

Mobile, broadband, ubiquitous NW and information renaissance

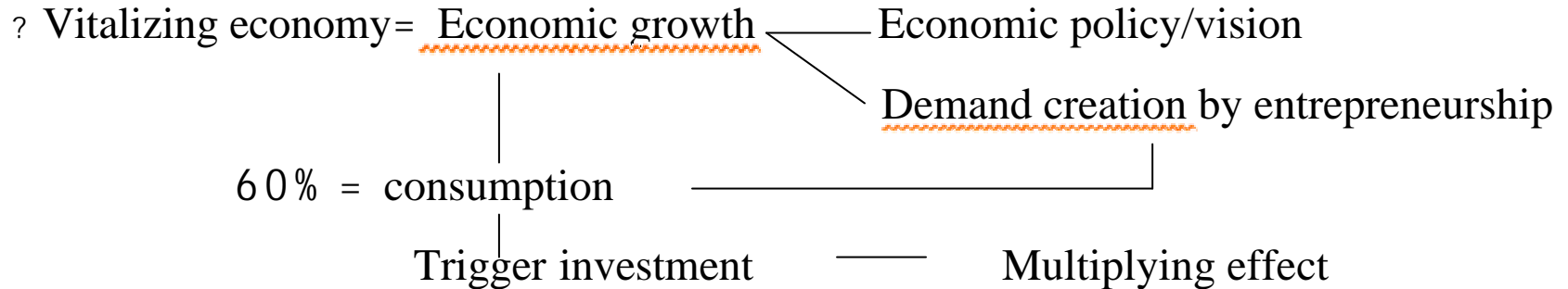
October, 2002

Kouji Ohboshi

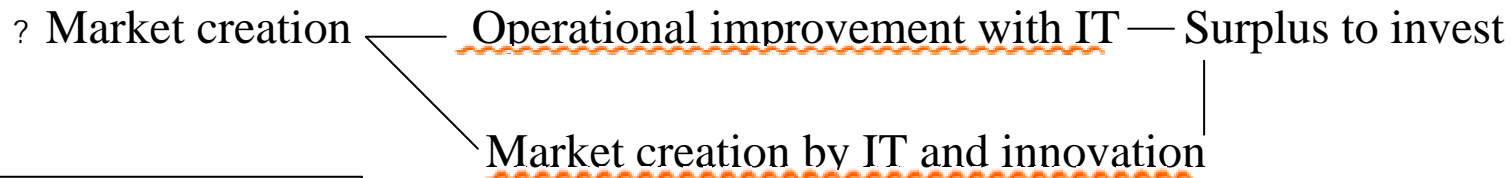
NTT DoCoMo

Challenge: Use IT to vitalize economy and create new markets

? Pressing issue in our economy= Prevent deflation spiral and vitalize economy



? Vitalizing consumption= Demand creation= Matter of entrepreneurship= Market creation with aggressive entrepreneurship



GDP average growth in key countries ('97-'00)

JPN 0.7% U.S.A. 4.2%

U.K 2.9% France 2.9%

Germany 2.0%

Canada 4.4%

? \1,400 Trillion private asset/Consumption is less than 70%

< Higher than 90% in the U.S.

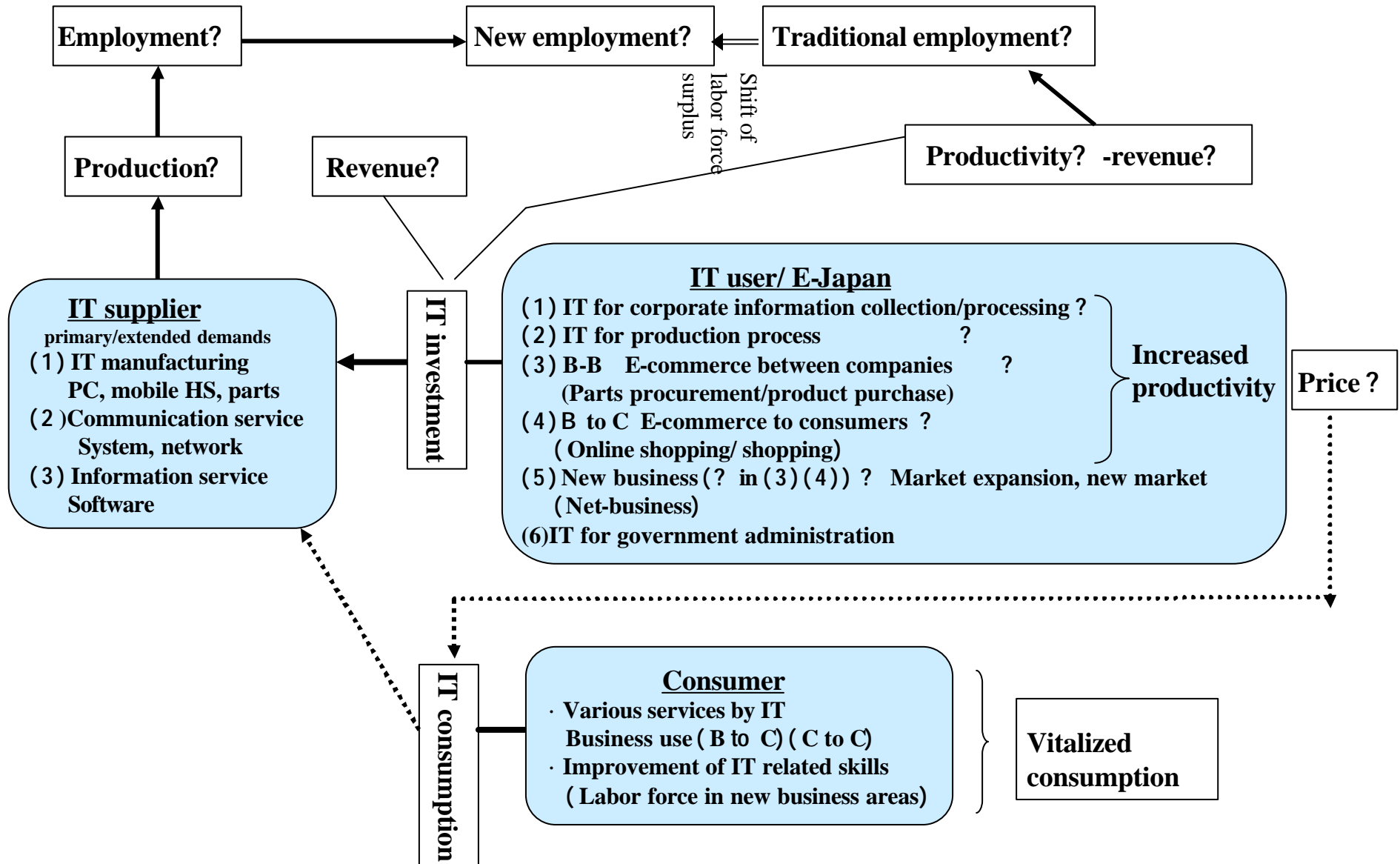
? 30 million I-mode users: gigantic market only in 3 years

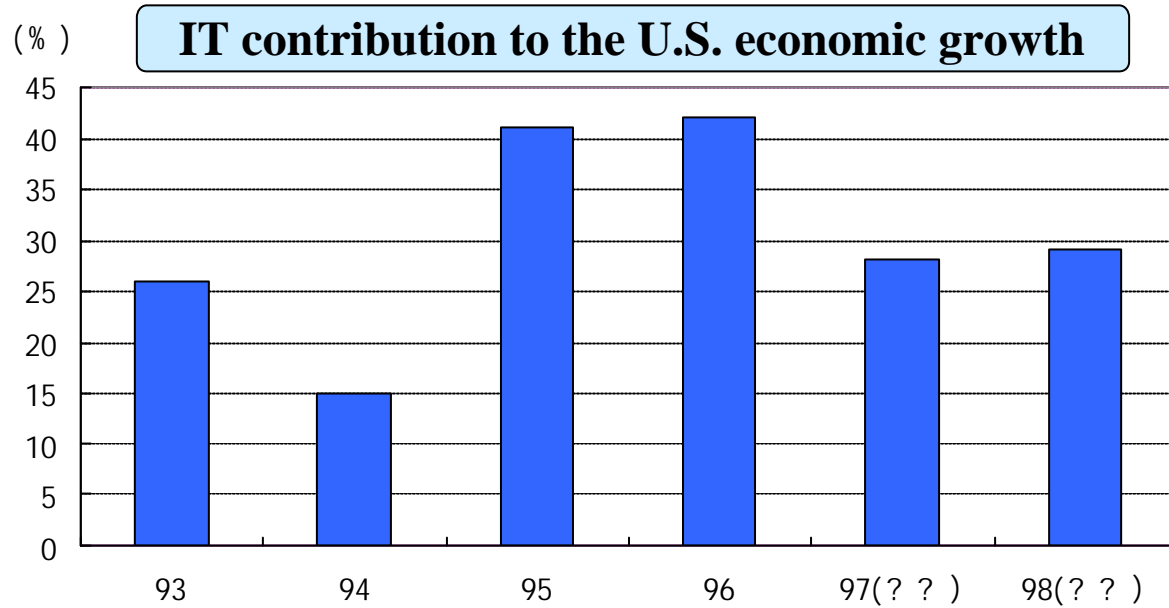
? 9-10 % annual increase of travelers

? Luis Vuitton sold \100 billion in 2001 (20% increase)

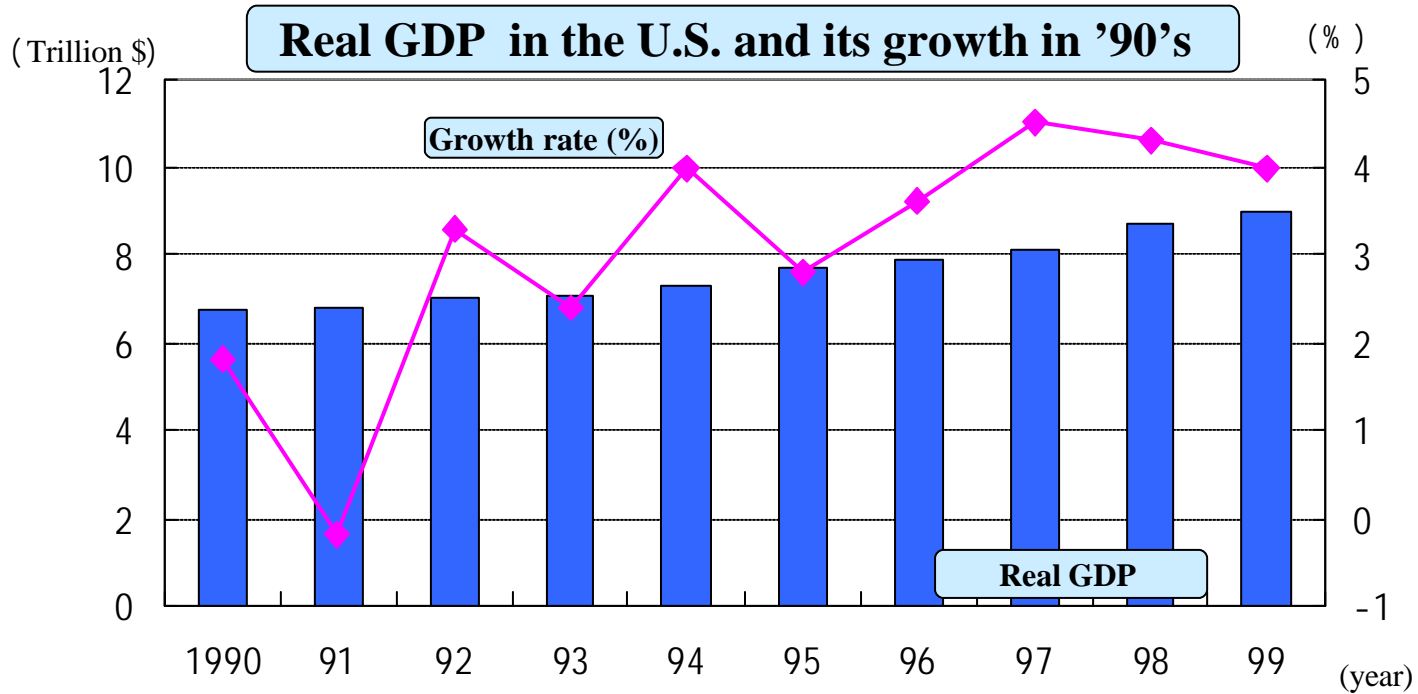
Expected effects of IT introduction

Change in employment





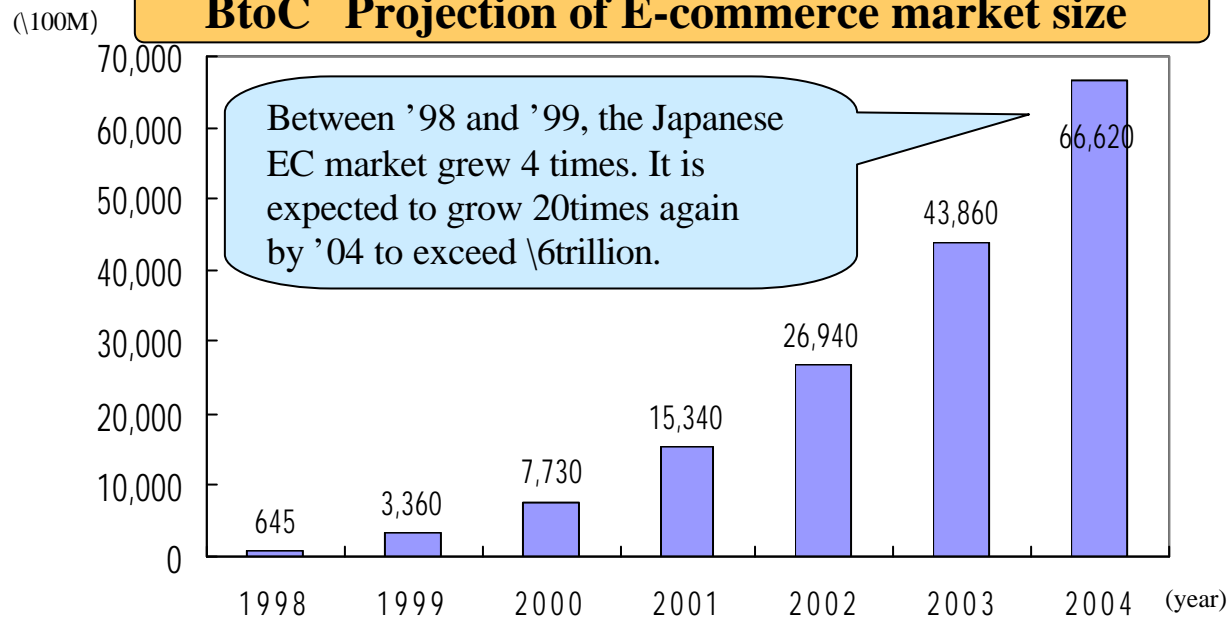
Source "The Emerging Digital Economy ? "



(Note) 1996 is basis for real GDP

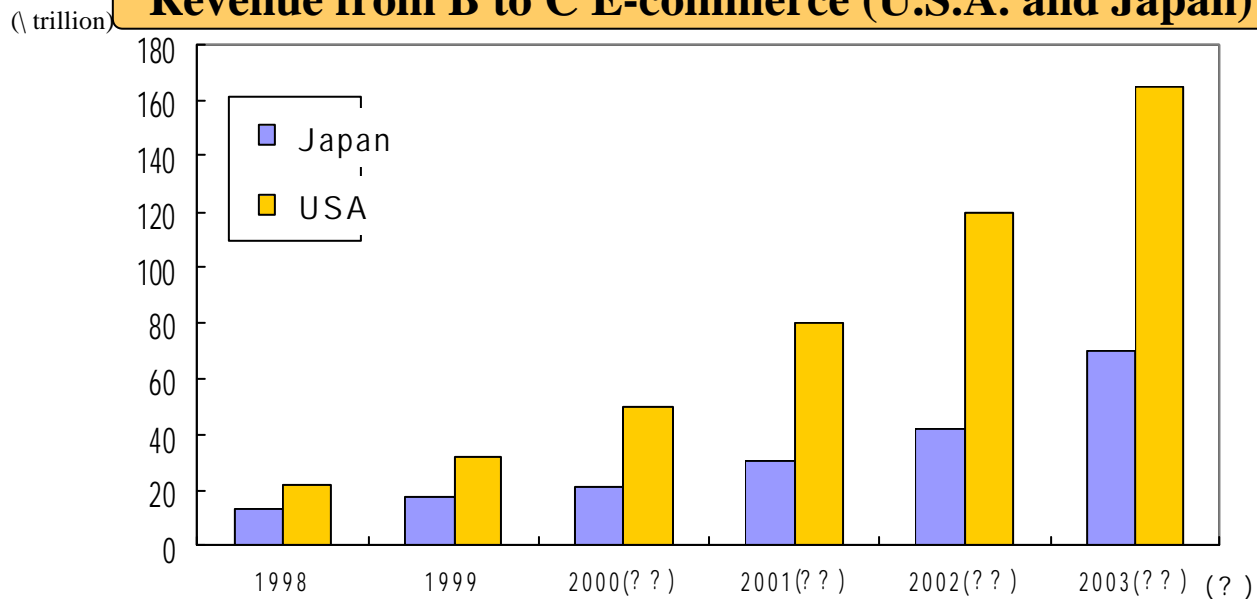
Source: Bureau of Economic Analysis

BtoC Projection of E-commerce market size



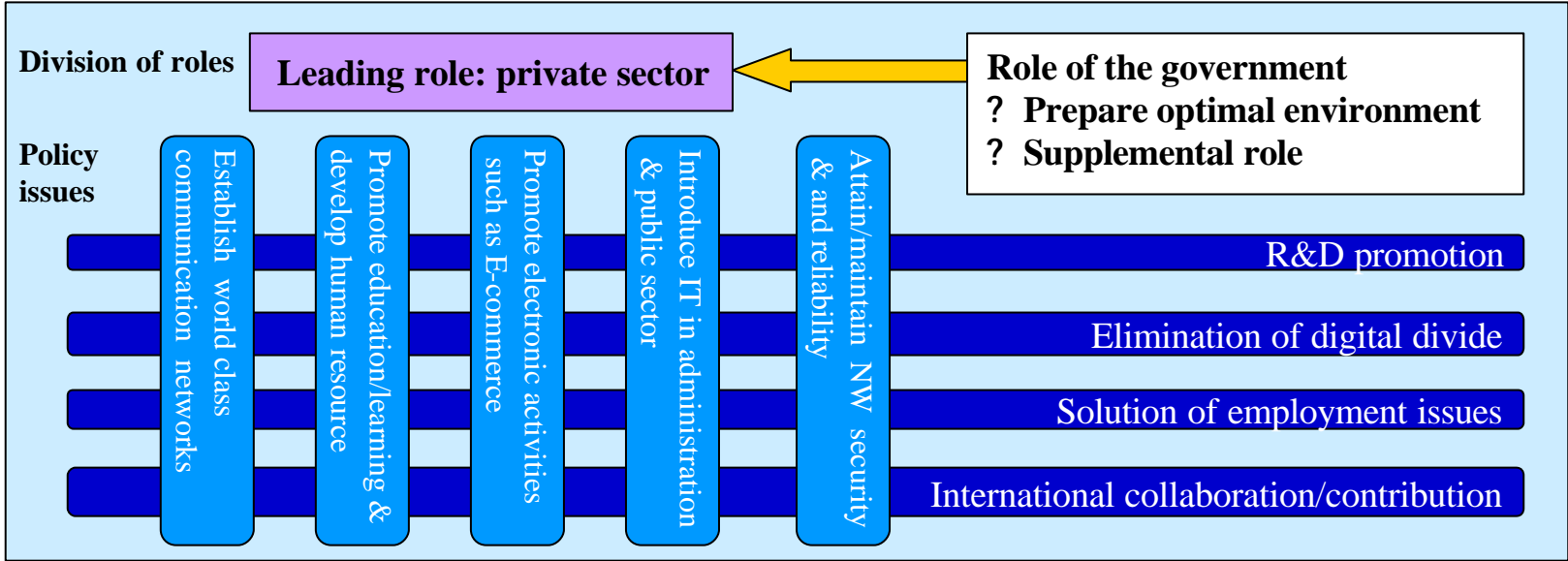
Source: Electronic Commerce Promotion Council in Japan (ECOM)/Andersen Consulting "B-C market in Japan", Jan.2001

Revenue from B to C E-commerce (U.S.A. and Japan)

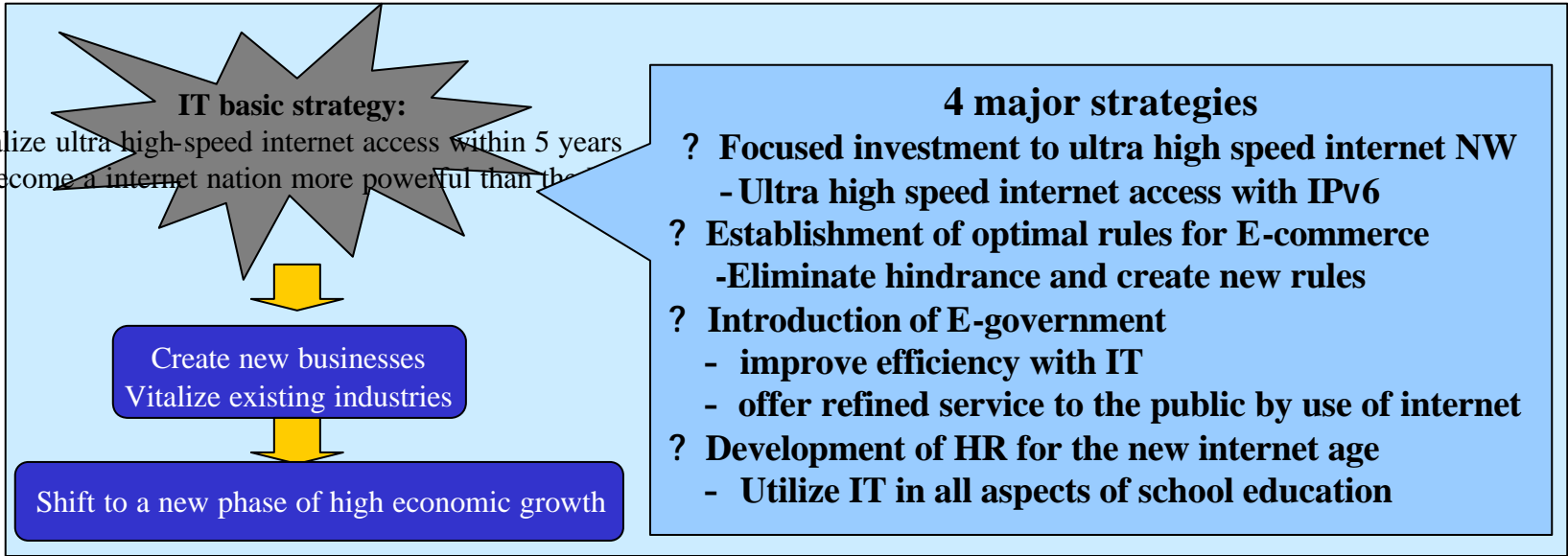


Source MIT/Andersen Consulting

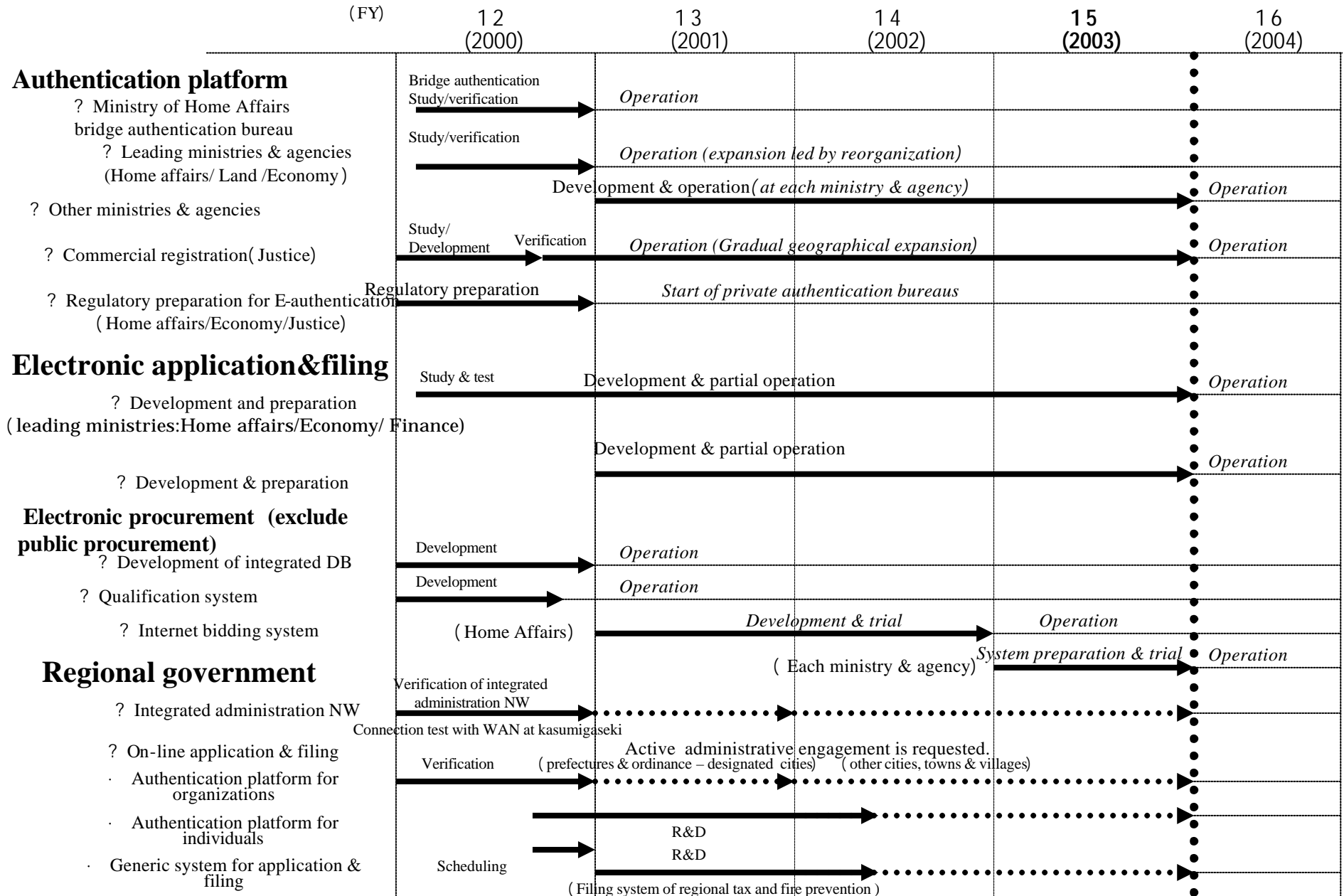
Basic policies of the E-Japan strategy



4 strategic approaches to make Japan a world class IT country



IT policy implementation schedule for E-government (reference)

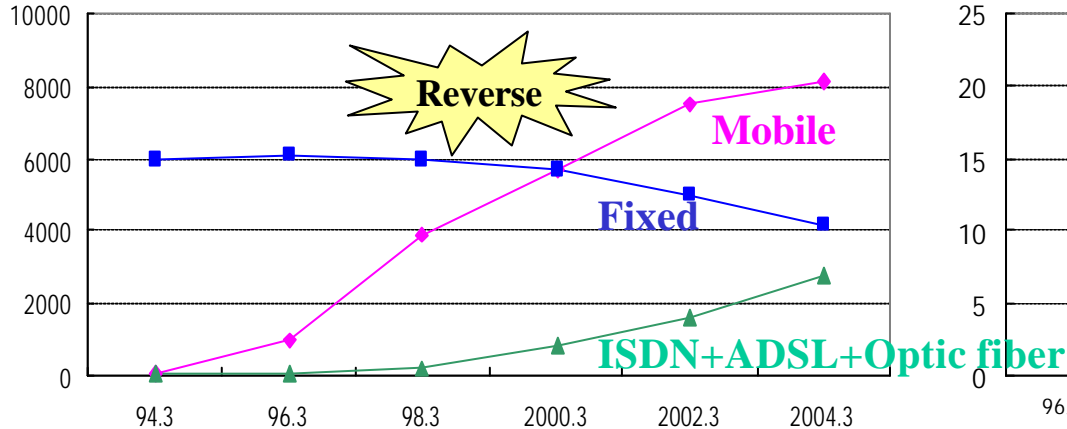


Source: Multimedia Promotion Forum (Feb.13, 2001) "Ministry of Home Affairs in the 21st century" by Kenji Kosaka

IT innovation· 3 reversions in the year 2000

Mobile subscribers exceeded fixed linesubscribers in number

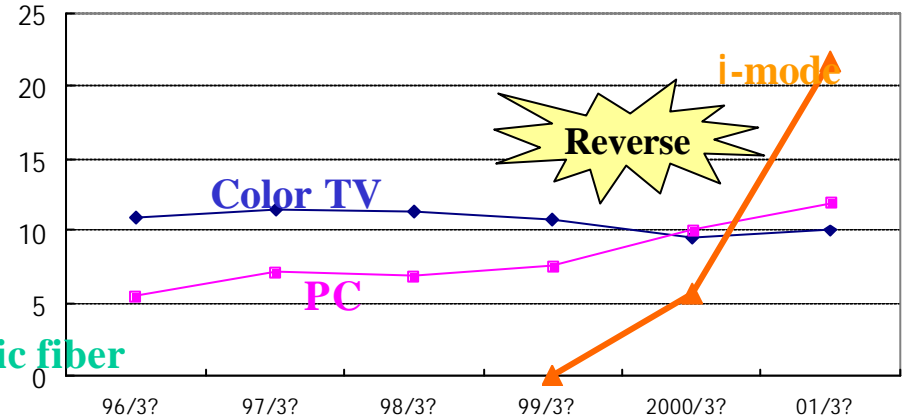
Unit: 10,000



Source: Japan Electronics & information Technology Industry Association (JEITA), Electronic Industries Association of Japan (EIAJ)

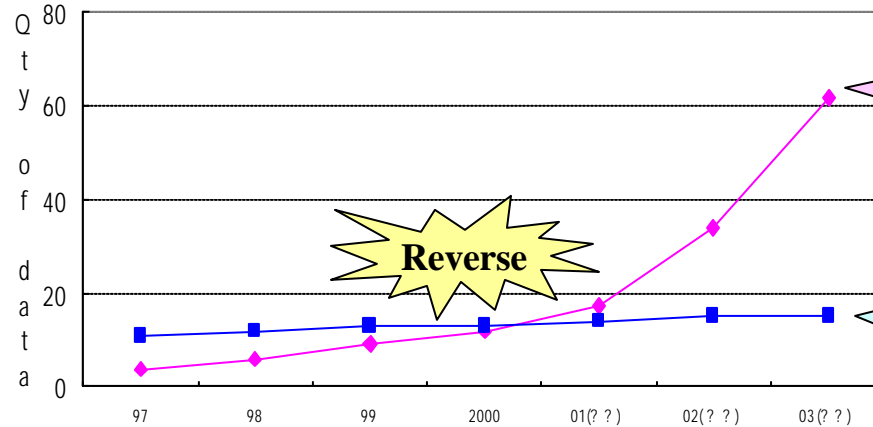
i-mode exceeded PC & TV in shipment

Unit: Million



Data traffic exceeded voice traffic

Unit: 10,000 TB



Data traffic will continue to increase explosively

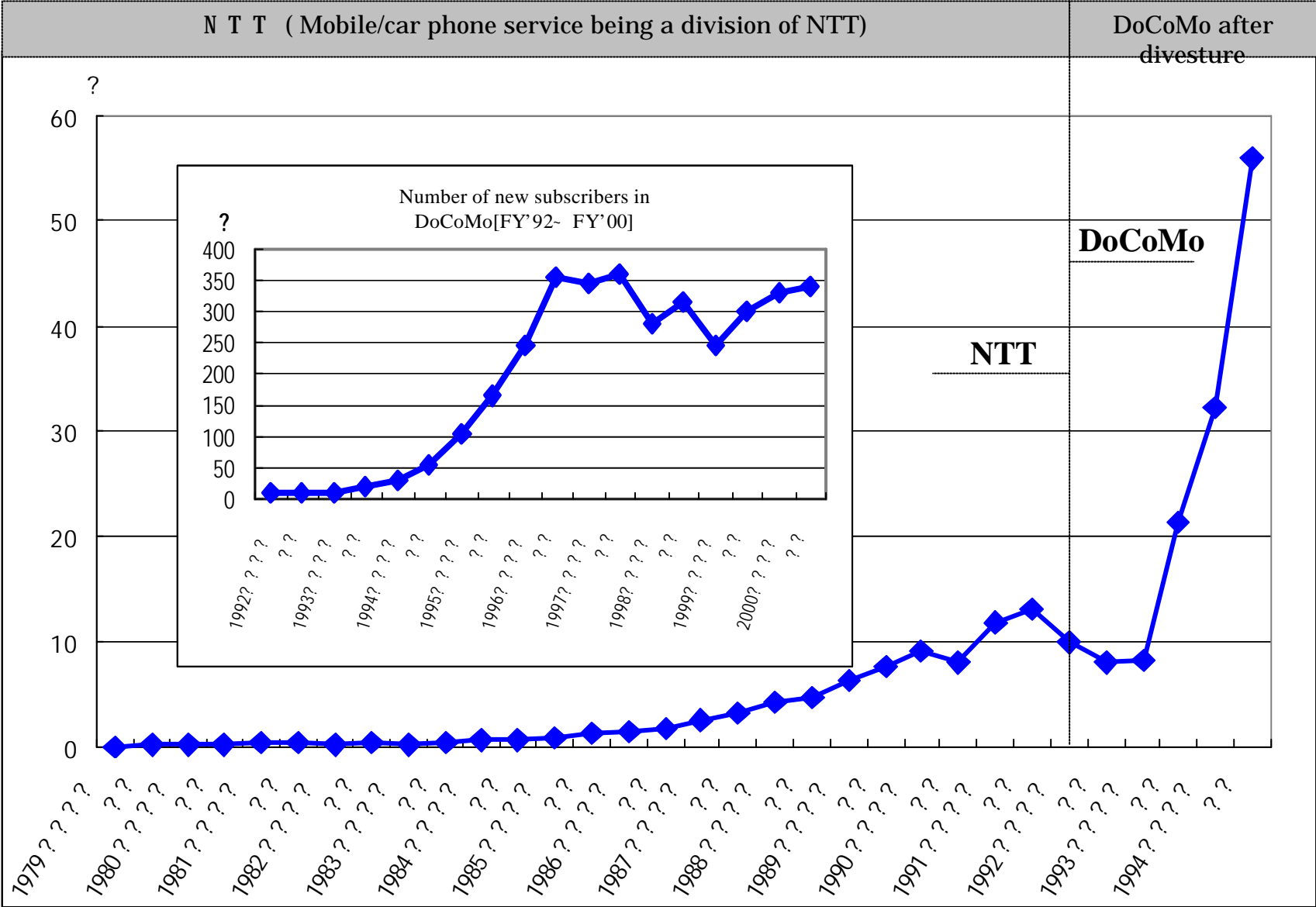
Fixed-line voice traffic will decrease, and mobile voice traffic will continue to increase

Source: Merrill Lynch securities

Number of mobile/car phone subscribers of NTT – NTT DoCoMo

[FY79 - FY94]

DoCoMo/NTT ? 50 times(Annual increase) 100 times(I-mode)



Increase of mobility

? Homo · Movens

[A] Increase of Japanese travelers

Homo Rudens

		FY 2000	%increase from the previous year
Transport of airline passengers (unit:passenger-kilometres performed)	Domestic	79.69 billion	0.4%
	International	97.87billion	9.8%

Source: Ministry of Land & Transport: actual of FY2000

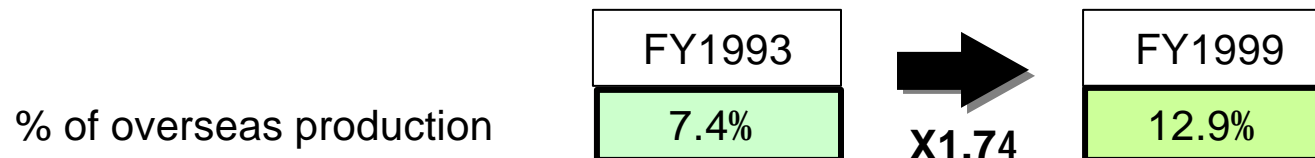
[B] Increase of Japanese international travelers

FY	1993	1994	1995	1996	1997	1998	1999	2000
Passengers (1,000)	1,193 (100)	1,358 (114)	1,530 (128)	1,670 (140)	1,680 (141)	1,581 (133)	1,636 (137)	1,782 (149)

*Values in () indicate increase since 1993

Source:Ministry of Justice: immigration statistics

[C] Increase of overseas production



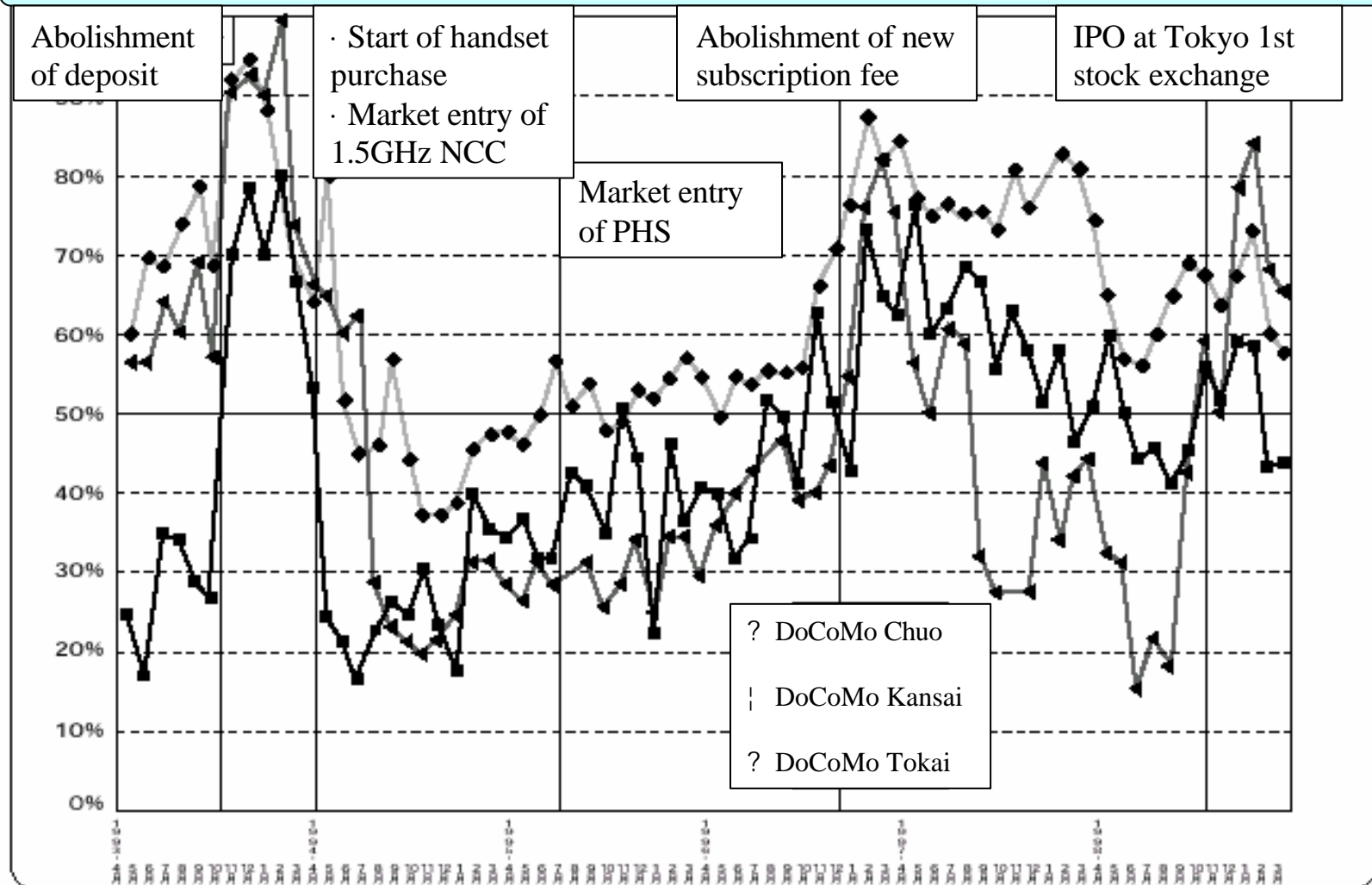
(% of overseas production= Sales of overseas subsidiary/Domestic sales×100)

Source: Ministry of Economy, Trade & Industry:
Basic survey of overseas business activities in 2000 (May,2001)

Impact of competitive market – lesson from competition outsourcing-

? defeat – sense of crisis/tension – creation

Monthly share in pure increase of subscription (Chuo/Kansai/Tokai)

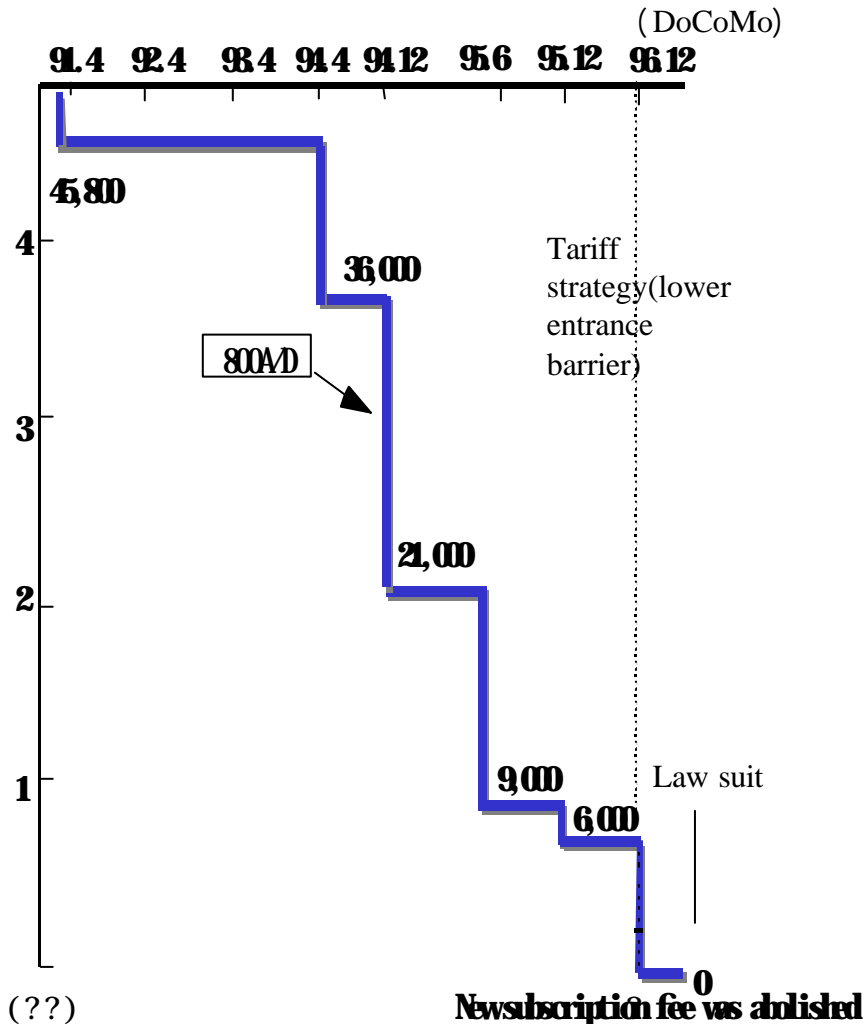


Source: DoCoMo Kyuseicho no Keiei (How to Manage Rapid Growth of DoCoMo) by Koji Oboshi (published by Diamond)

Speed of management

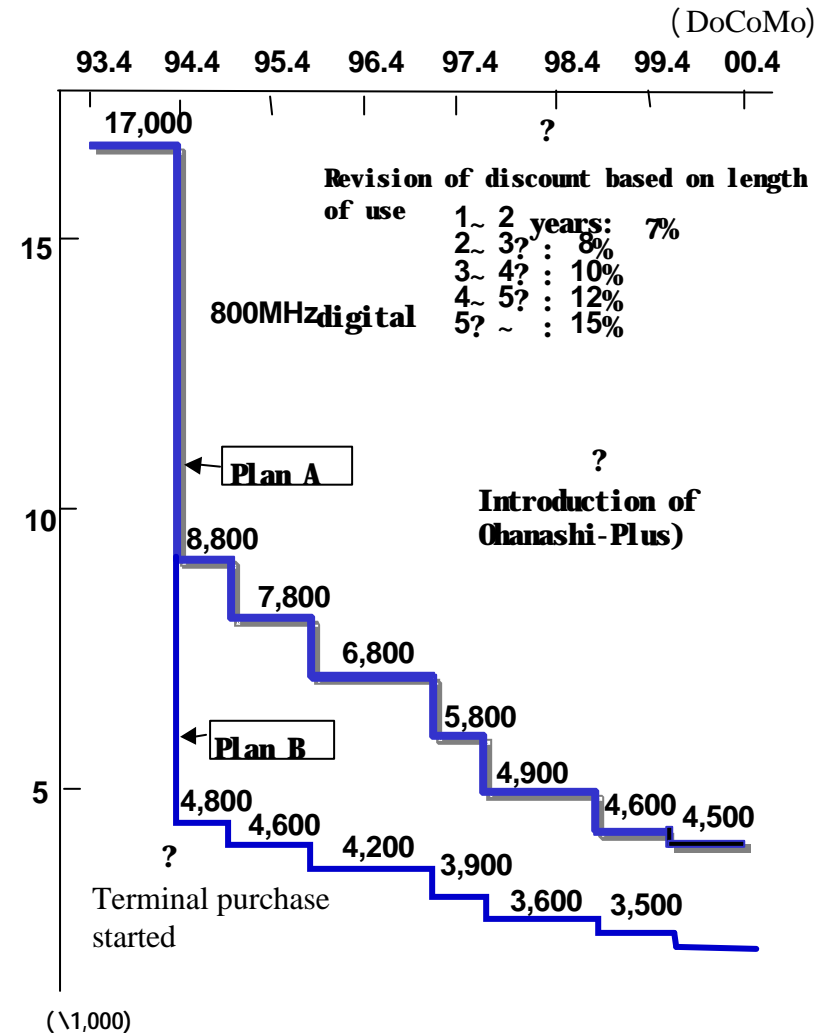
Reduction of initial cost

(fee for new Subscription)

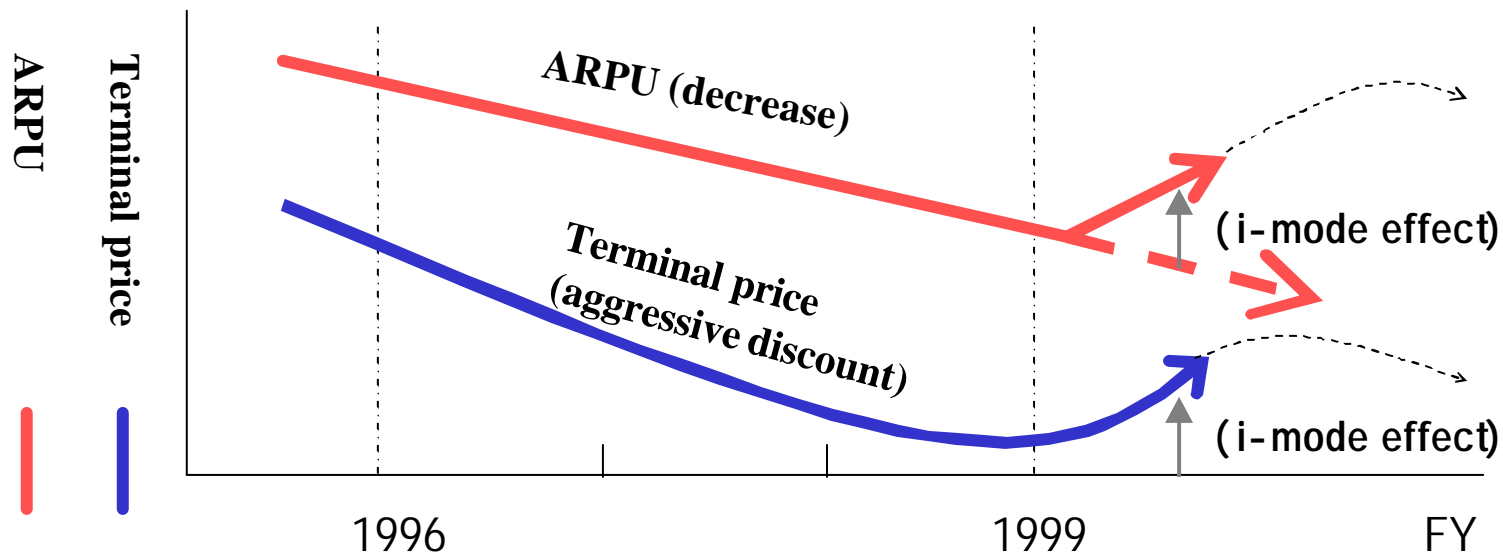
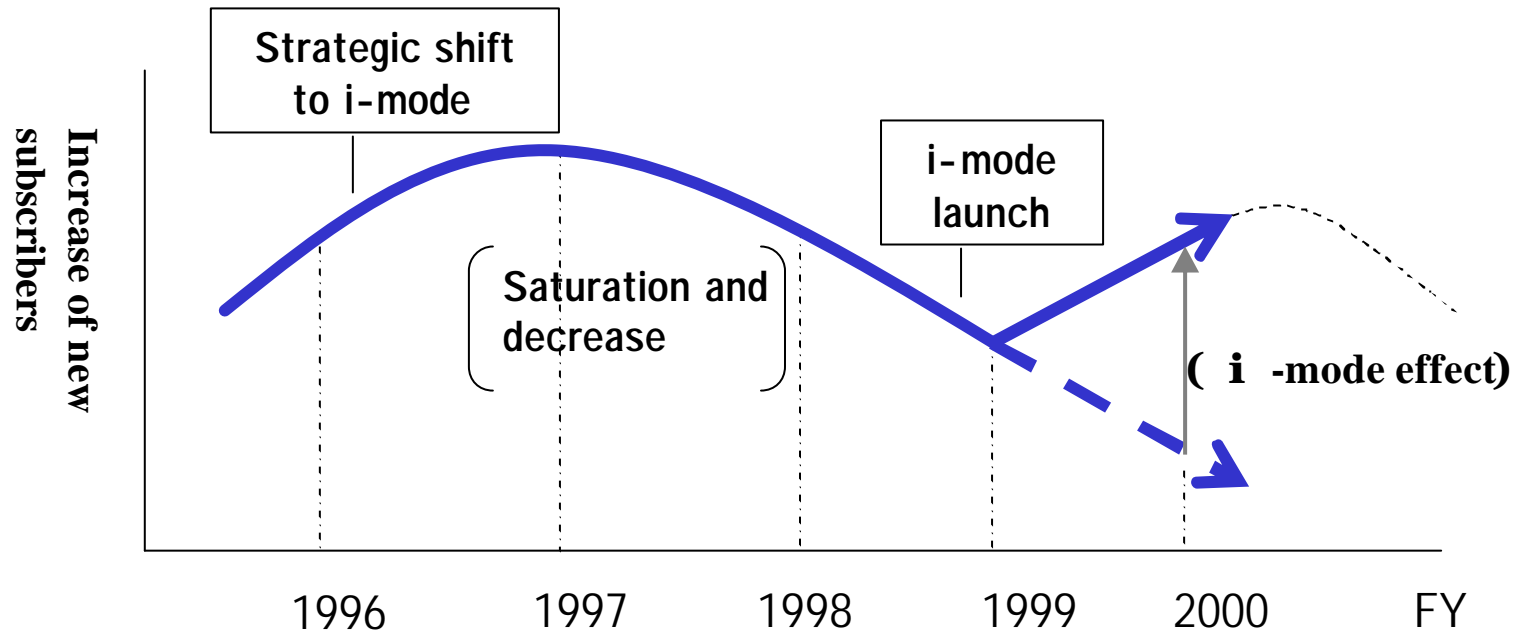


Reduction of running cost

(basic monthly fee)



Business crisis and development of “i- mode”

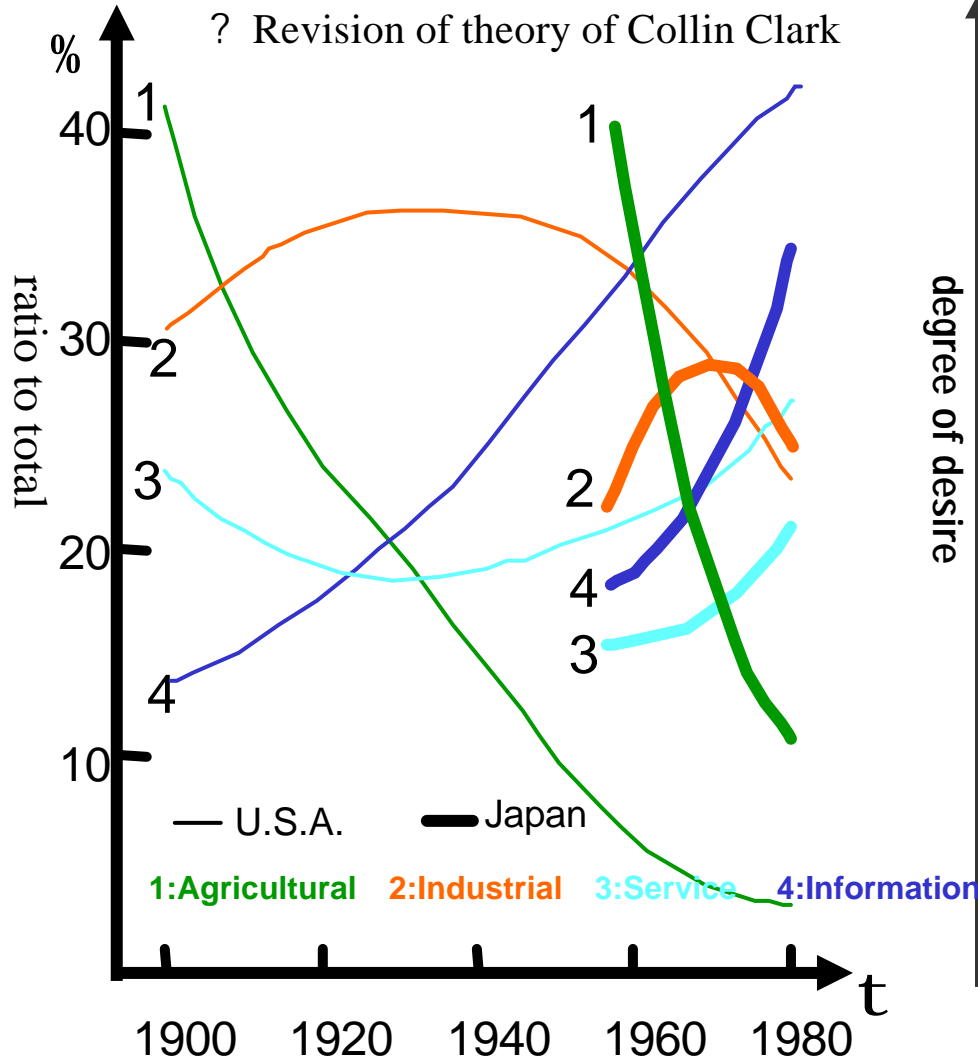


Accurate projection and logical thinking

Labor population by sector

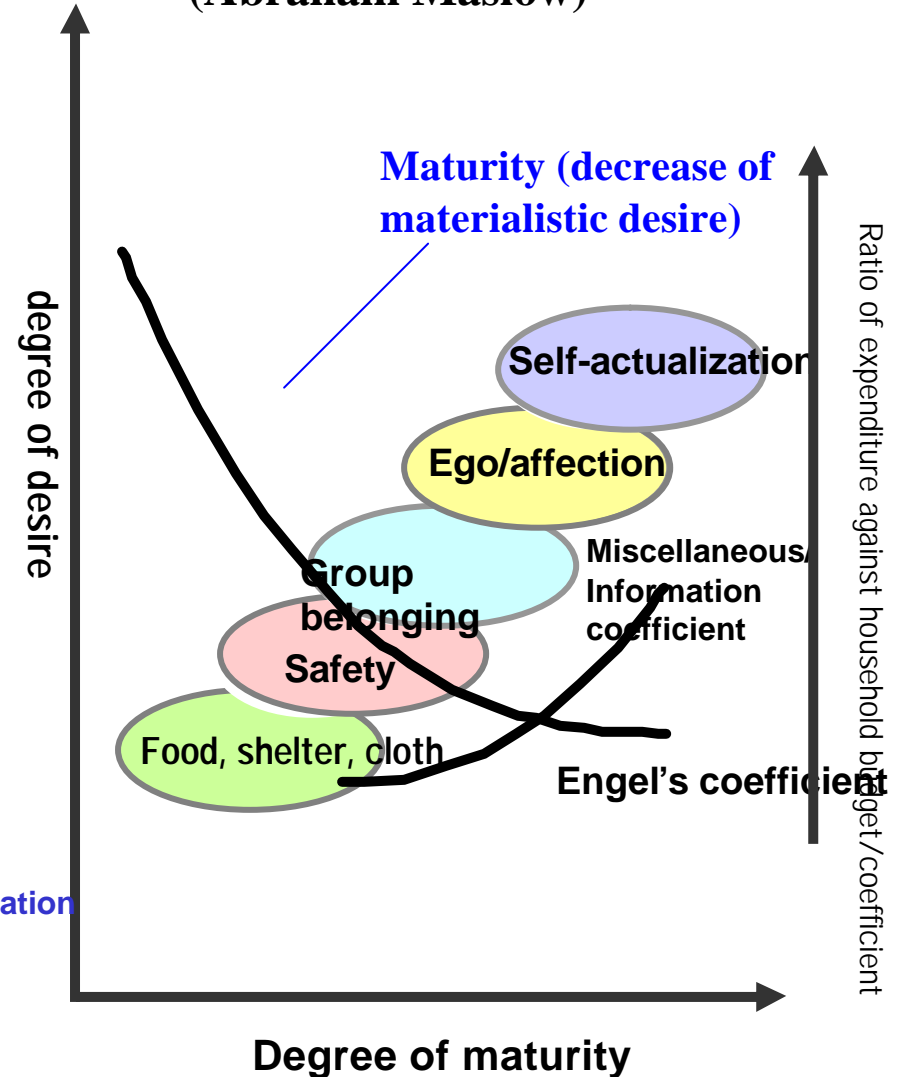
(M. Polateau)

? Revision of theory of Collin Clark

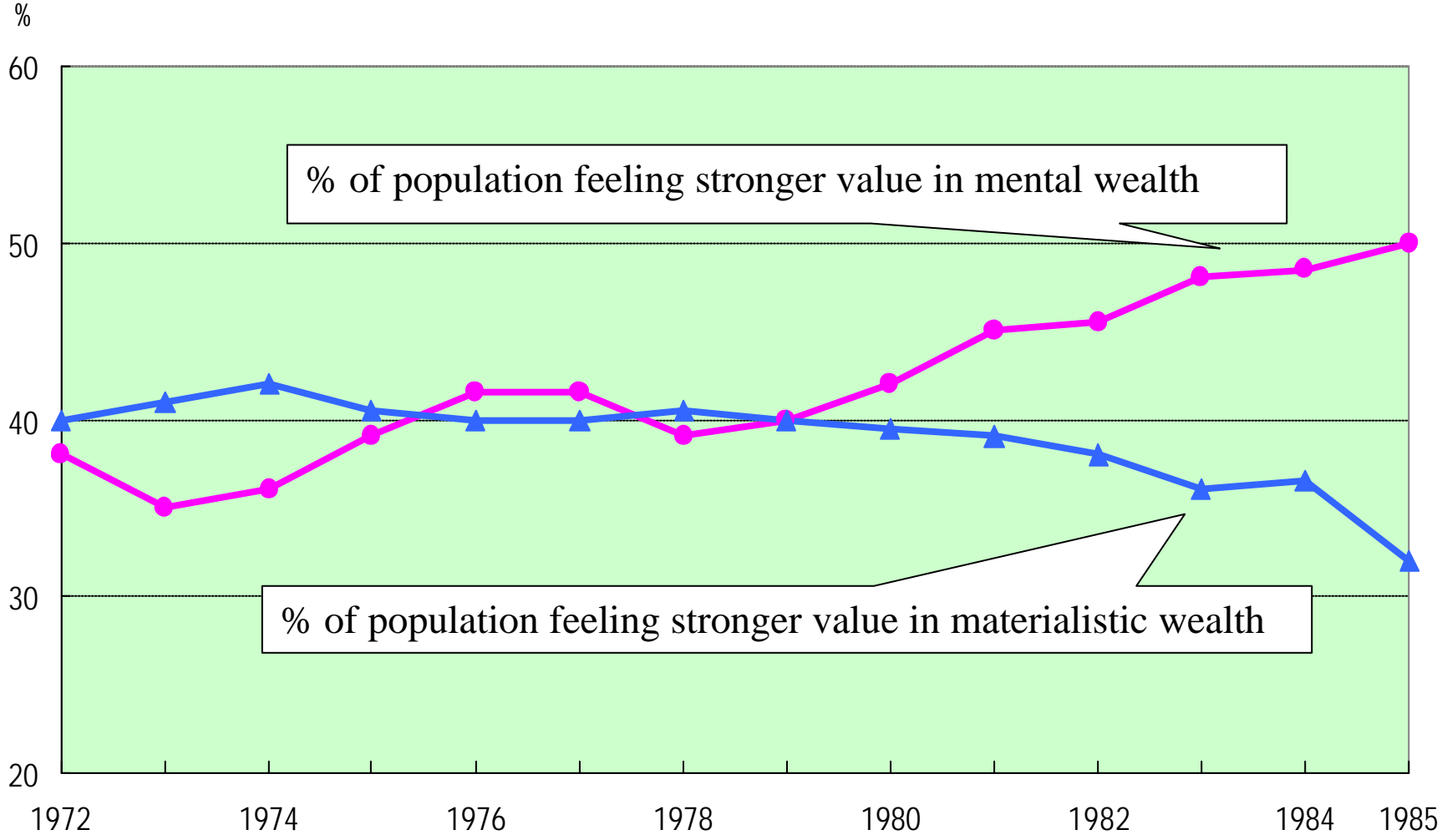


Sophistication of needs/desire

(Abraham Maslow)

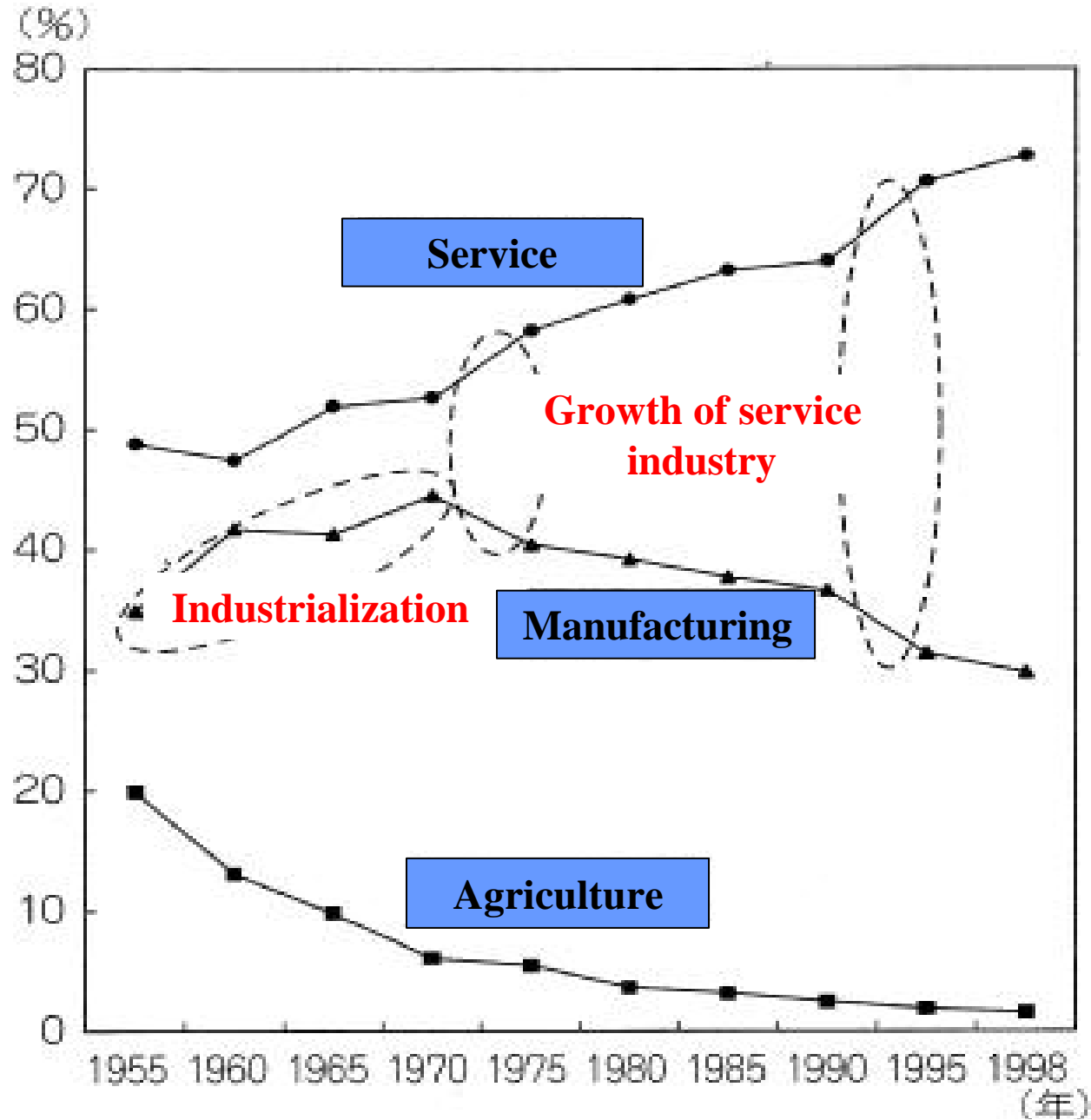


Mental wealth or materialistic wealth?



Source: "Monthly Public Opinion Poll" (Cabinet Office)

Change in industrial structure -labor population by industry-



Change of labor force by industry ('95~ '00)

Industries which added labor force since '95 (TOP10)

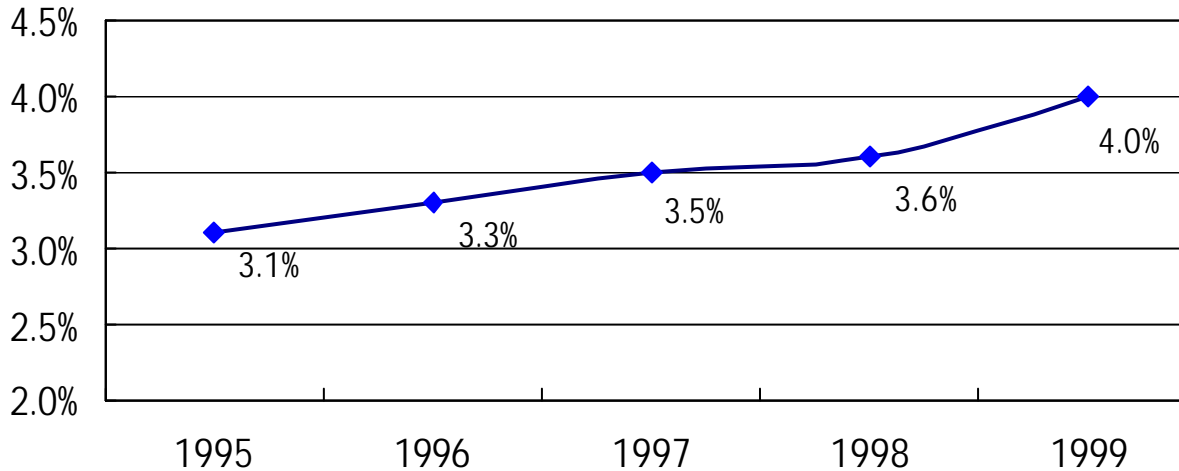
	% increase
Info.service, research, ad.	24.2%
Social insurance/welfare	24.2%
Other business services	20.4%
Movie/entertainment	20.4%
Lease	16.3%
Health/waste disposal	15.9%
Other specialist services	14.8%
Machine/furniture repair	12.3%
Medical service	11.4%
Hotel&inn	9.8%

Industries which reduced labor force since '95(TOP10)

	% decrease
Wood/timber manufacturing (excluding furniture)	32.3%
Tanned leather &fur manufacturing	29.0%
Steel	27.6%
Furniture/equipment manufacturing	22.8%
Rubber manufacturing	21.4%
Ceramic manufacturing	21.4%
Chemical	18.6%
Metal manufacturing	17.9%
Water transportation	17.8%
Forestry	17.6%

Use of IT at household

(1) ratio of information/communication expenditure in consumption



? 20 –29 years old: 8%

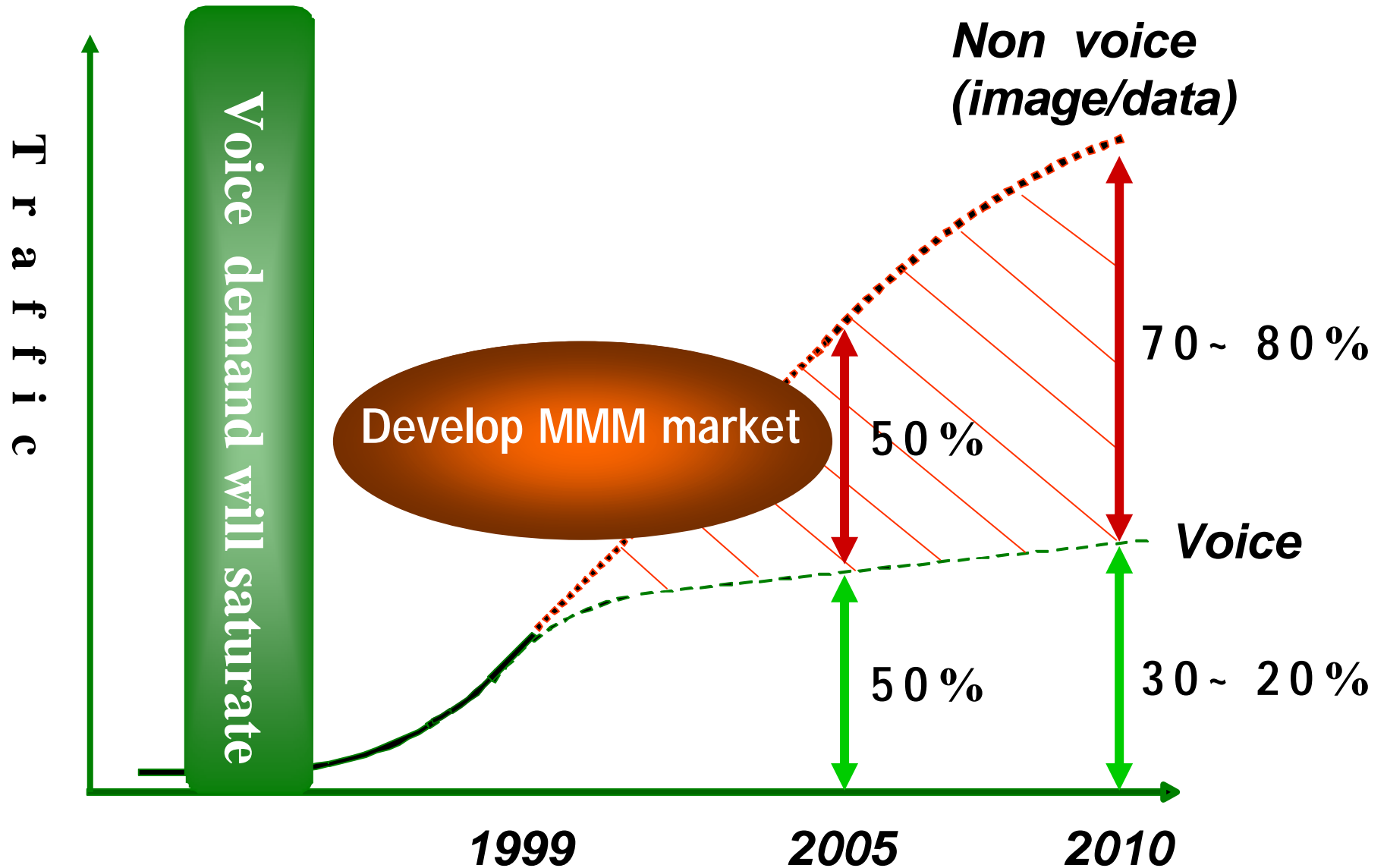
Source: MPT white paper of communication FY 2000

(2) Influence of Information & communication media in life style

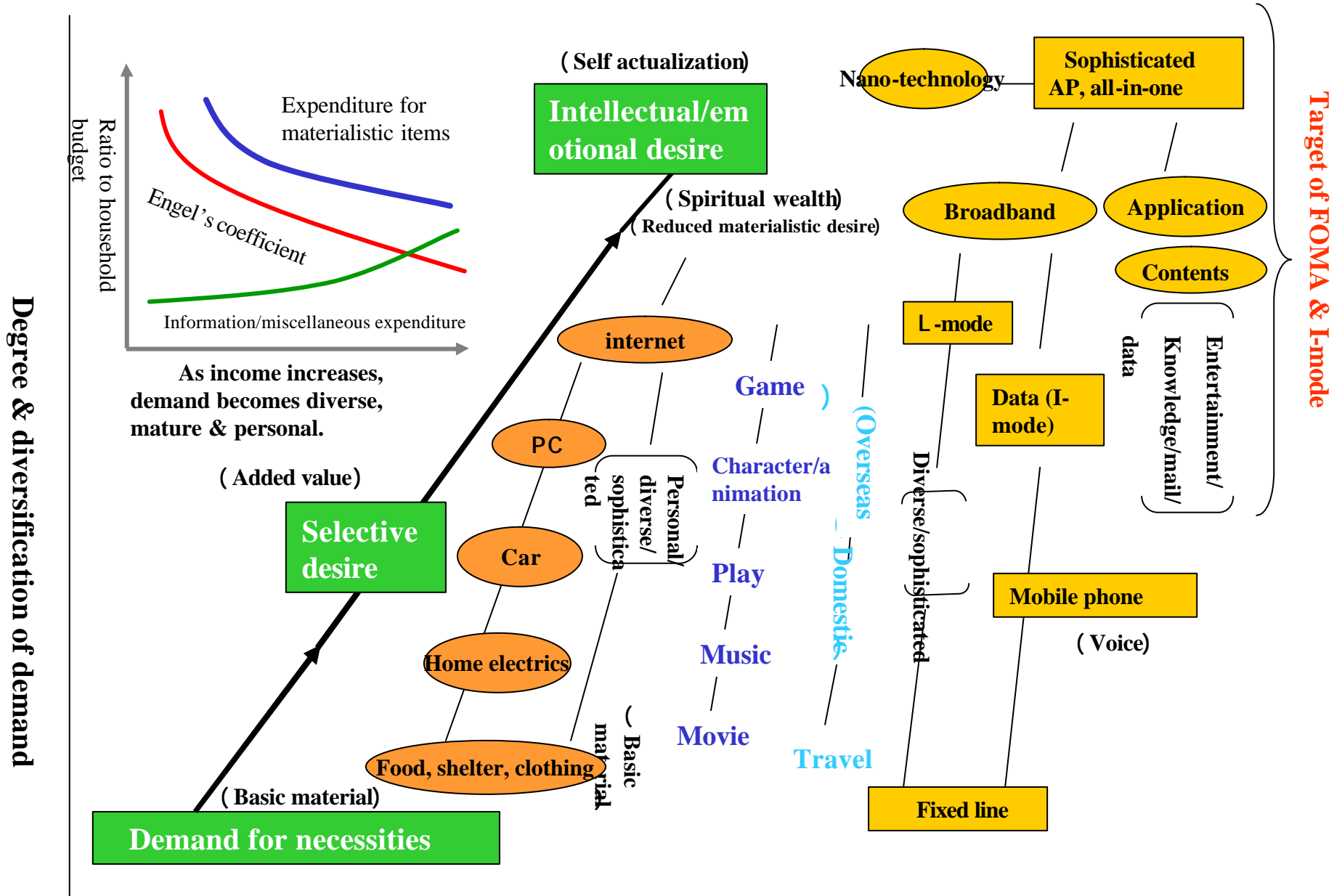
	Mobile phone	Internet
Increase communication with friends	37.6%	41.7%
Expand activities	23.2%	24.0%
Make more friends outside office/school	21.4%	25.8%
Work longer time	31.4%	31.3%
Spend time more efficiently	24.4%	28.6%
Make decisions with more information	37.0%	50.7%
Watch TV less	30.2%	39.4%
Find new hobbies	25.6%	31.8%

Source: Communication White Paper, MPT, FY'98

Challenge to the Mobile Frontier

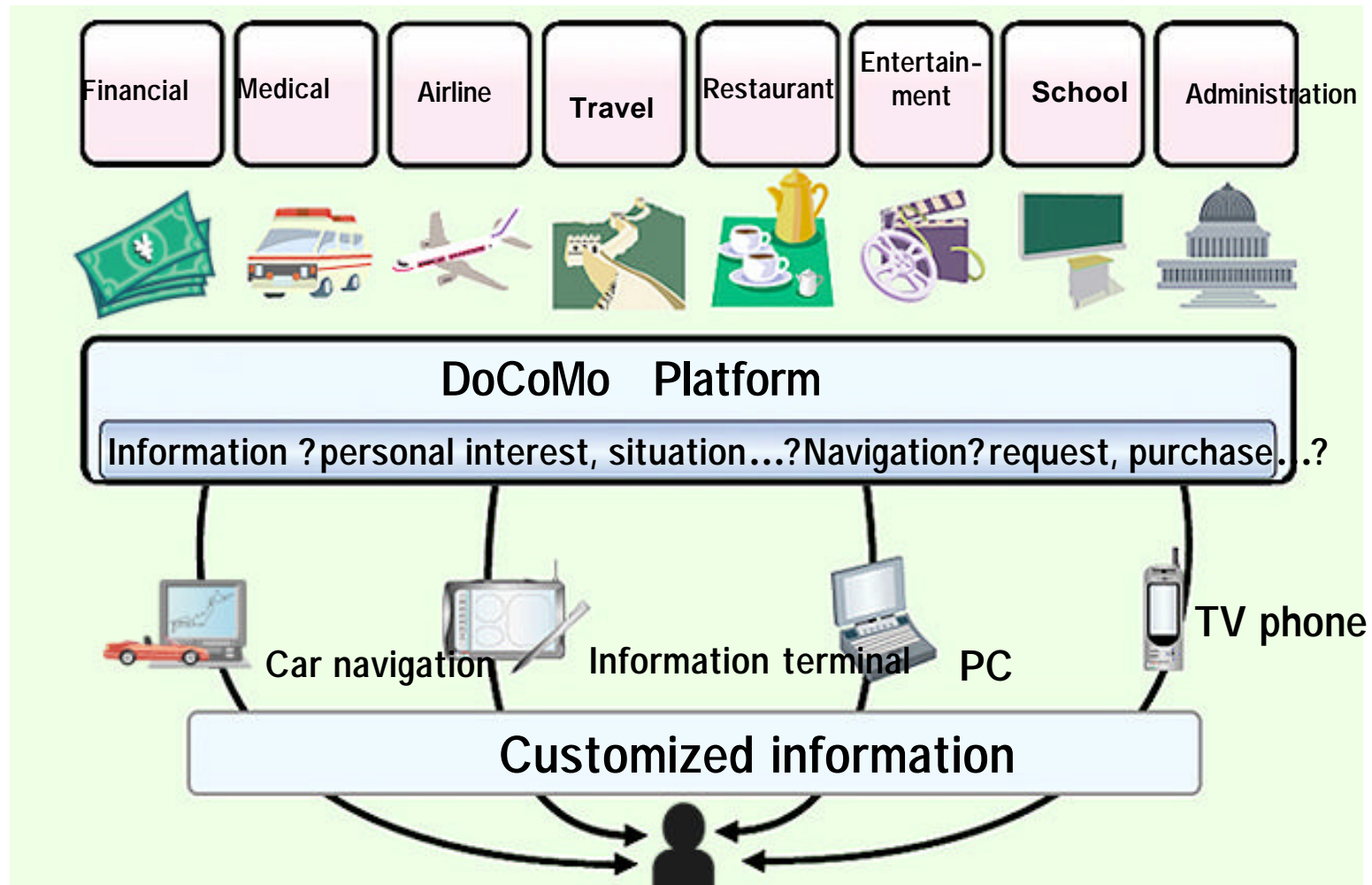


Maturity of society and desire

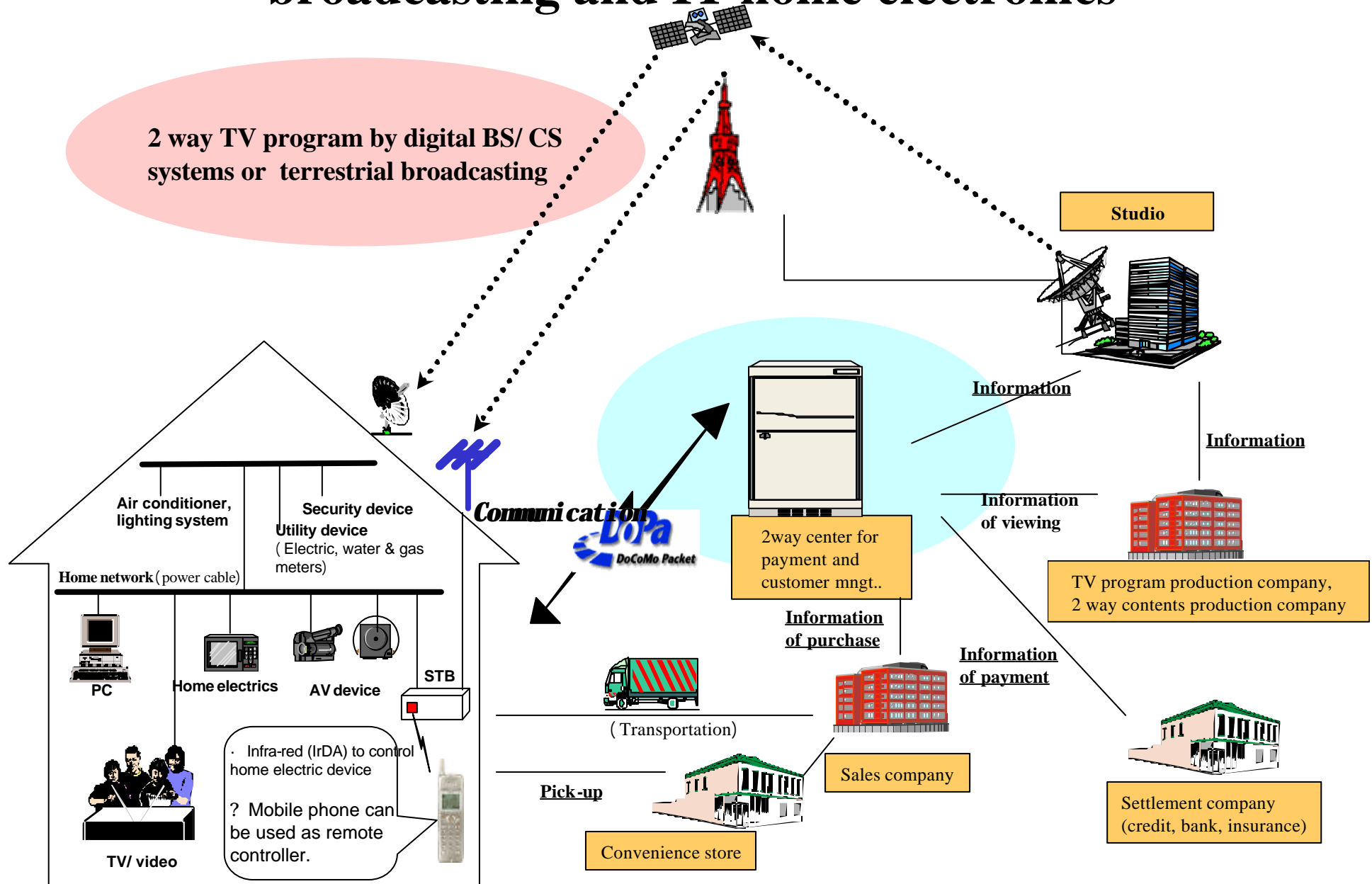


Customized Personal Service - support information life of individuals-

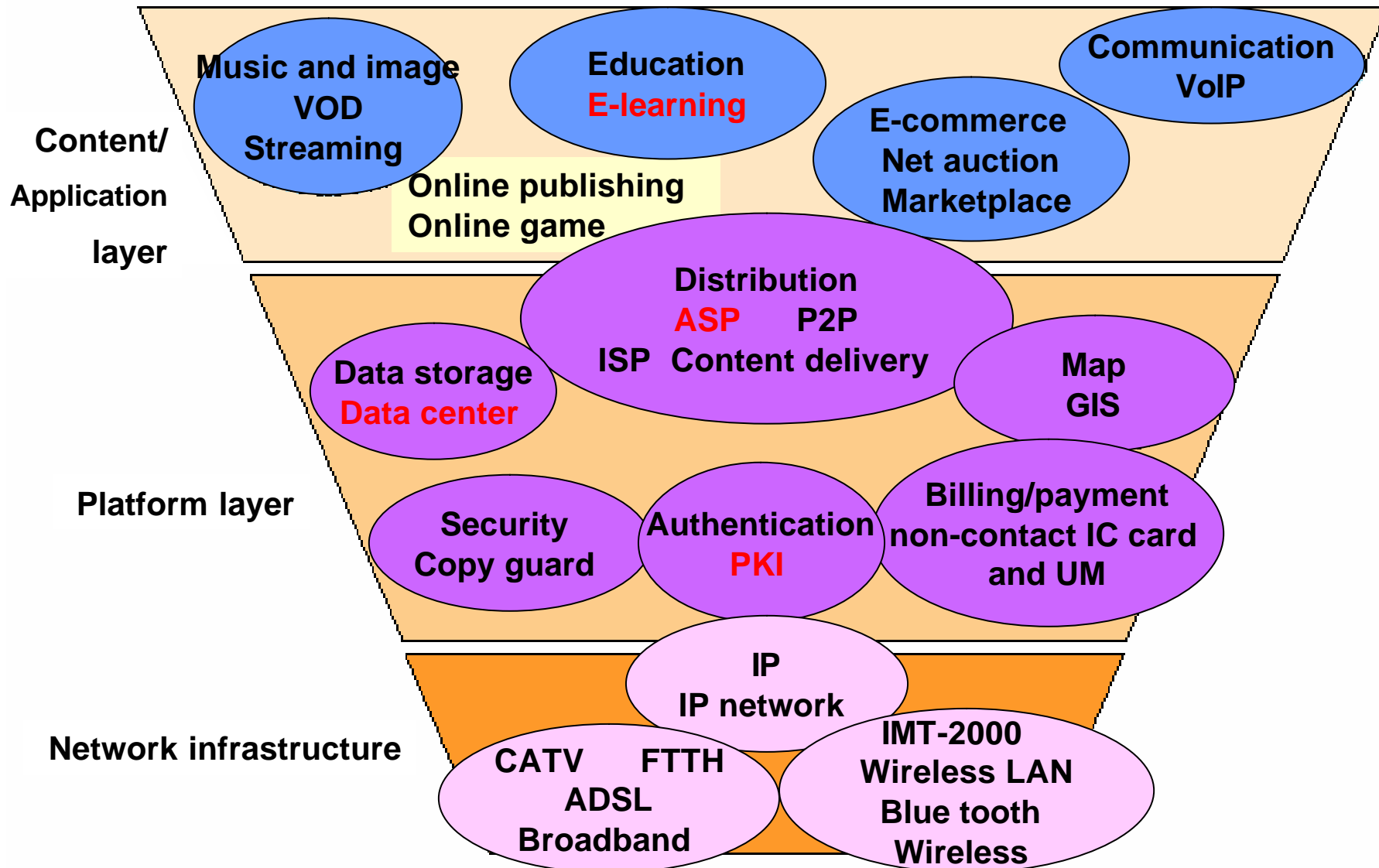
- timely provision of service & information for individual needs
- navigation to match personal needs



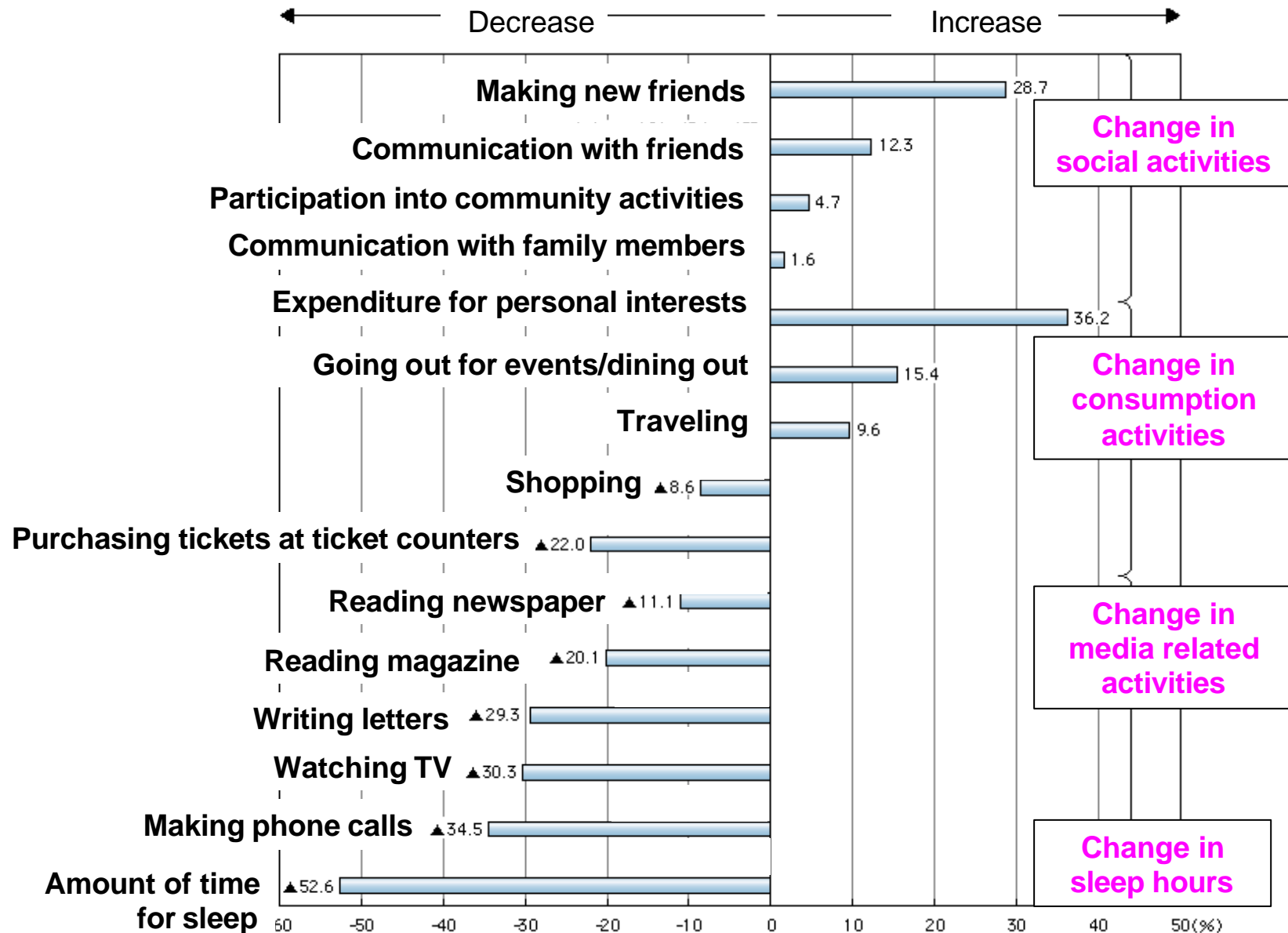
Integration of telecommunication, broadcasting and IT home electronics



Internet creates new business



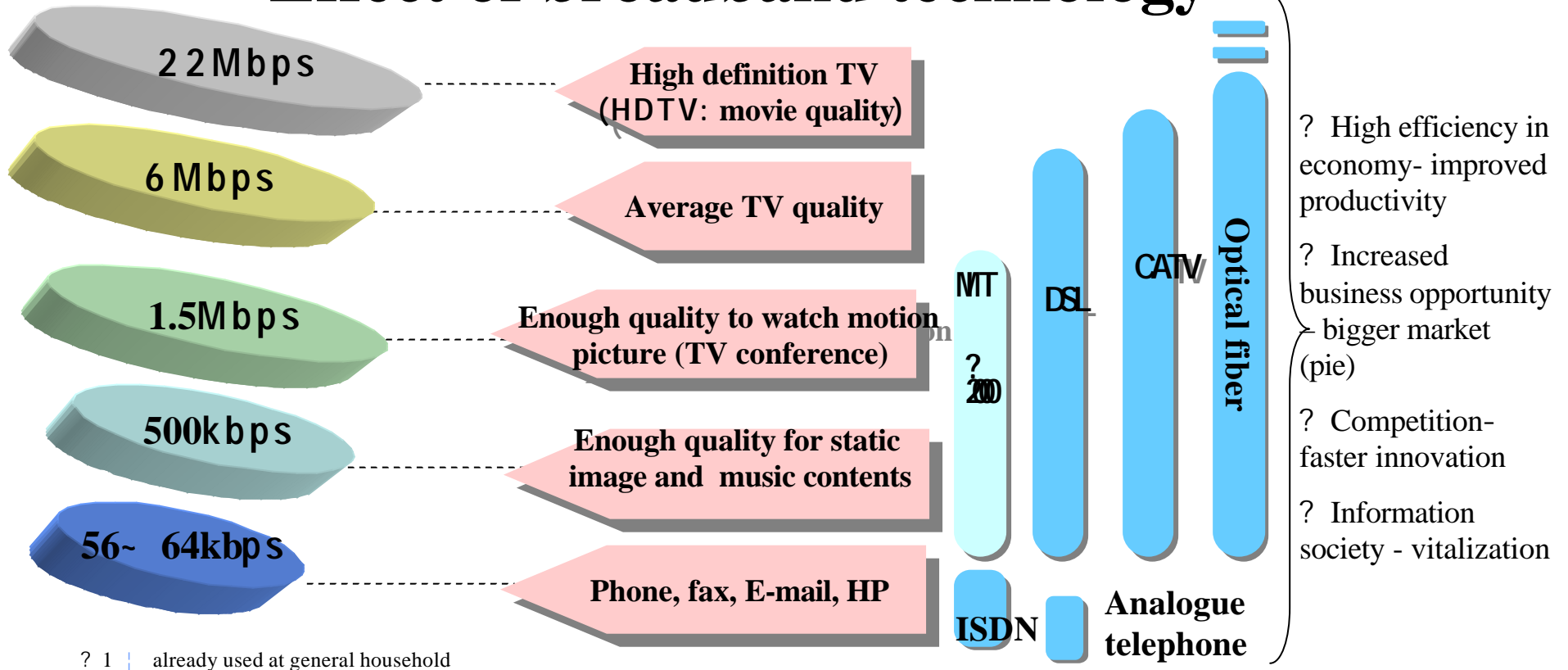
Internet influences life style



? Numbers represent the percentage value of “increase” deducted by the percentage value of “decrease”.

? Source: Survey of IT and lifestyle of the Japanese citizens

Effect of broadband technology



? 1 | already used at general household

? 2 Transmission speeds in the figure indicate capacities required for streaming respective types of contents (for example, 6MBPS is necessary to watch TV quality motion picture via internet).

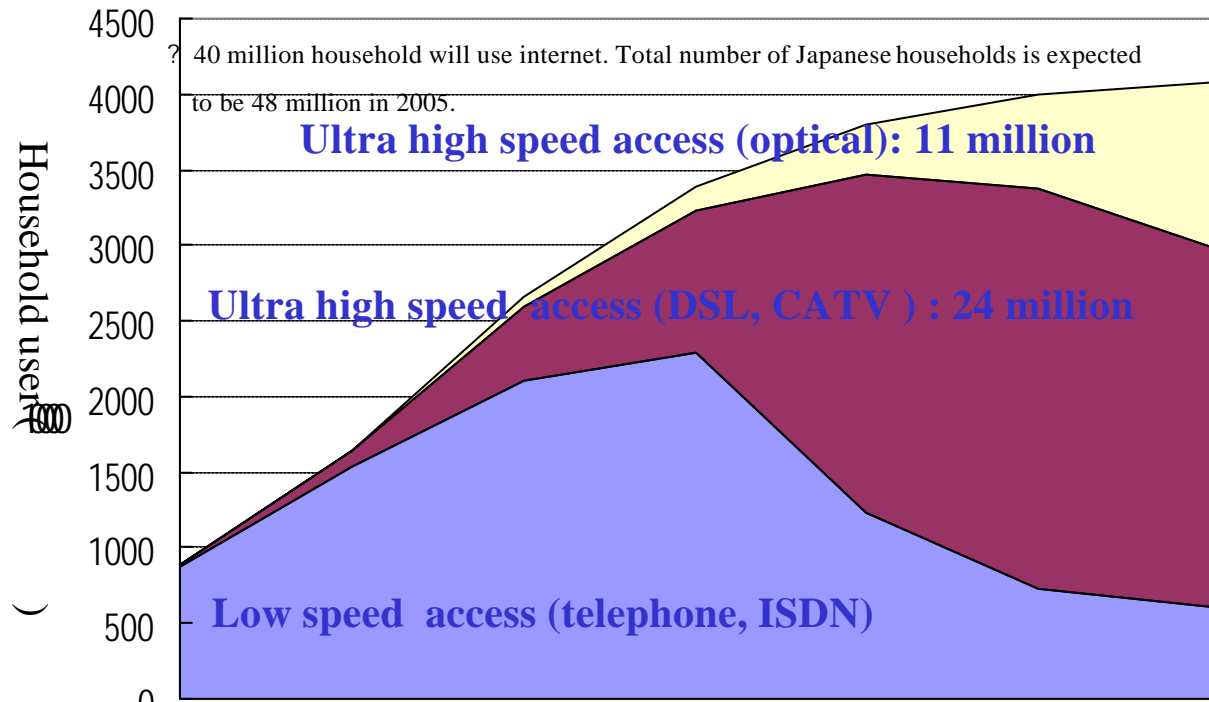
Length of time required to download contents

	ISDN(64kbps)	DSL(600kbps· actual)	Cable TV network	FTTH(100Mbps)
Music (1 piece: 5 minutes) 4.8 bites (MP3)	10 minutes	64 seconds	25.6 seconds	0.4 second
Music (1 CD: 74 minutes) 72 MB (MP3)	2.5 hours	15 minutes	6 minutes	6 seconds
Movie (2 hours) 3.6 GB (MPEG 2)	125 hours	13 hours	5 hours	5 minutes

Demand projection of internet access

Demand to internet access at household

Use of internet will grow from 16 million households (35% of penetration) to 40 million households (83% of penetration) between FY 2000 and FY 2004. 80% of household users are expected to use high speed internet access in FY 2004.

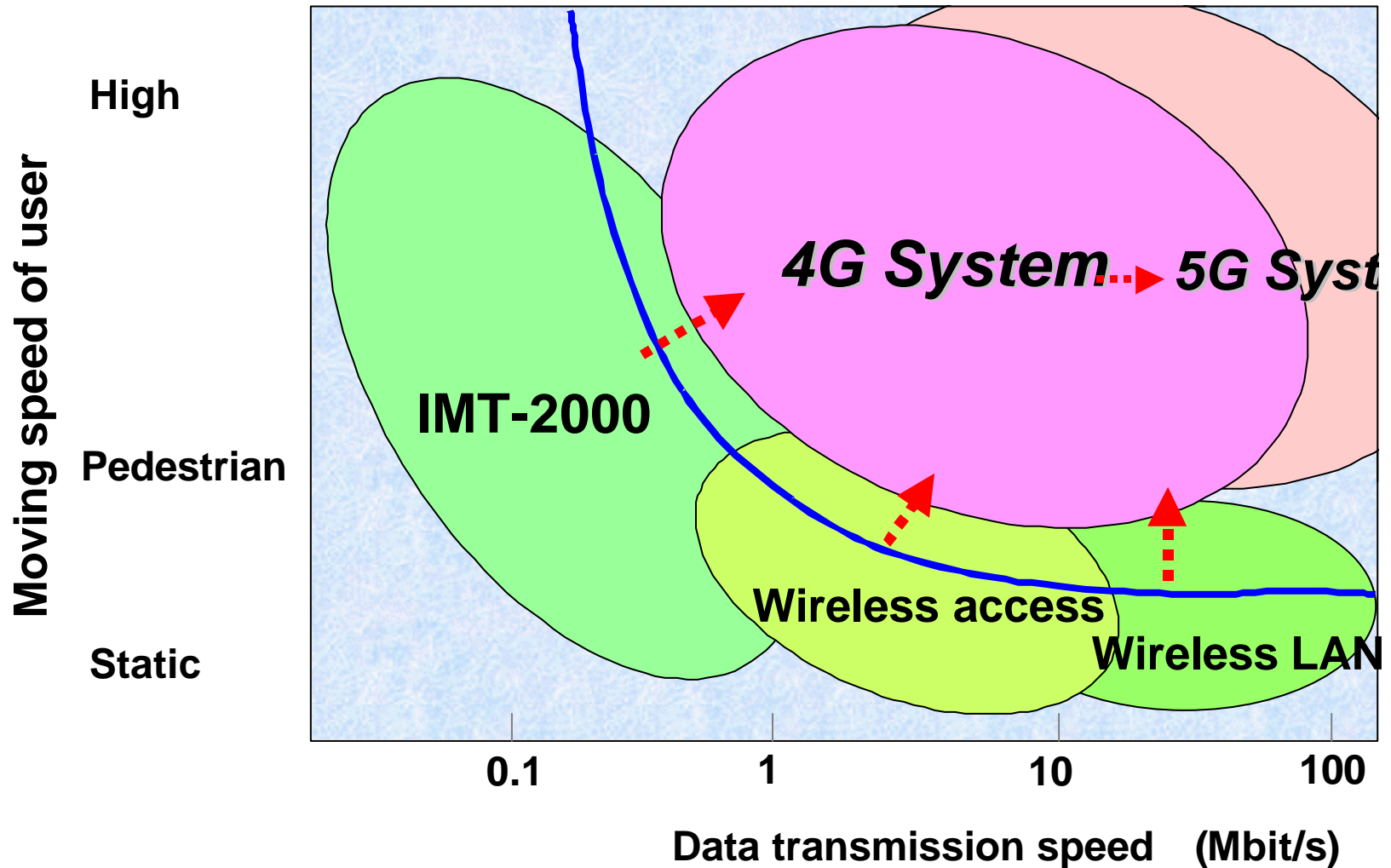


	FY'99	FY'00	FY'01	FY'02	FY'03	FY'04	FY'05
Household users (10,000)	900	1640	2670	3400	3800	3990	4070
High speed (optical fiber)		1	75	160	320	610	1080
High speed(ADSL? CATV)	22	95	475	950	2240	2650	2370
Low speed (telephone line,ISDN)	878	1544	2120	2290	1240	730	620

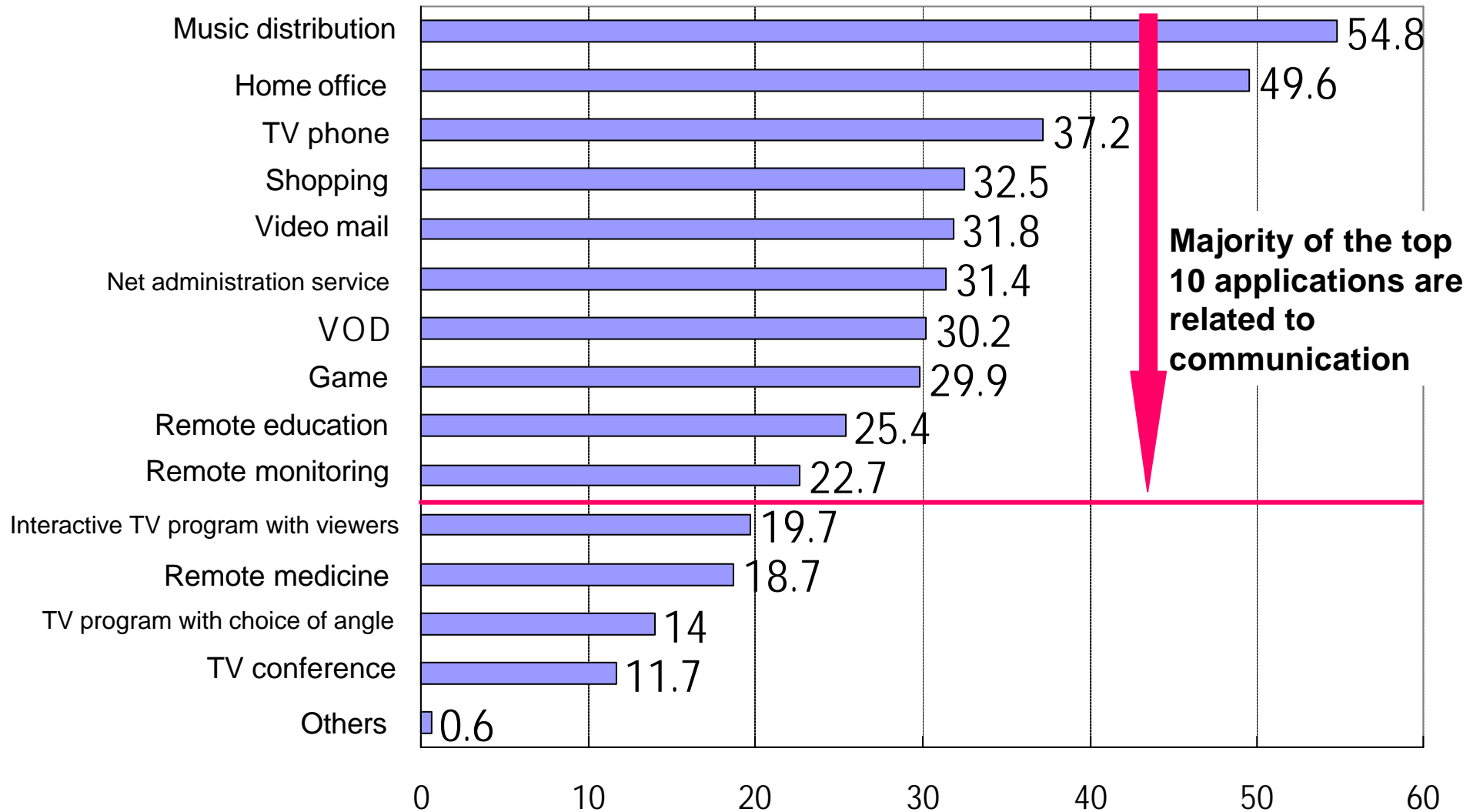
???:???????????????? (H13.4.24)

More than 30 million households will use high speed

Mobile communication systems beyond IMT-2000



Market demand for broadband

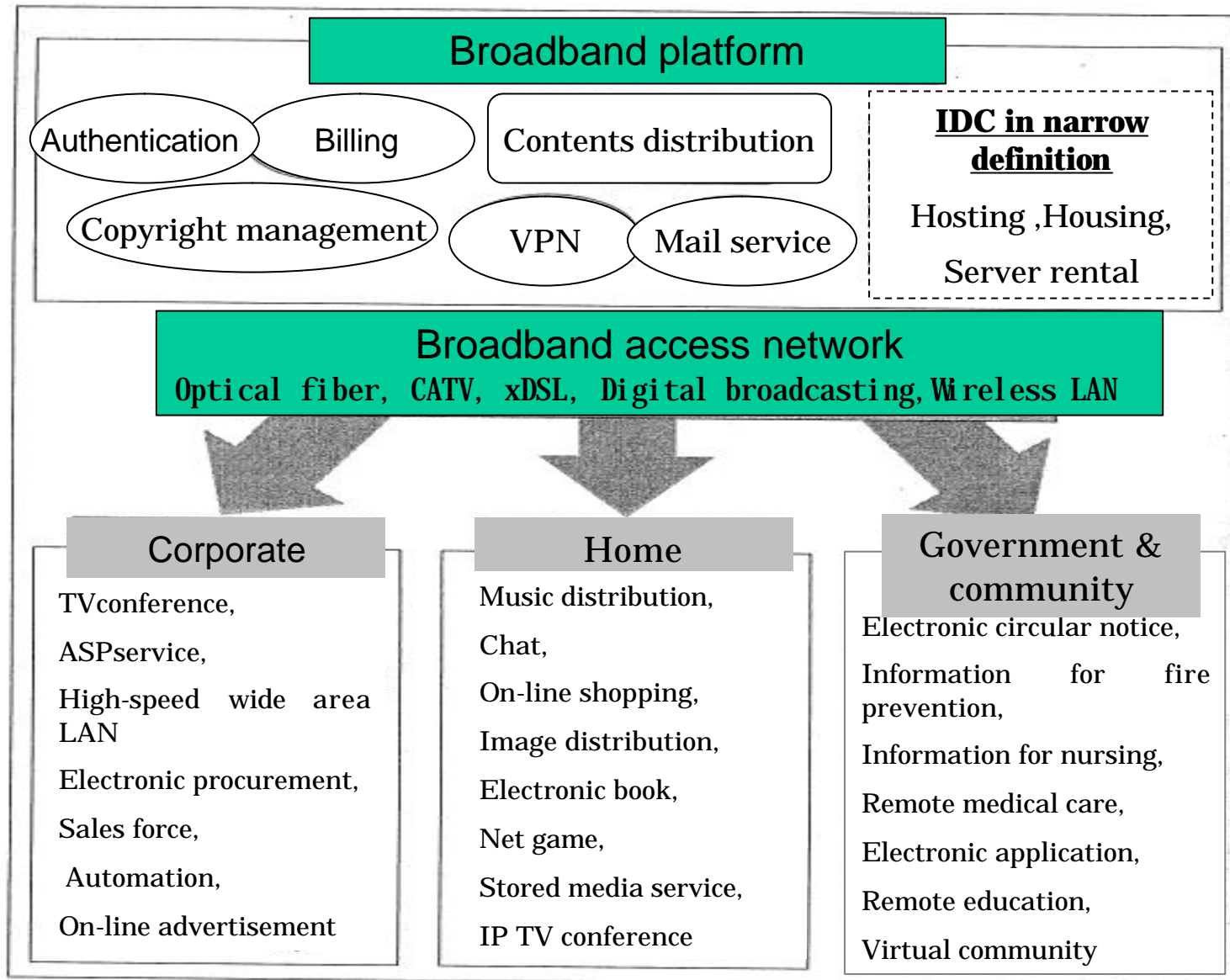


Survey period: May 2, 2001~ May 18, 2001

Number of samples: 16254

Method: open questionnaire on home page of Goo Research company

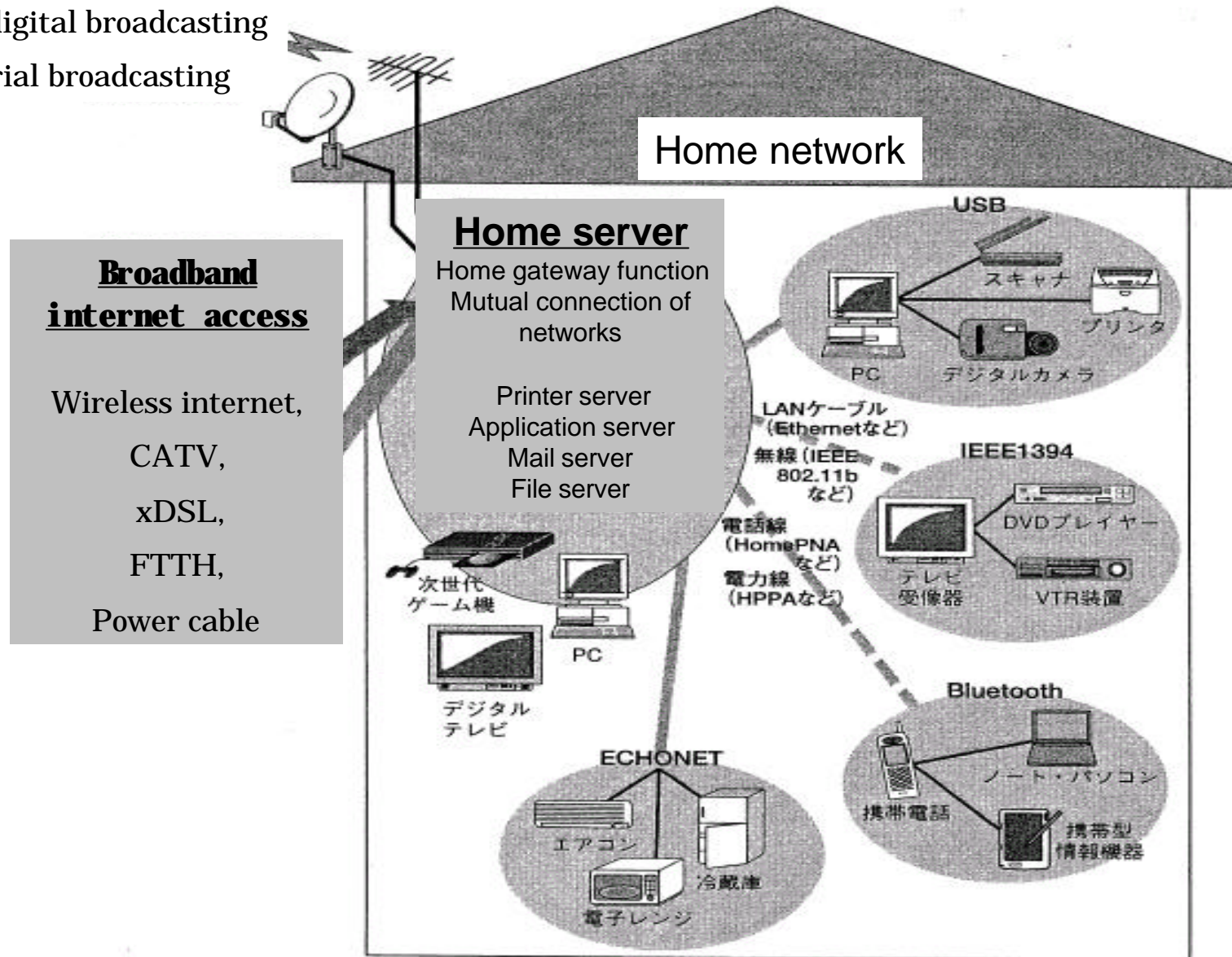
Broadband platform



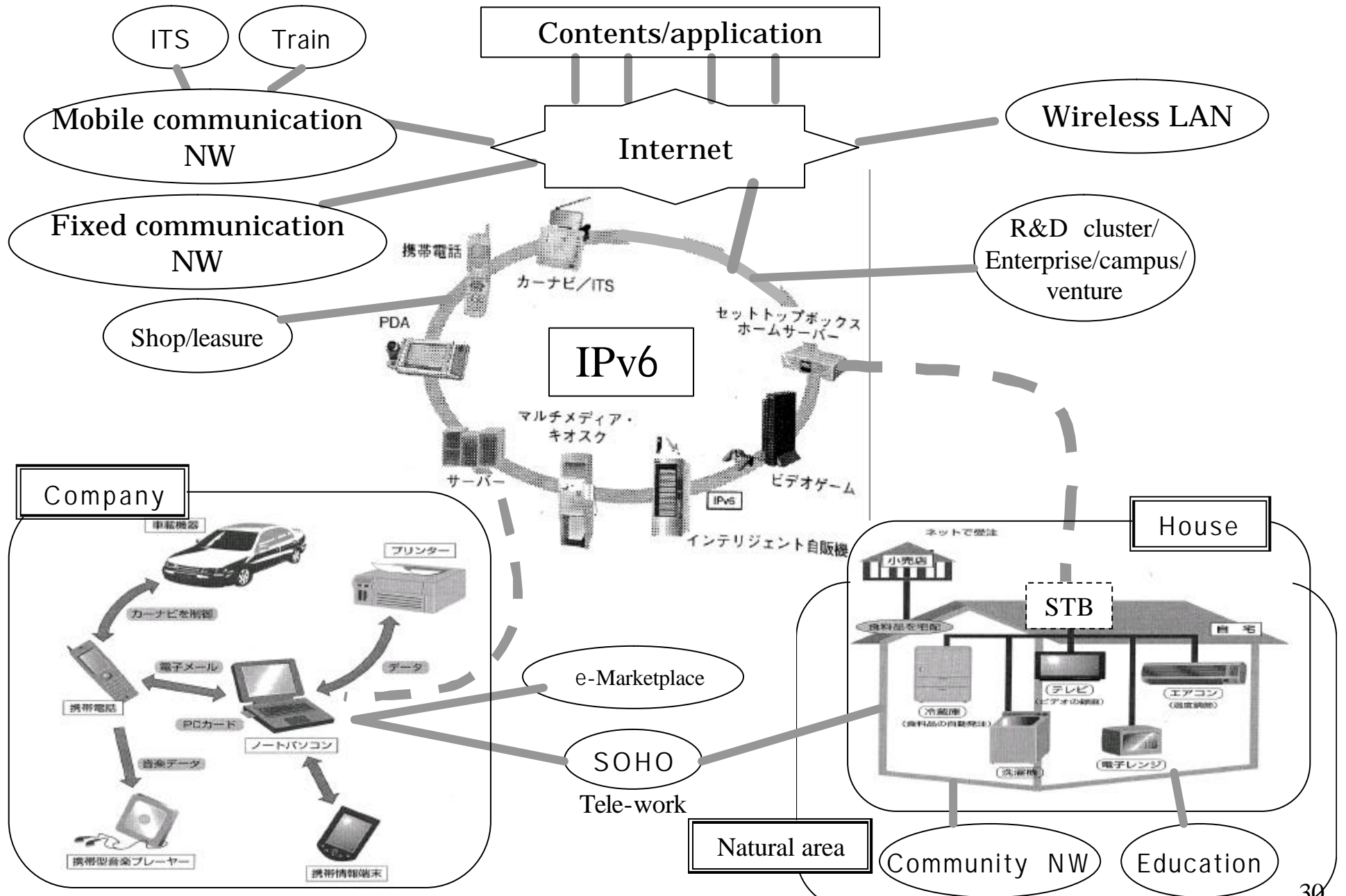
Function of home server on home network

BS/CS digital broadcasting

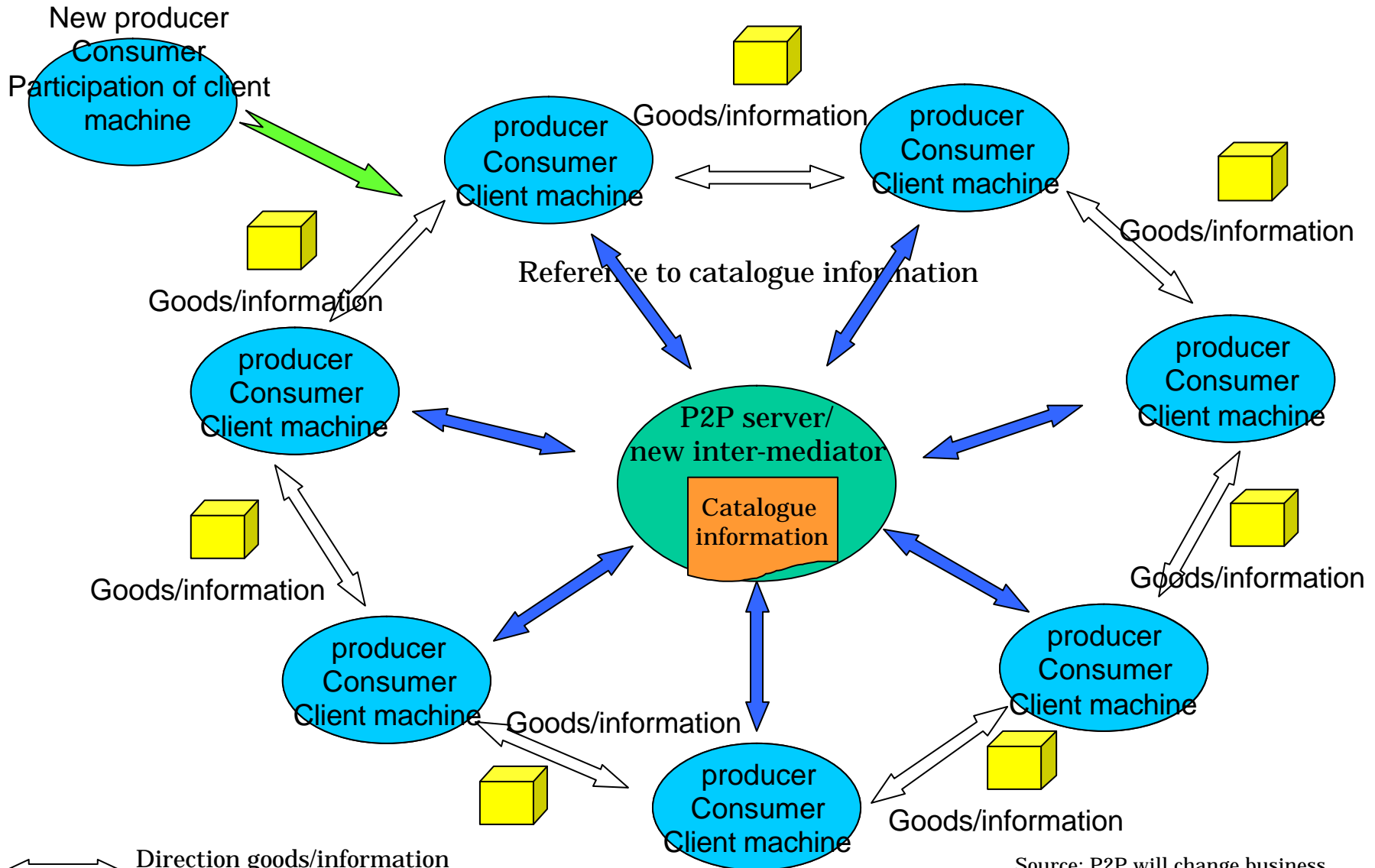
Terrestrial broadcasting

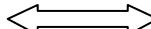




World of ubiquitous network



P2P technology and new business model



-  Direction goods/information
-  Reference & transmission/reception of catalogue information
-  Participation of new producer, consumer & client machine

Source: P2P will change business
(P2P ga Business o kaeru)

by Takunori Oya

(published by shoeisha)

Impact of ubiquitous network

Broadband = Large volume of high quality knowledge/information is transmitted at high speed & low cost

Eliminate barrier of:

- ? Time & space
- ? Information divide
- ? Cost

*Information
renaissance

Wearable

IPv6

- ? Horizontal spread of knowledge & information/ Ubiquity, in depth communication
- ? Equal allocation of information
- ? Information society of general public

- 1)Improvement of intellectual productivity
 - ? New composition of existing knowledge & information
 - ? New idea and invention
- (2)Emotional richness
- (3)Self-actualization**(example)
 - ? Prosumer
 - ? BtoB BtoC — CtoC PtoP

- Pyramid organization ? Flat organization
- One-way education ? Two-way interactive
- Information:Consumer < Buyer ? Consumer = Buyer

* Monopoly of information & knowledge

- Reformation
- Printing

General public

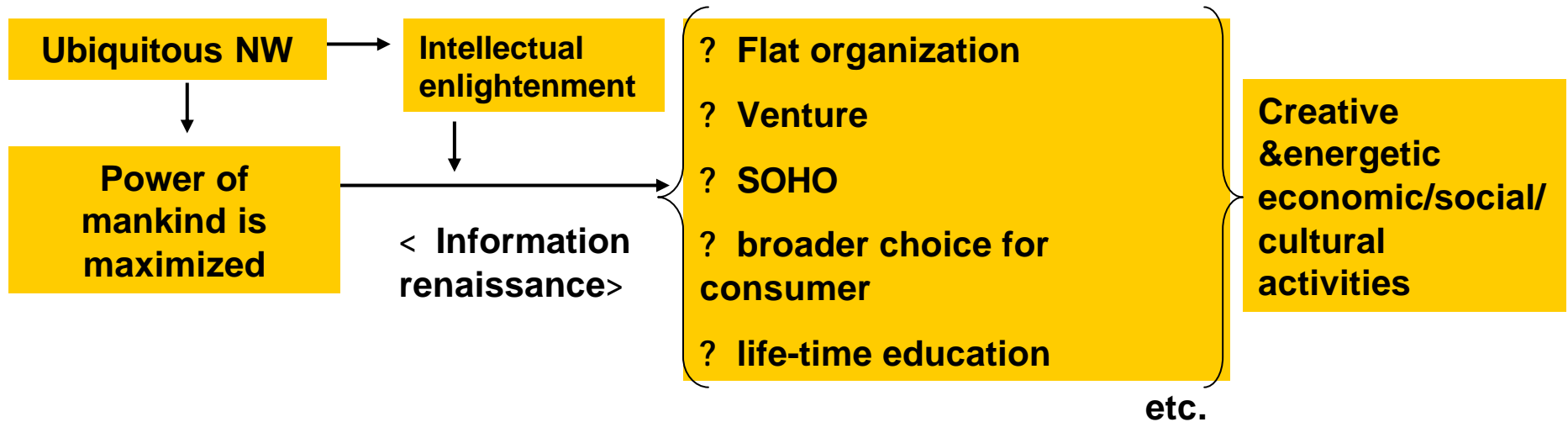
(Enlightenment)

Renaissance

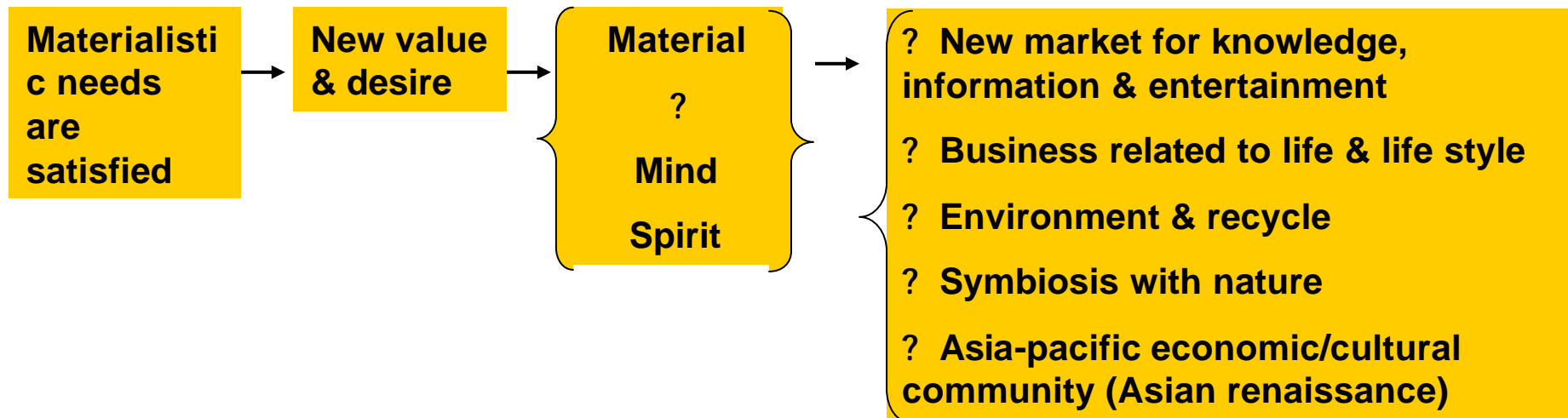
Industrial revolution

Function of cities in information renaissance (1)

? Equipped with IT: infrastructure for economy and healthy social development



? Place to answer diversified sense of value and desire



Function of cities in information renaissance (2)

? Structure of cities in information renaissance

? Hardware centric functional city



Hardware ? Useware

? Flexible environment for people to freely exercise their personality, intelligence, sense and creativity



Diversified patterns

? Active exchange of knowledge & information creates synergy and diversified values

Exaltation of intelligence, sense and joy
(information renaissance = fertile environment)



NTT

Do Co Mo

Do Communications
Over The Mobile Network