSL Q3 2004	Ranking	Country	Total DSL Q3 2004
1	China	13,700,000	11	Spain	2,227,805
2	Japan	12,739,564	12	Brazil	1,633,700
3	USA	12,594,346	13	Netherlands	1,552,000
4	South Korea	6,717,251	14	Belgium	983,000
5	Germany	5,950,000	15	Australia	910,000
6	France	5,253,000	16	Hong Kong	774,000
7	Italy	3,680,000	17	Sweden	751,000
8	UK	3,335,000	18	Switzerland	717,000
9	Taiwan	2,900,000	19	Israel	600,000
10	Canada	2,568,351	20	Denmark	594,000

Source: DSL Forum and Point Topic

DSL Subscribers by Region



DSL Promotion Topics in the world

European Union (EU) countries currently make up the largest regional DSL population worldwide, adding more than 9.25 million subscribers in the first three quarters of this year, to reach 26.5 million. with 11 countries in the top 20. The Netherlands achieved 15.52% penetration of phone lines, France 15.45% and Italy 13.41%, with the UK, at 9.49%, moving into the top 20 for the first time.

Middle East and Africa recorded DSL subscriber growth of 59.5% in the first three quarters of 2004, led by Israel, now with 600,000 and Turkey, with almost 200,000.

Asia Pacific added almost four million subscribers, with two countries reaching the DSL Forum¹s first stage target for a global mass-market for broadband DSL (20% of all phone lines): South Korea (28.88%) and Taiwan (22.14%). Six countries now have greater than five million subscribers, and another seven countries have over a million.

**Source: DSL Forum and Point Topic*

Economical Effect of Broadband Policy

from

Report＃3 Task Force on Structural Reform

Cabinet Office

Government of Japan

1. World Class IT Infrastructure?

The Results

- **The cheapest and fastest network infrastructure has been arranged. Broadband subscribers have increased rapidly since 2001.**

- **Internet access thru Cellular Phone is projecting in Japan and Korea.**

The Themes

- **ADSL has diffused, but FTTH or Wireless LAN should diffuse more for various kind of applications.**
- **How to promote new participants for Cellular Phone Market and Effective Allocation of radio spectrum.**

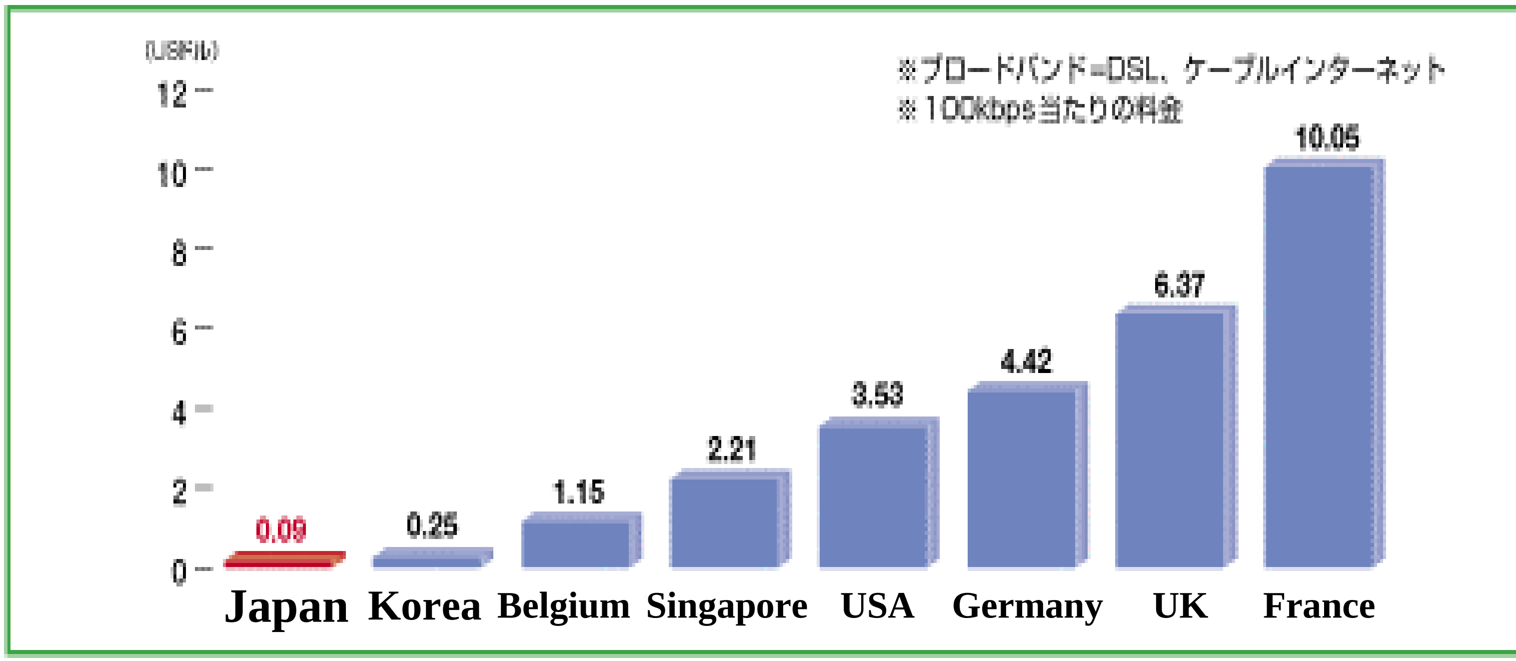
Action

- **Competition is the most important.**

Price Comparison of Broadband in the world

IRI
Ubilabs Innovations

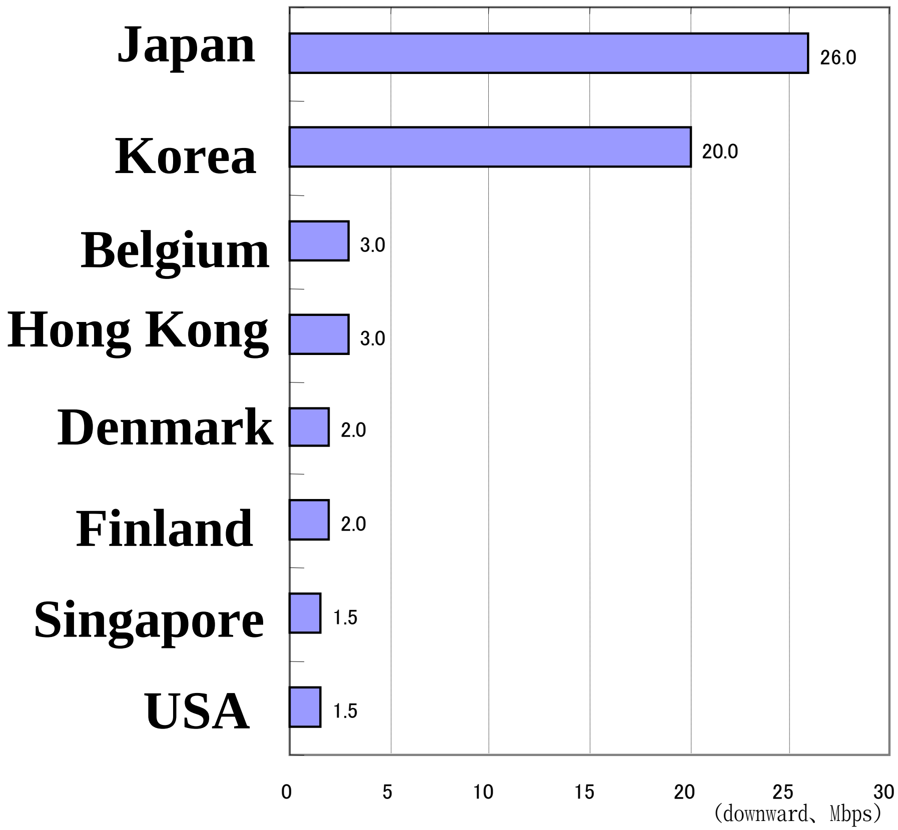
ブロードバンド料金の国際比較（2003年7月）



（出典：「ITU Internet Reports: Birth of Broadband（2003年9月）」に基づき作成）

1. Source ITU "Birth of Broadband"
2. July,2003
3. Price/100kbps/month

Broadband (ADSL) Speed Comparison in the world



*ITU Internet Reports 2003

Broadband Subscribers in Japan

IRI Ubilabs Innovations

● **Growth Curve Shift from ADSL to FTTH in 2004 or 2005**

Total 19M subscribers/2004 end!

Total （as of end of Aug.）
(＊increase per month)

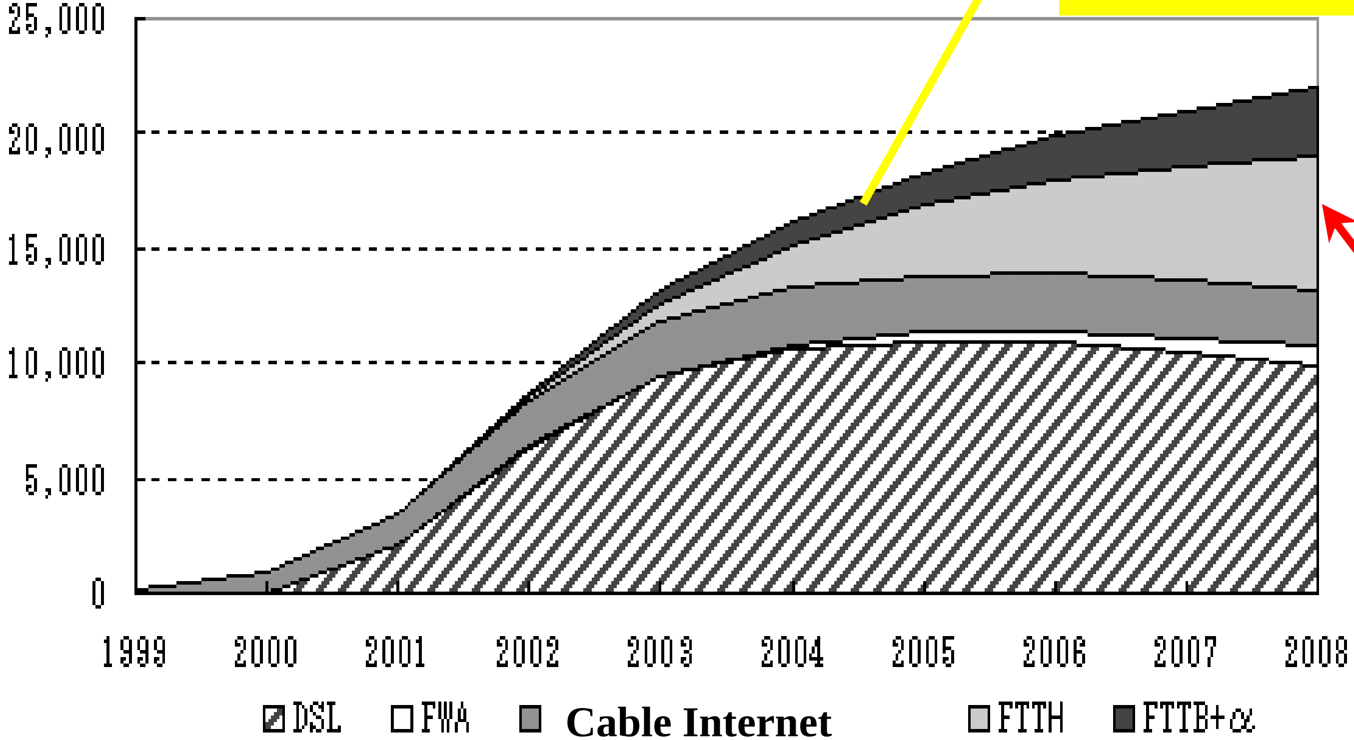
ADSL: 12,549,000 (220,000/mo.)

FTTH: 1,601,000 (100,000/mo.)

CATV: 2,768,000 (30,000/mo.)

Total: 16,918,000

(1,000 households)

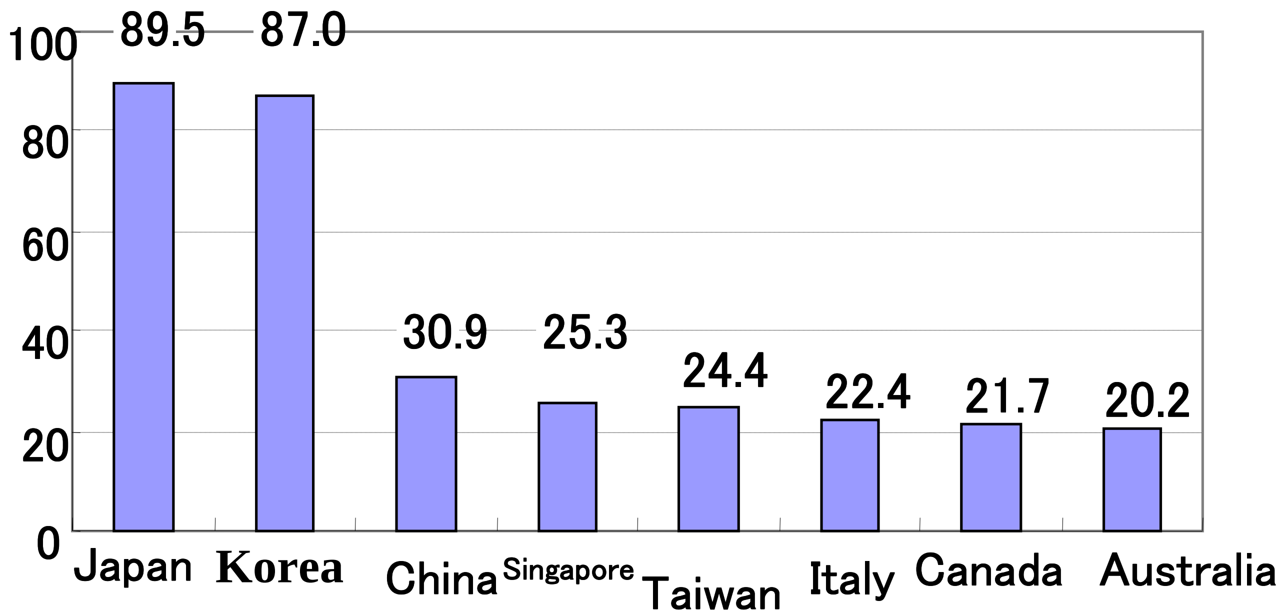


(end of FY)

To 25-30million households in 2008

Source: NRI

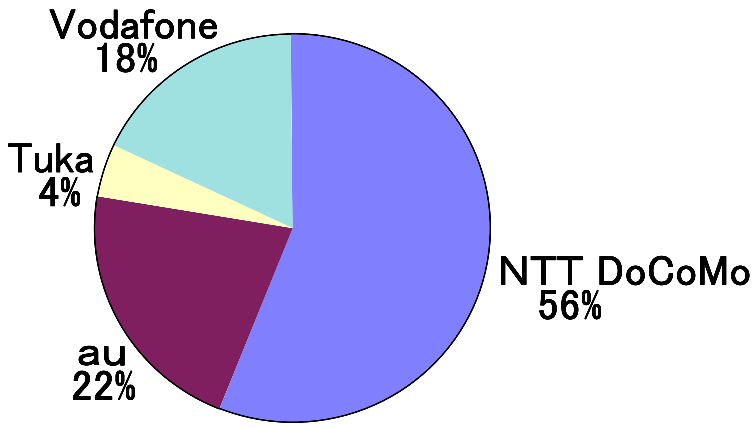
Internet Support Ratio of Cellular Phone in the world



＊ Sept.,2003

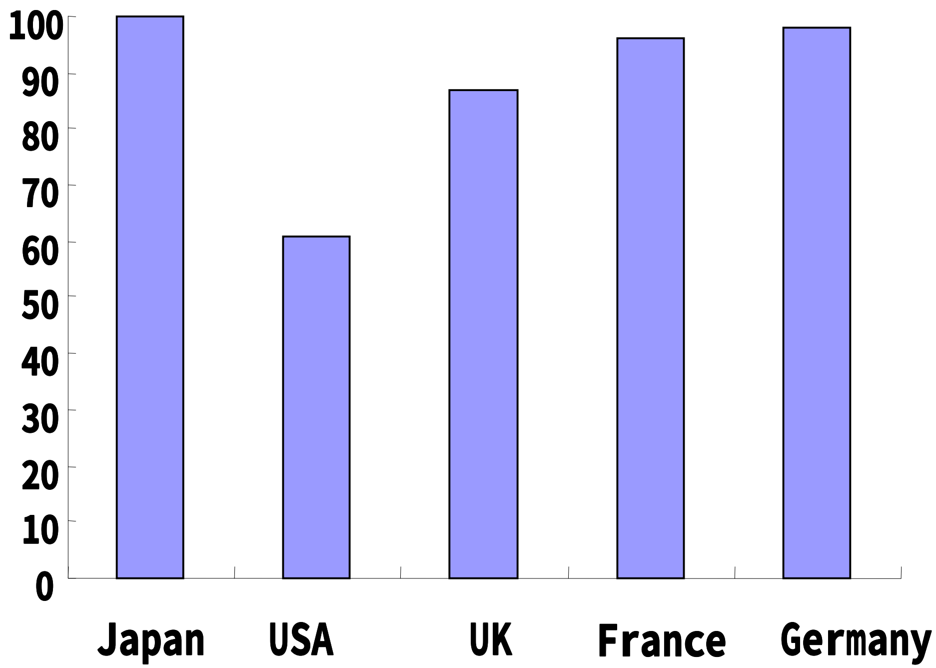
Status of Cellular Phone market

Market Share



* Sept.2004

Cellular Phone Price Comparison



2. How convenient by IT ?

The Results

- 96% of Internet Users have answered the net made the society more convenient.
- **Faster Information Acquisition, Ubiquitous Communications, etc.**

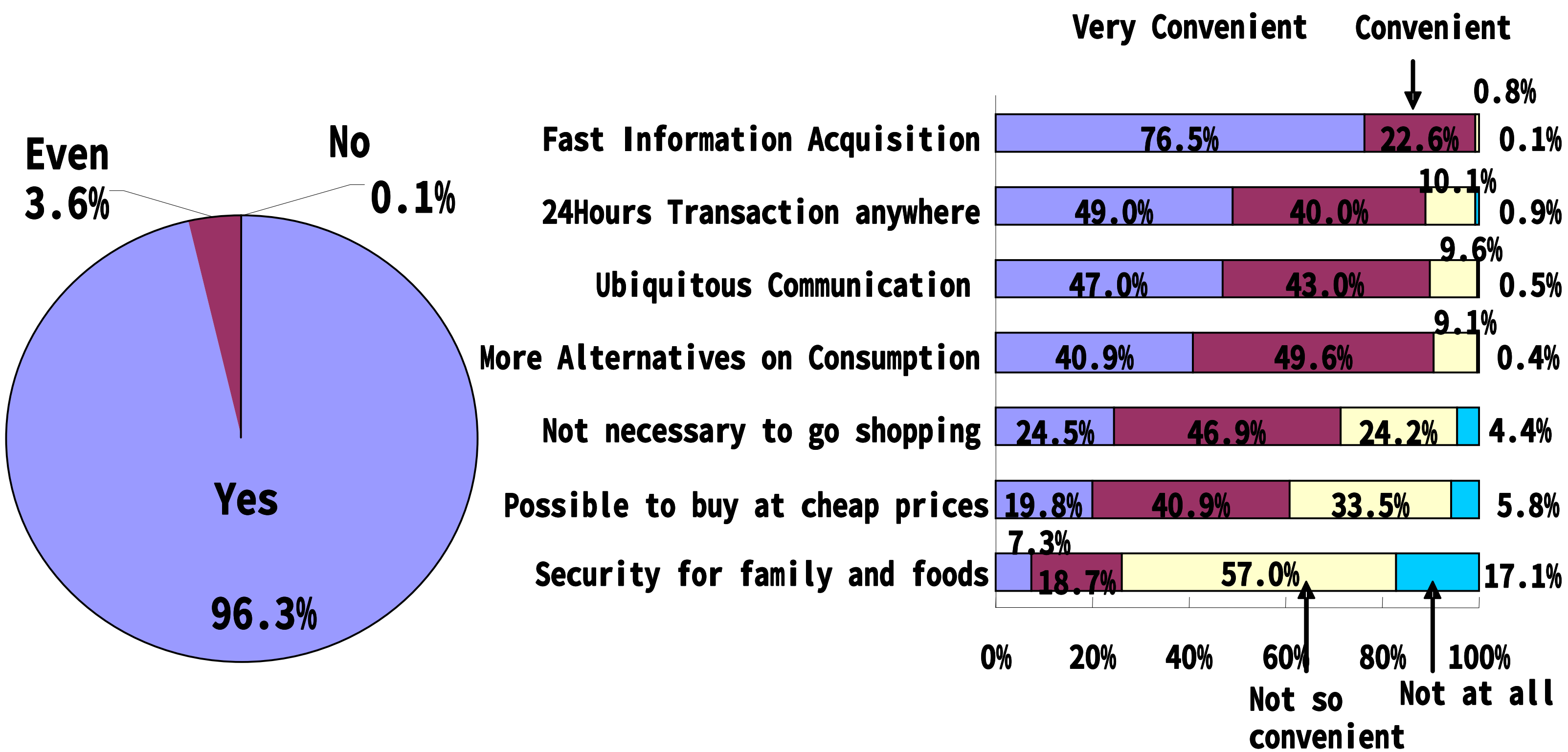
The Themes

- Very few utilization in Government,Medicine, and Education!

Action

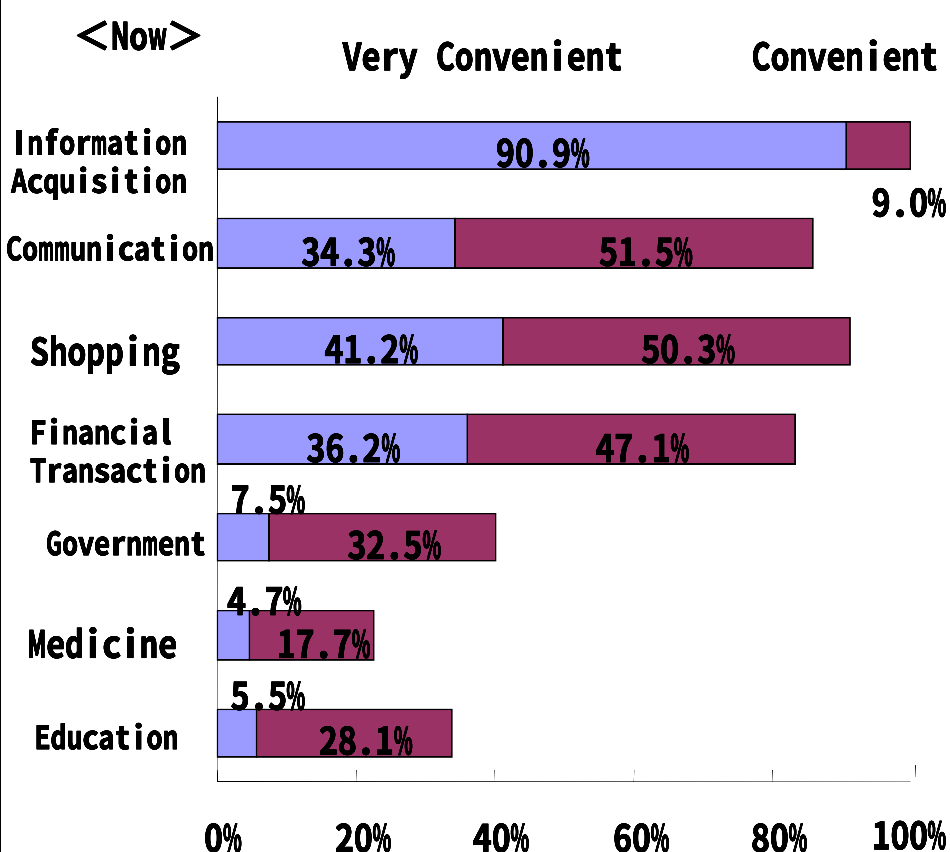
- Set up Numerical Goal of IT utilization
- Deregulation and Standardization to promote market
- Promote Talented People
- Strategic IT utilization Categories,such as Government, Medicine, and Education

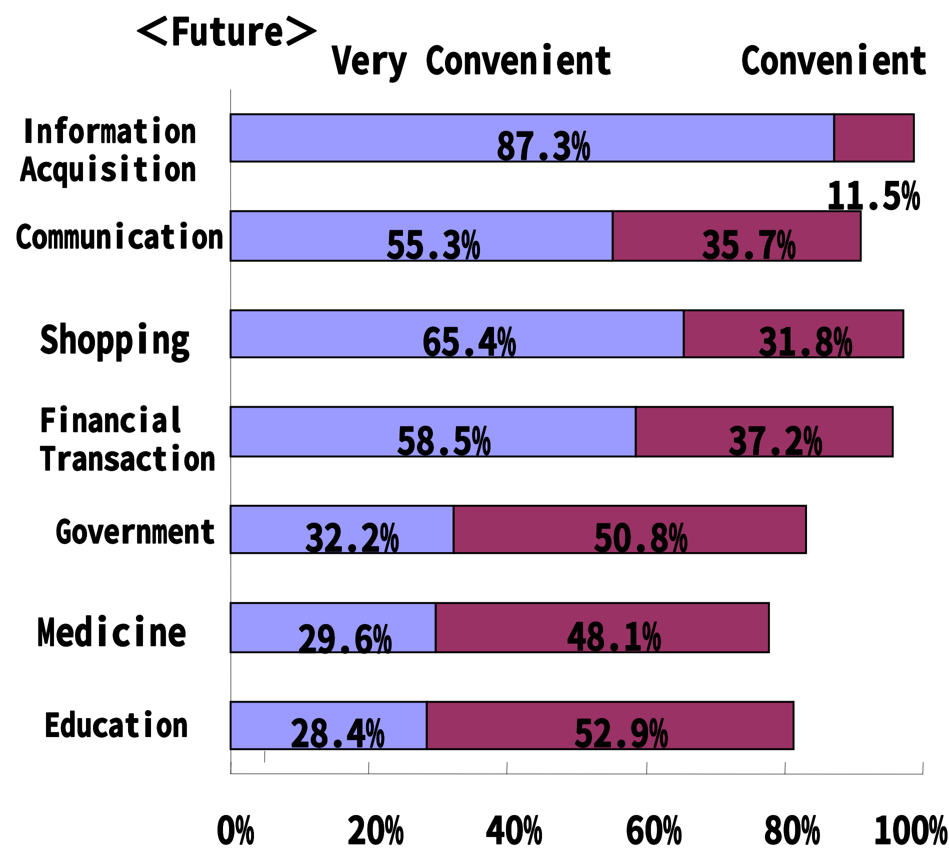
Evaluation of covenience by Internet



•conduct a survey of a 1120 of people

Categorized Evaluation of covenience Internet





•conduct a survey of a 1120 of people

IT Utilization Status in Medicine and Education

IT utilization in Medicine

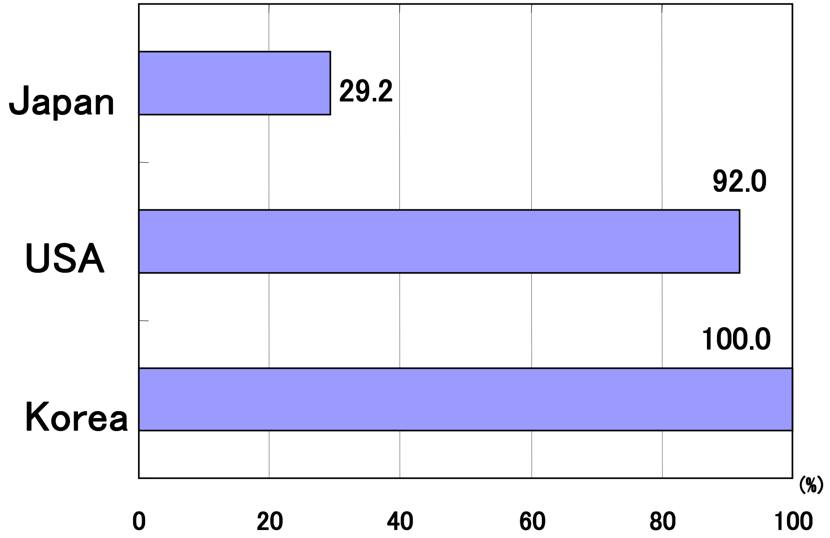
Digitalization of a medical receipt

Korea（2002.10）
- On-line 72．5%
- Magnetic 3．8%

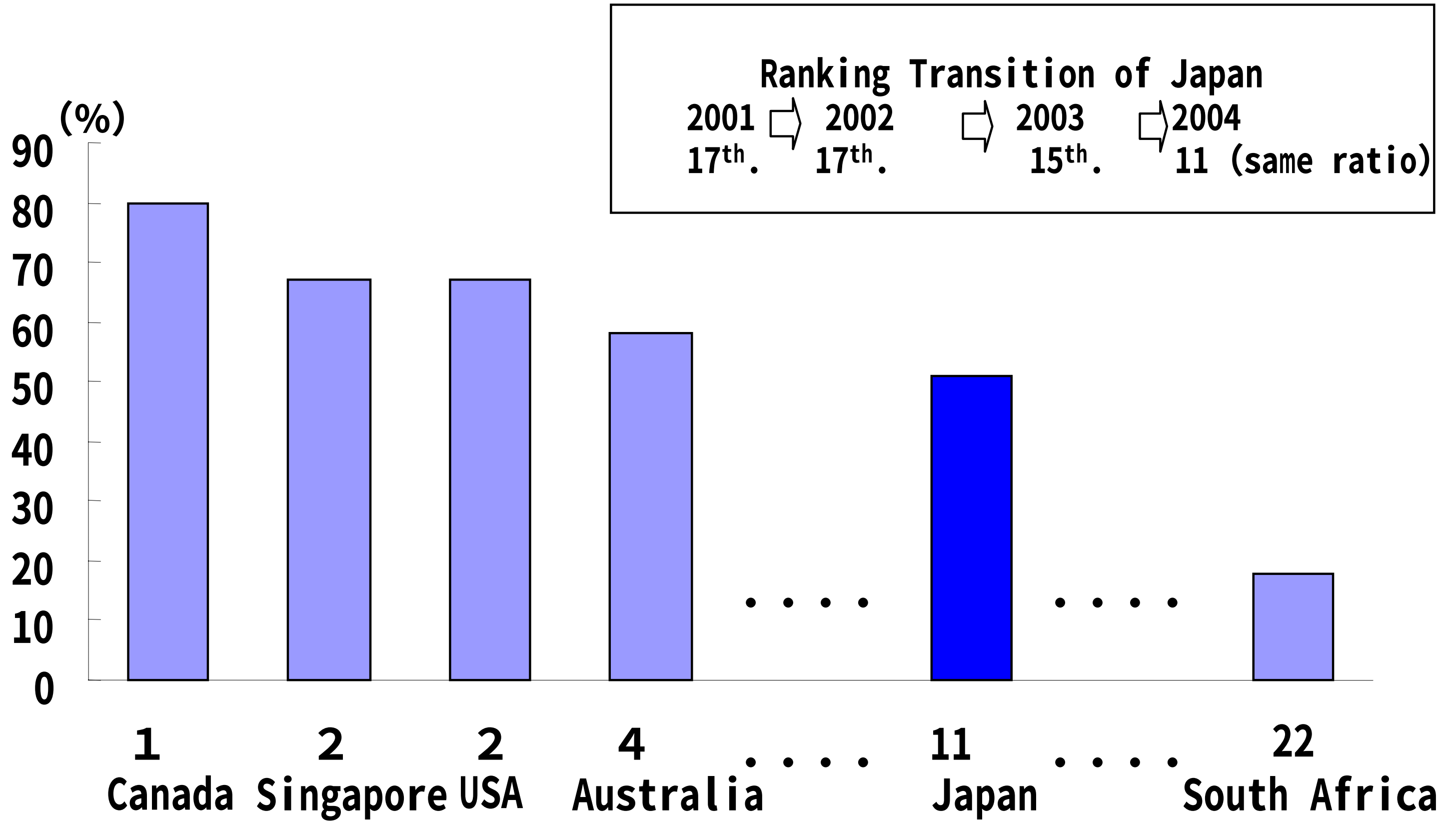
Japan（2003.12）
- On-ine 0．0%
- Magnetic 7．2%

IT utilization in Education

Internet Connectivity at each Classroom



Evolution Status of e-Government (2004)



3. How is Economical Efficiency improved by IT?

The Results

●Labor Productivity: Improved 0.9% by IT since

（Total Improvement : 1.1% ⇒80% by IT）

The Themes

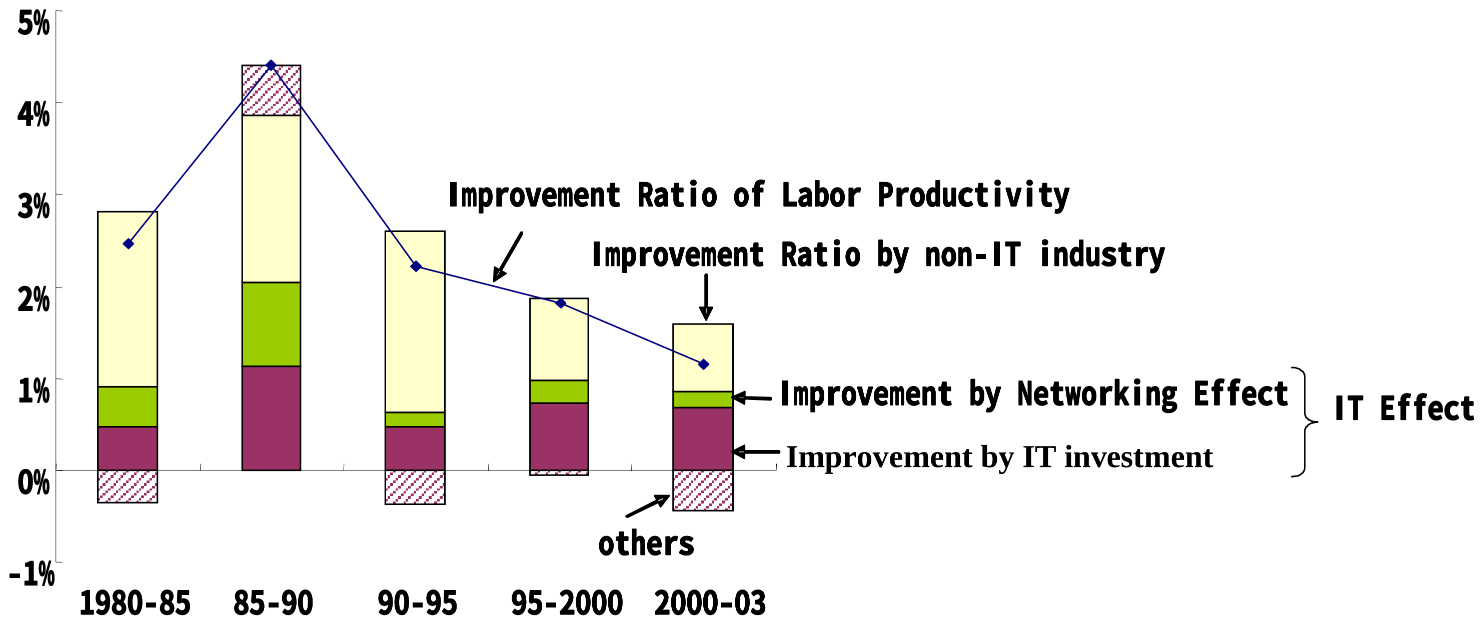
● Labor Productivity should be improved by IT investment!

Enterprises have not utilized IT yet. 。

Action

●Structural Reform of Organization, and IT basic education,etc.

Improvement Factor Analysis of Labor Productivity



•1. Assuming Kob-Douglas type production function, it is dissolved as follows.

$$\triangle(Y/L)/(Y/L) = \beta_{NonIT} \times \triangle(K_{NonIT}/L)/(K_{NonIT}/L) + \beta_{IT} \times \triangle(K_{IT}/L)/(K_{IT}/L) + \triangle TFP/TFP$$

Y: Value added portion, L: labor Investment, K_{NonIT}: non-IT capital stock, K_{IT}: IT capital stock

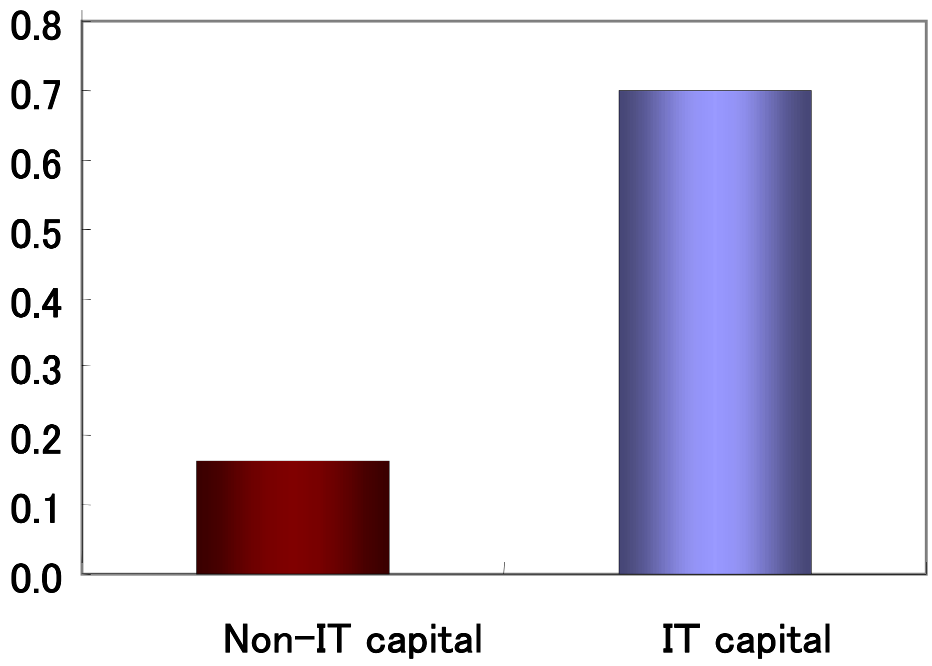
β_{NonIT}, β_{IT} :non-IT capital distribution and IT capital distribution ratio respectively

2. TFP improvement ratio has been divided into network-effect and the others.

Reinforcement Effect of Production Power by IT capital

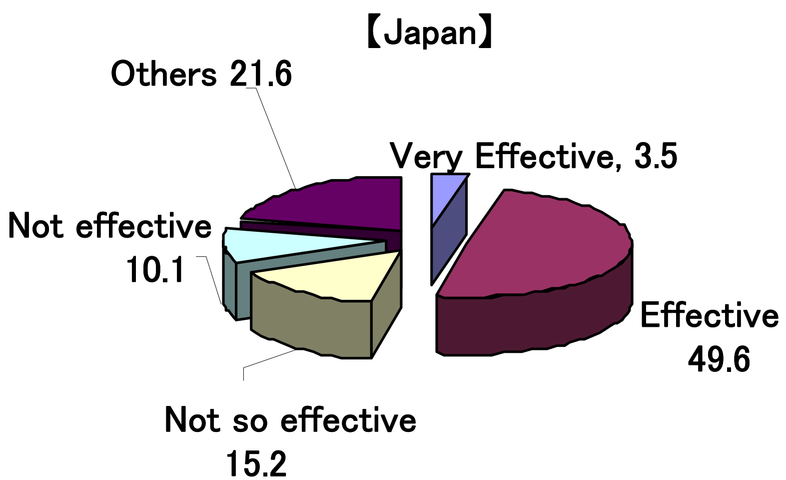
Ubilabs Innovations

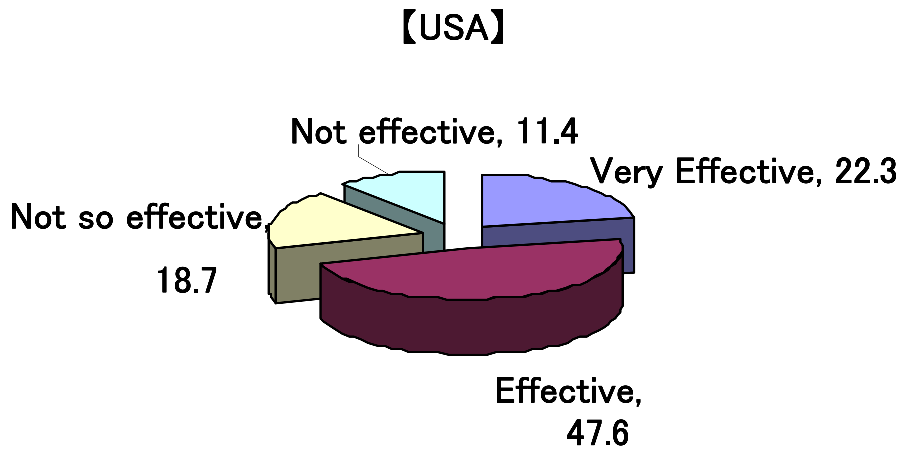
(Marginal production power)



* Estimated Value by Kob-Douglas type production function

Japan/USA

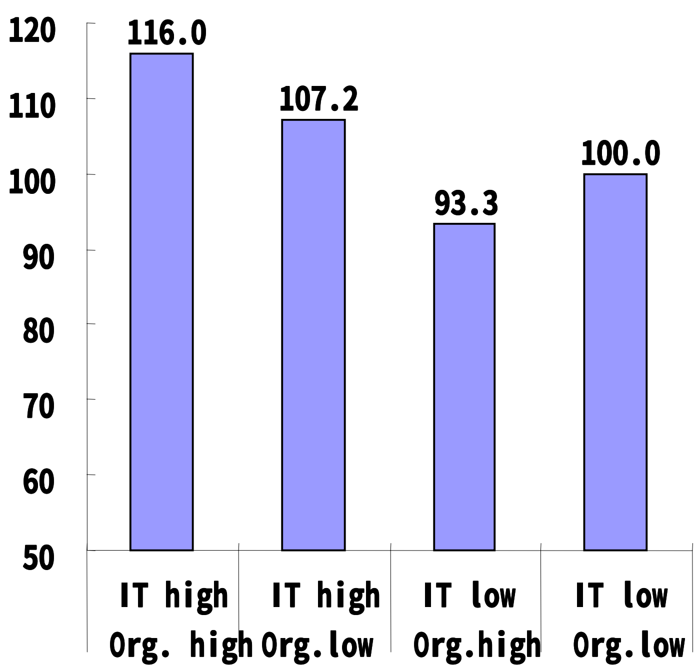

【Japan】
Others 21.6
Very Effective, 3.5
Not effective
10.1
Effective
49.6
Not so effective
15.2


【USA】
Not effective, 11.4
Very Effective, 22.3
Not so effective,
18.7
Effective,
47.6

IT Investment Effect about Organization Reform and Human Capital Issues

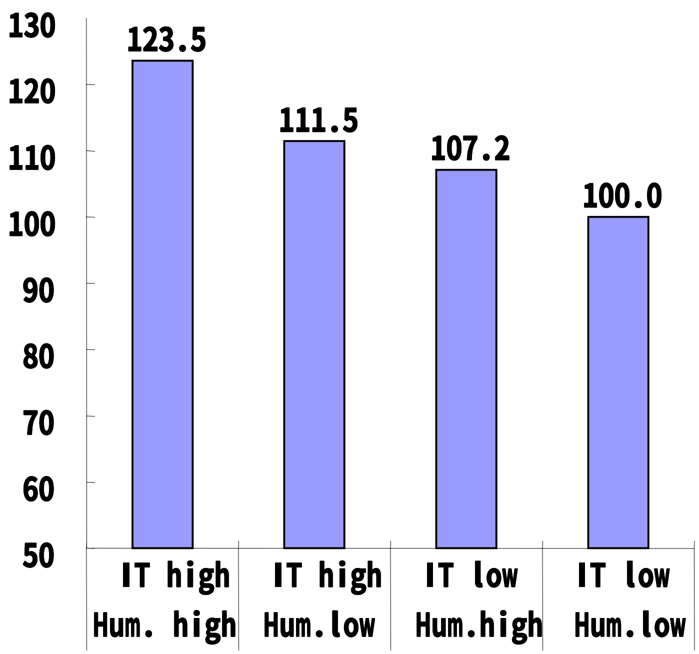
Productivity by Organization and IT relation

(Productivity：low IT and low Organization =100)



Productivity by Human capital and IT relation

(Productivity：low IT and low Organization =100)



Summary of Taskforce #3

Ⅰ. IT Infrastructure

● Already arranged World-class IT infrastructure.

Ⅱ. IT Utilization

● Not world-class yet

● Big space in Government, Education , and Medicine

● Obstacles from Anxiety for personal information and security

Ⅲ. Economical Effect of IT

● Enough possibility of productivity improvement by IT Investment.

● Structural Reform of Enterprises are required.

● Necessary to educate the talented people for IT

Market Trend of Internet Business by Broadband

● Prediction of each IT Market【Japan】

（unit:100M Oku¥:closed to M$）

Market		2002	2003	2008	CAGR
Broadband Market	ADSL	1,752	2,824	3,064	9.8%
	FTTH	127	453	3,593	74.6%
	CATV	1,114	1,354	1,157	0.6%
	Public Wireless LAN	0	10	430	112.2%
	Sub total	2,993	$\boxed{4,641}$	$\boxed{8,244}$	18.4%
Telecom Market	Wide Area Ethernet	540	1,150	6,052	49.6%
	Traditional Leased Line	10,368	9,000	5,618	-9.7%
	IP-VPN market	1,093	2,159	4,642	27.3%
	Cellular Phone	66,581	69,629	76,265	2.3%
	Sub total	78,582	$\boxed{81,938}$	$\boxed{92,577}$	2.8%
Broadcast Market	BS Digital	611	927	3,514	33.9%
	CS Digital	1,810	2,059	3,376	11.0%
	CATV	1,699	1,883	2,152	4.0%
	Terrestrial	0	217	11,801	122.4%
	Sub total	4,120	$\boxed{5,086}$	$\boxed{20,843}$	31.0%

Total 91,665 Total 12,1664

Source: NRI

ISP Market Outlook【Japan】

- Saturation of long-distance carriers/member management-type ISP market: ¥750 billion market

⇒Acceleration of re-structuring

- Access carriers will take the lead

⇒DSL: will peak in 2005-2006: ¥350 billion market

Yahoo!BB (35% share) and NTT East/West (37%) lead the market

*Outlook: escalation of competition to provide additional services to users

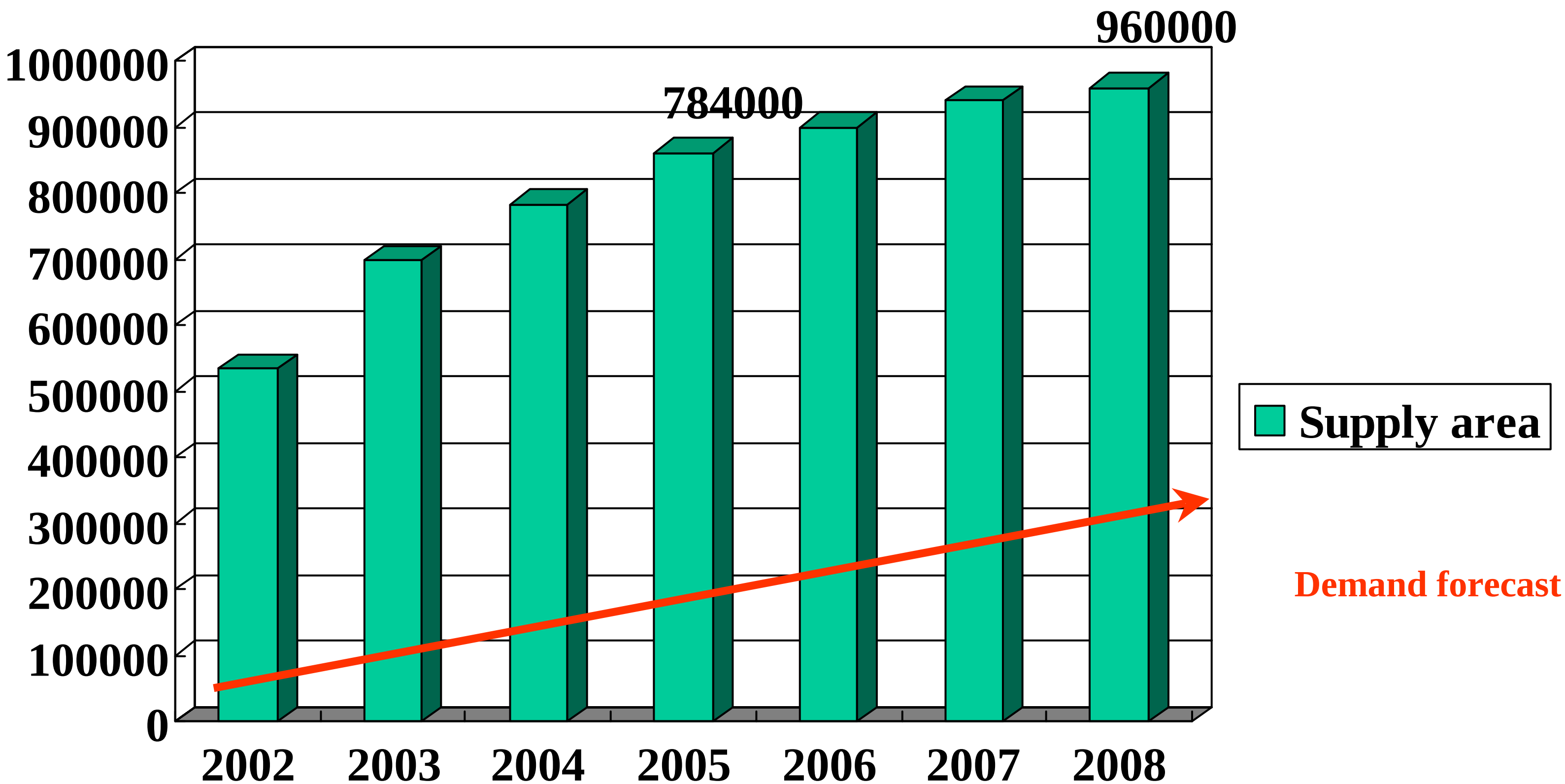
⇒FTTH: Growing market from 2008 as well: to become a ¥350 billion market

Share: NTT East/West: 65%, Usen: 20%, Electric power: 15%

*Outlook: Provision of additional FTTH-unique services the key to growth

⇒CATV: peak in 2004: 2.5 million households, ¥140 billion market

Internet Data Center Market【Japan】



Approx. 100 companies
have entered the market

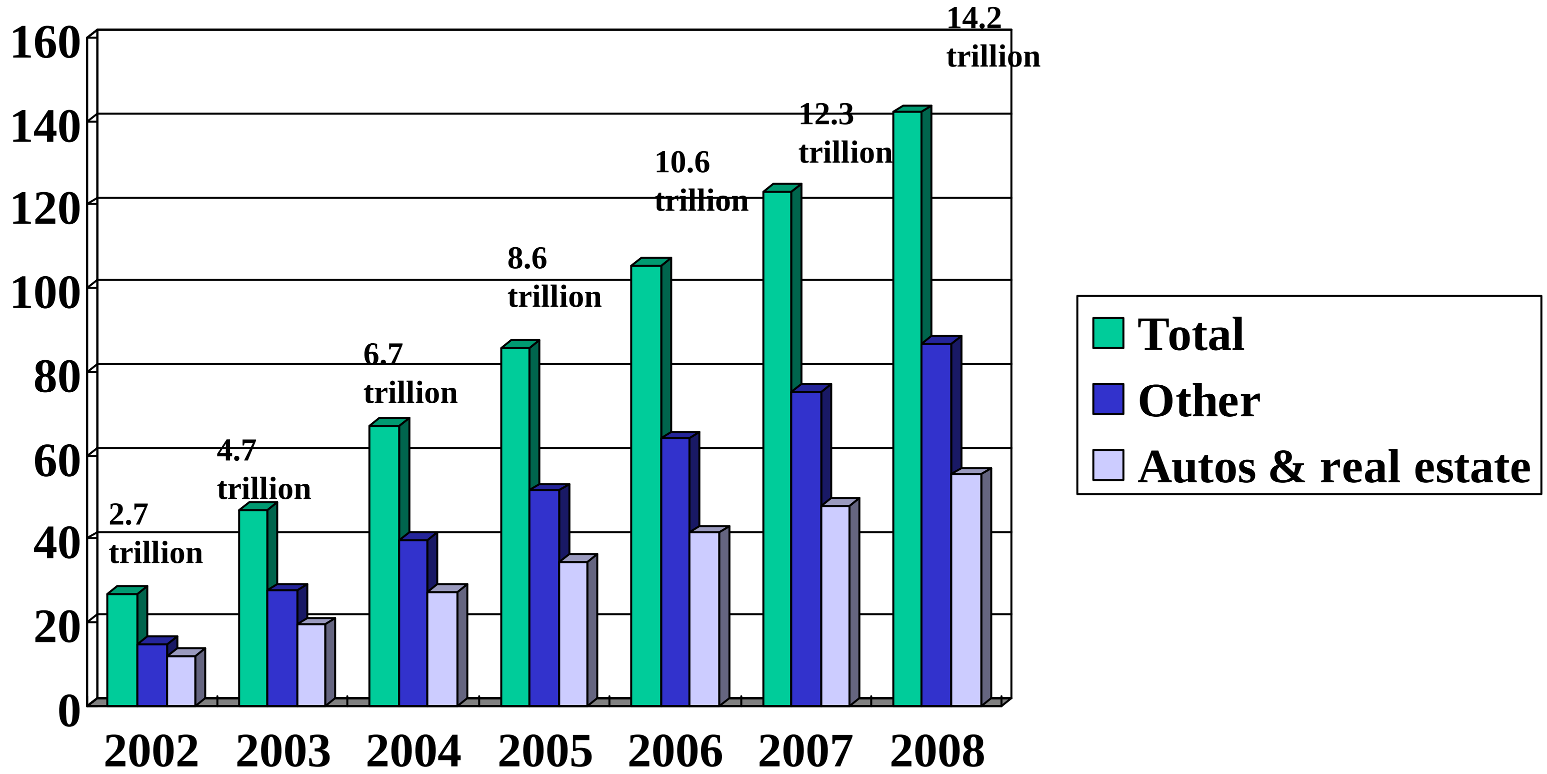
Unit: square meters

iDC-type, carrier-type, and data processing-type companies currently in battle for survival: 1-2 companies in each genre will be the winners!

Based on NRI forecast data

Trends in B2C e-Commerce Market Size【Japan】

Unit: ¥100 billion



Source: Ministry of Economy, Trade and Industry; ECOM

Breakdown of B2C e-Commerce Market【Japan】

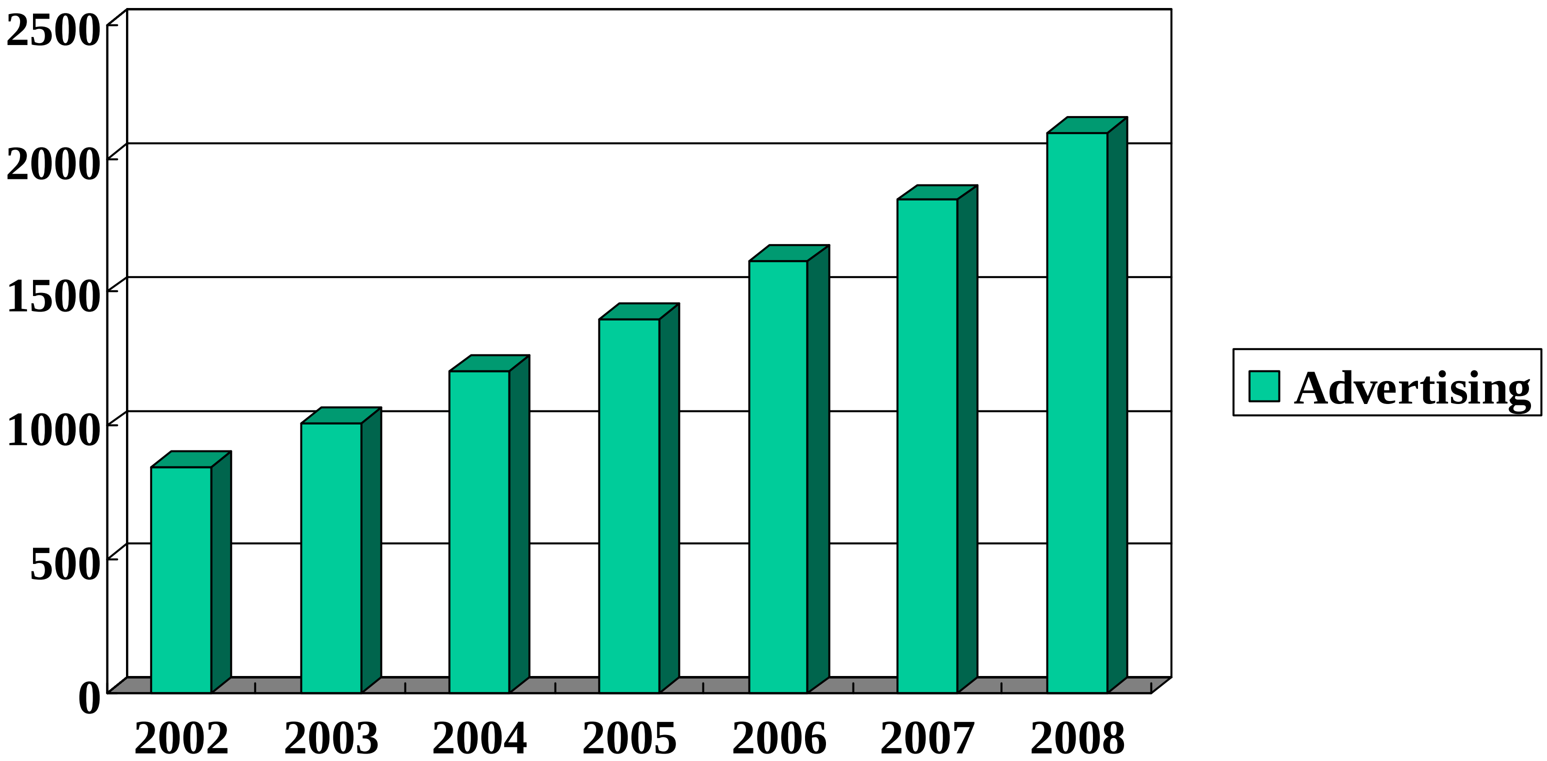
Unit: ¥100M

Category	B2C Market Size	Mobile Commerce Segment
PC-related	1970	50
Travel	2650	400
Entertainment	1920	1300
Books/Music	620	150
Clothing/Accessories	1330	100
Food/Drink	1300	140
Hobbies/Furniture	1090	210
Autos	5770	150
Real estate	6100	160
Other goods	1390	150
Finance	1160	100
Services	1550	300
Total	26850	3120

Sources: Ministry of Economy, Trade and Industry; ECOM

Internet Advertising Market【Japan】

Unit: ¥100M



Source: Dentsu

Net Auction Item Share【Japan】

Source: NRI

Name of Service	Share
Yahoo!	81.5 %
⇒Total dealings in 2003: more than ¥500 billion	
BIDDERS	15.0
WANTED	2.2
Guruguru	0.7
Other	0.5

E-Commerce Market Outlook【Japan】

Search engine-type portals: Yahoo! holds the dominant position on a worldwide level

⇒Portals lead the advertising market: to become a ¥200 billion market

E-commerce: logistics-type Amazon.com to become profitable
Steady growth of Rakuten “virtual mall”
Possible entry of existing distribution companies

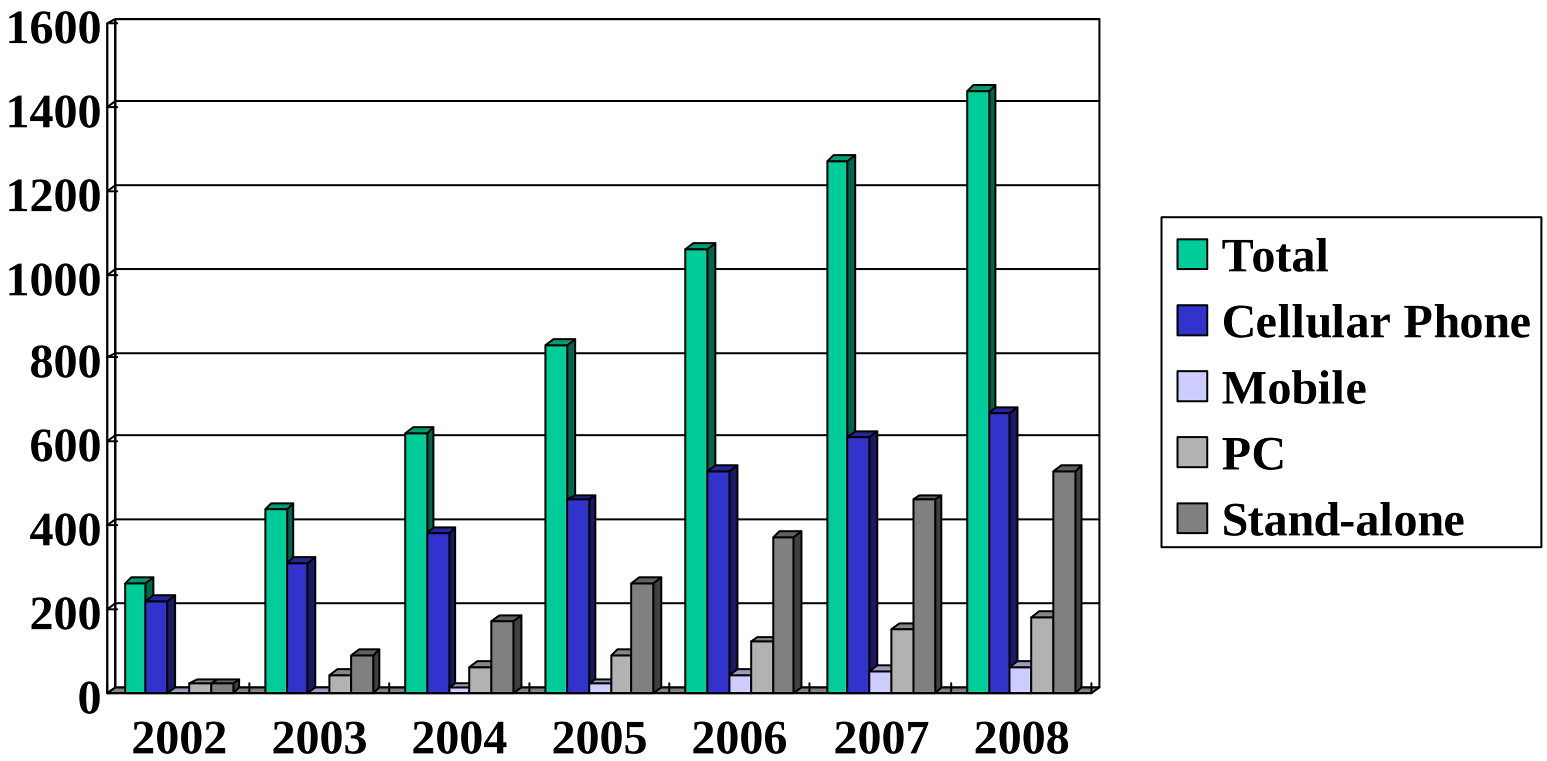
⇒to become a ¥3 trillion market

Net auction: US’s e-bay and Japan’s Yahoo! Japan are dominant

⇒Total dealings: to become a ¥1 trillion market

Online Game Market Size Forecast【Japan】

Unit: ¥100M



Source: NRI

e-Book Market Size Forecast【Japan】

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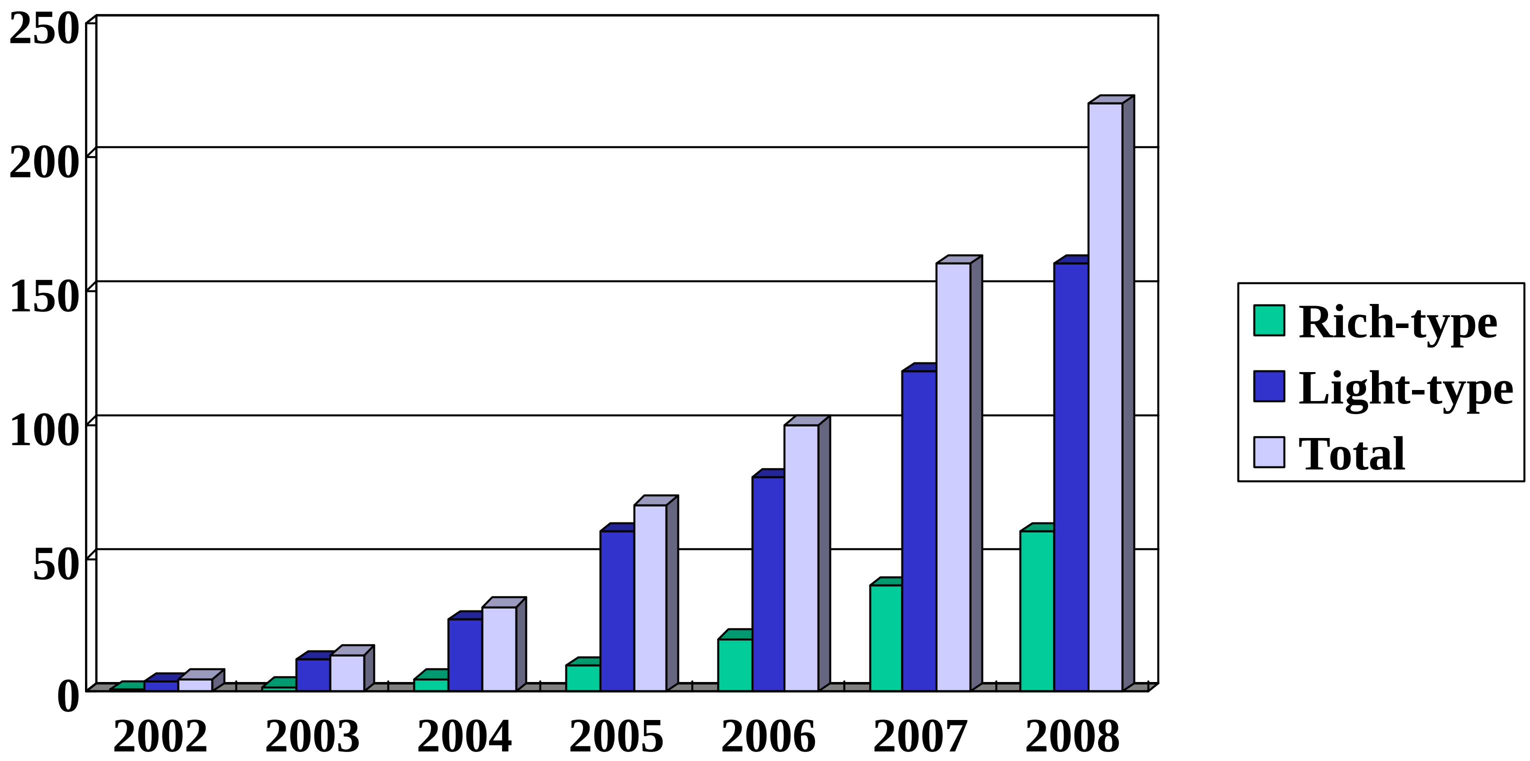
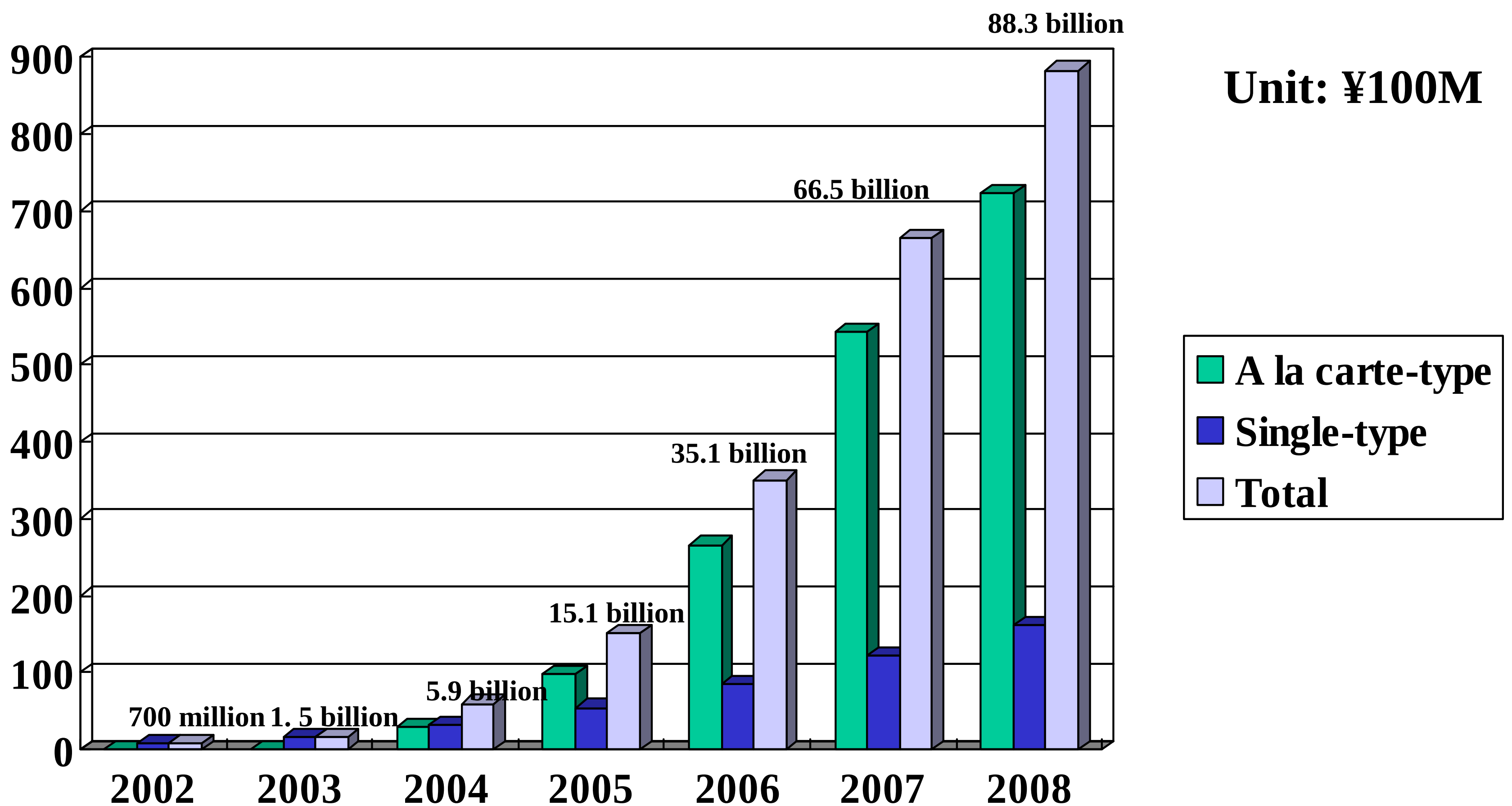
Unit: ¥100M



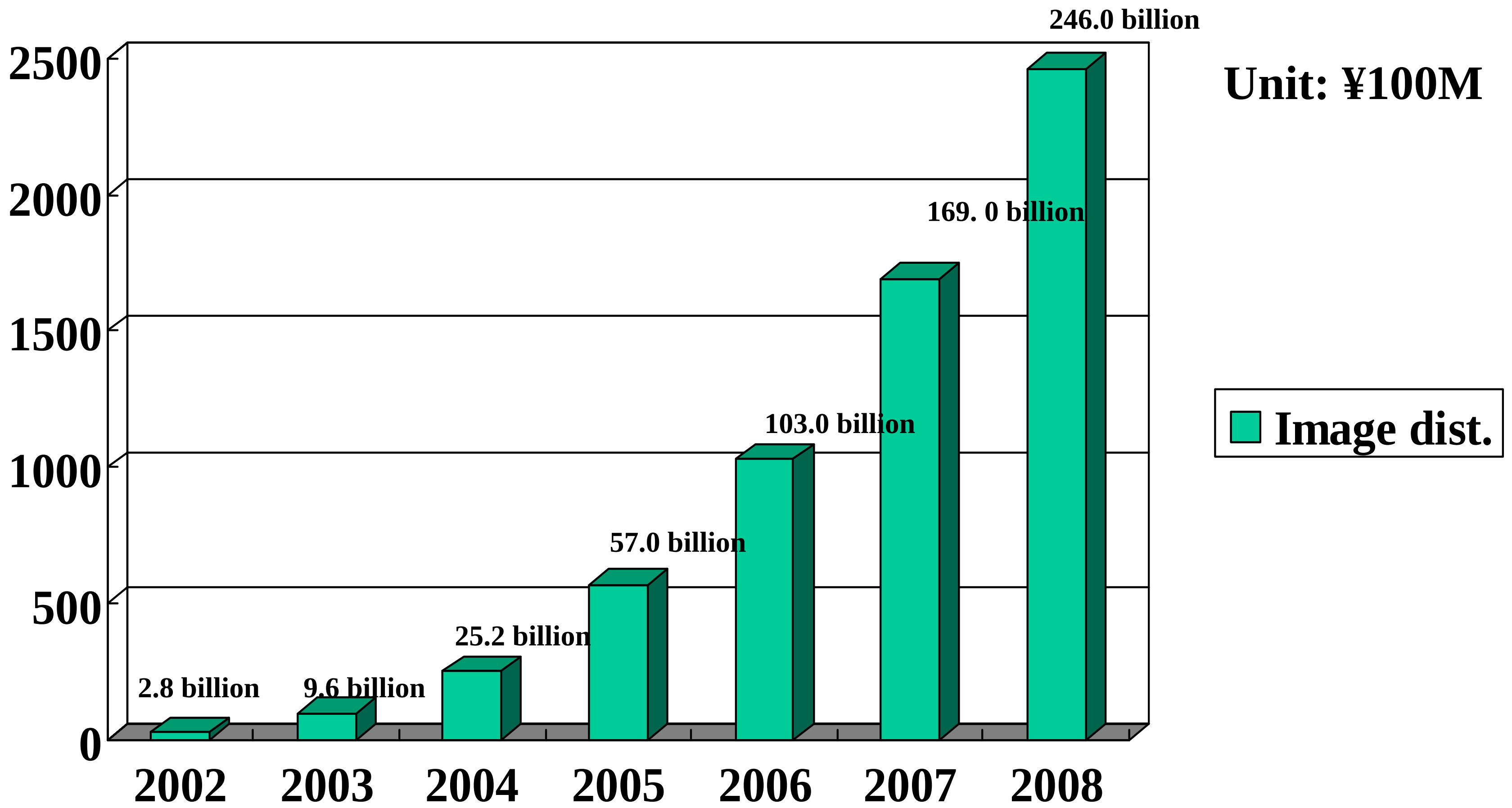
Source: NRI

Music Distribution Market Size Forecast【Japan】



Source: NRI

Video Distribution Market Size Forecast【Japan】



Source: NRI

e-Learning Market Size Forecast【Japan】

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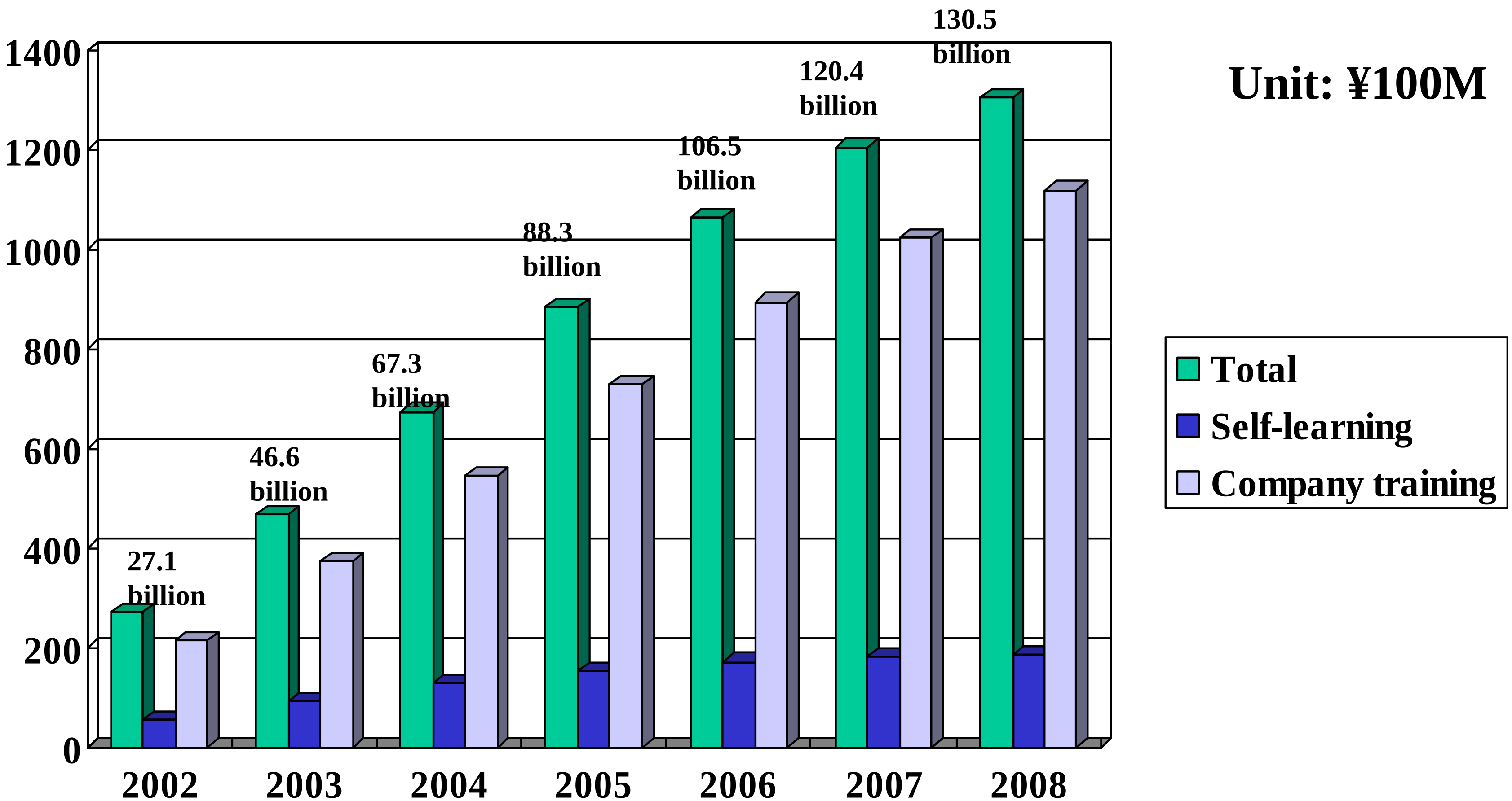
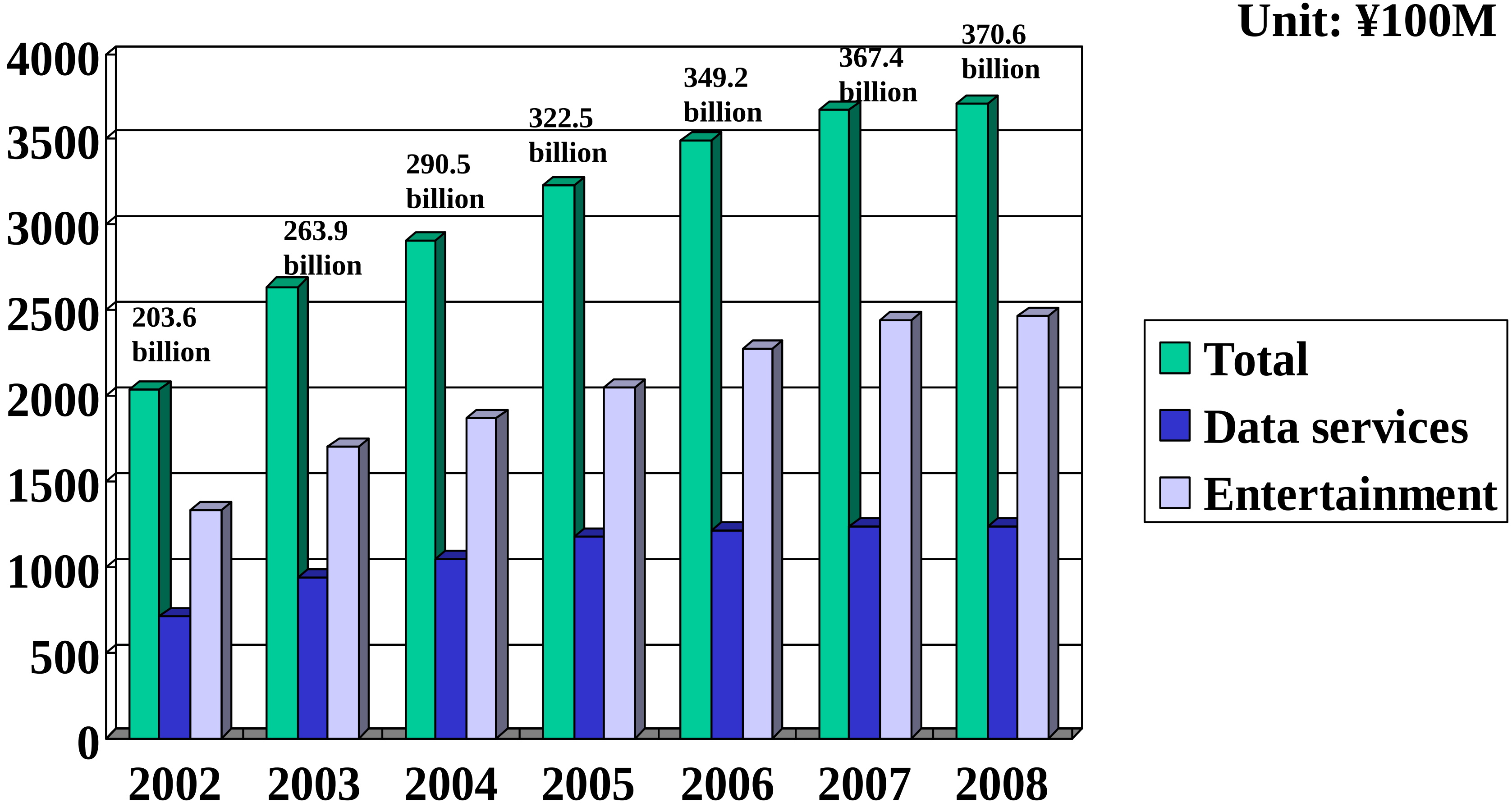


Source: NRI

Mobile Pay-to-View Content Market Size Forecast【Japan】

IRI Ubilabs Innovations

Unit: ¥100M



Source: NRI

Web Content Market Outlook【Japan】

- **Online games: to become a ¥140 billion market**
  ⇒Existing game software vendors, or S. Korean vendors?

- **E-books: to become a ¥22 billion market**
  ⇒ "eBOOK" (Matsushita, Toshiba) vs. Sony

- **Music distribution: to become a ¥88 billion market**
  ⇒JASRAC, Recording Industry Association of Japan hold the key to growth

- **Image distribution: to become a ¥250 billion market**
  ⇒Movie distributors, video rental companies, and newcomers on even terms

- **E-learning: to become a ¥110 billion market**
  ⇒Somewhat flooded with competitors; but companies with strong corporate services may come out on top

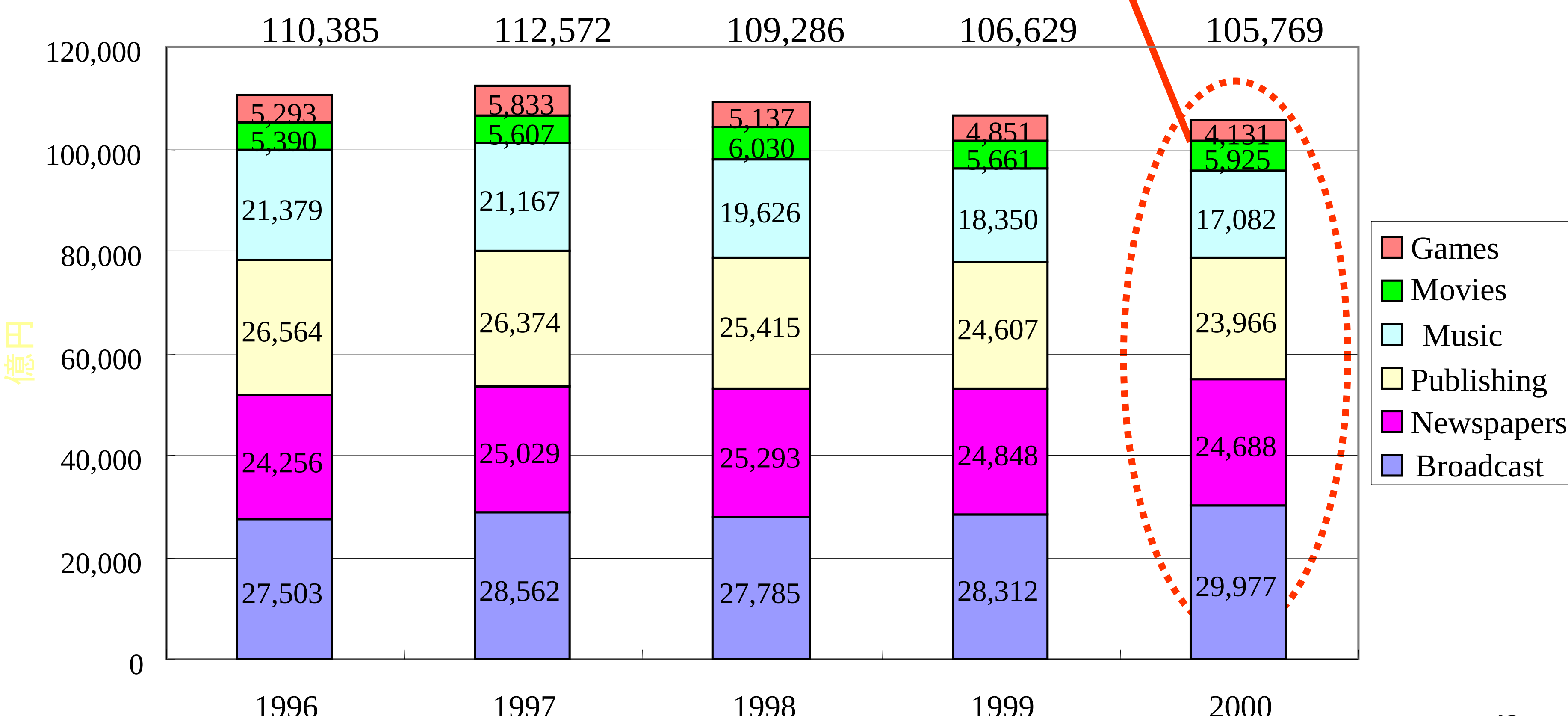
- **Mobile web content: to become a ¥370 billion market**
  ⇒Key: moving from mobile-only world to tie-ups with Internet

Market Outlook : Shift of Content to Networks

- **The major content industries together comprise a ¥10 trillion market. The domestic market has matured, resulting in a leveling off of market size.**
- **With respect to the individual markets, the broadcast market has grown, but the game, music and publishing markets have shrunk.**

This market will shift to a ubiquitous network environment

Change in Domestic Content Market Size



Source: "Current Status and Issues of the Content Industry," August 2002, METI