

Tentative Translation

# Structural Reform Evaluation Report 3

-Progress of IT Use and the Economy-

(Main Points)

November 2004

Cabinet Office

# Main Points of Structural Reform Evaluation Report 3

## 1. Has the base for world-class IT society been established?

### [Results]

- World's cheapest and fastest network infrastructure (ADSL) has been established. The number of broadband subscribers has increased sharply after 2001.
- Japan and South Korea far outpace other countries in the use of the Internet via mobile phone.

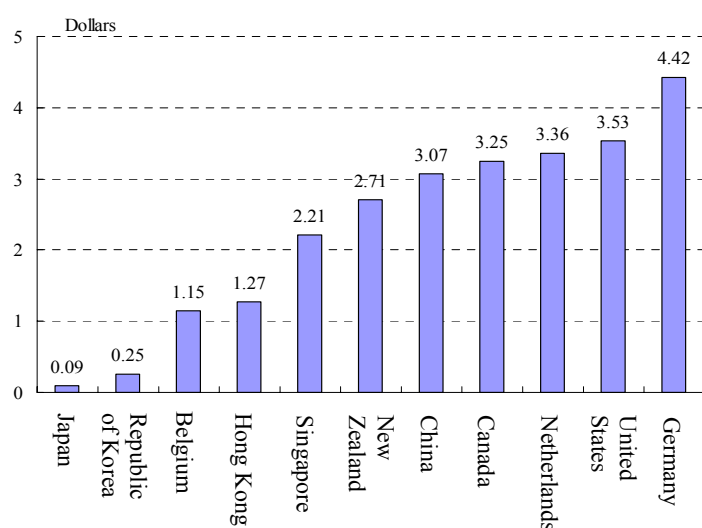
### [Challenges]

- Although ADSL has been spreading, diversified infrastructures, such as FTTH and wireless LAN, should be established from the standpoint of responding to rapid technical innovation and diversifying needs.
- Continued promotion of competition, including new entry into the mobile phone market, and effectively utilization

### [Measures]

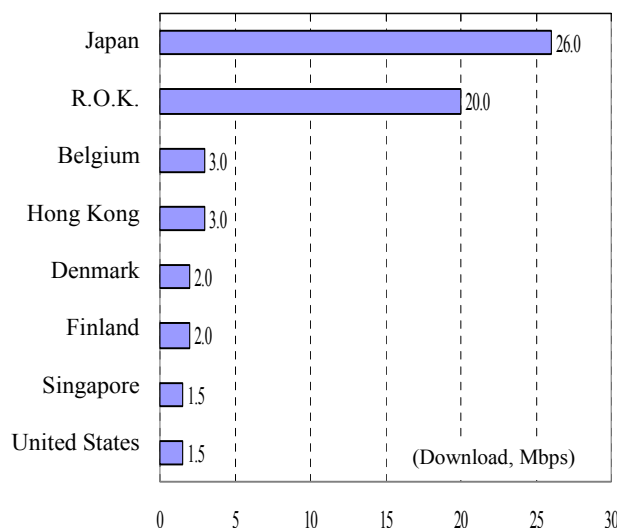
- It is important to promote the development of infrastructure through competition, while keeping in mind the progress of each infrastructure.

Figure 1 International Comparison of Broadband Fees



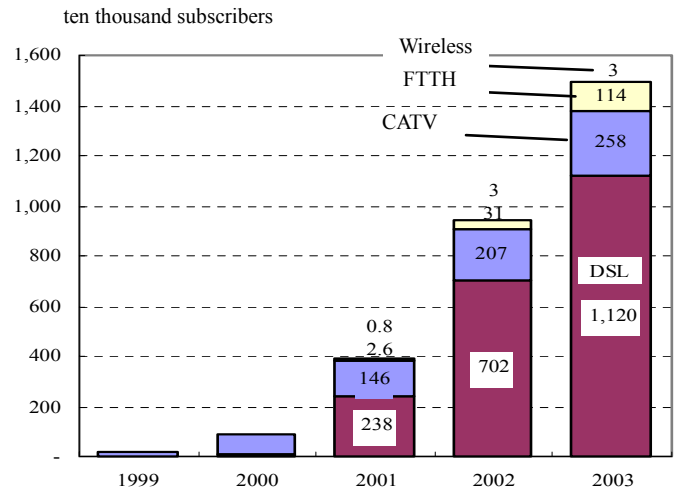
(Note) 1. Comparison of fees per 100 kbps as of July 2003.  
 2. Compiled by the Ministry of Internal Affairs and Communications (Information and Communications in Japan) from ITU "Internet Reports 2003: Birth of Broadband"

Figure 2 International Comparison of Broadband (ADSL) Traffic Speed



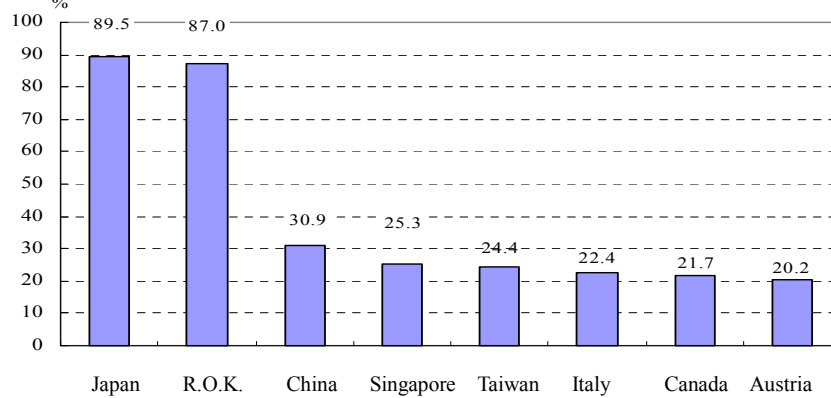
(Note) 1. Comparison of download traffic speed of ADSL  
 2. Compiled by Cabinet Secretariat's IT Office from ITU "Internet Reports 2003: Birth of Broadband"

Figure 3 Changes in the Number of Broadband Subscribers



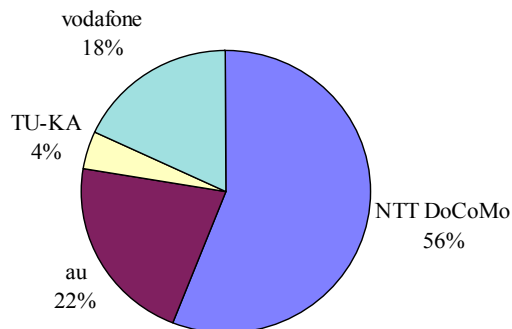
(Source) "Information and Communications in Japan: 2004," Ministry of Internal Affairs and Communications

Figure 4 International Comparison of the Ratios of Mobile Phone Internet Subscribers to All Mobile Phone Subscribers



(Note) 1. As of the end of September, 2003  
 2. Produced from "3D Mobiles" by the Ministry of Internal Affairs and Communications ("Information and Communications in Japan: 2004")

Figure 5 Market share of Mobile Phone companies



(Note) Telecommunications Carriers Association's web site; as of September 2004

## 2. Has IT Made Life Convenient?

### [Results]

- 96% of Internet users say that IT has made their lives convenient.
- The convenience of life has improved, as IT enables speedy information collection, communications, procedures and transactions at any time and place.

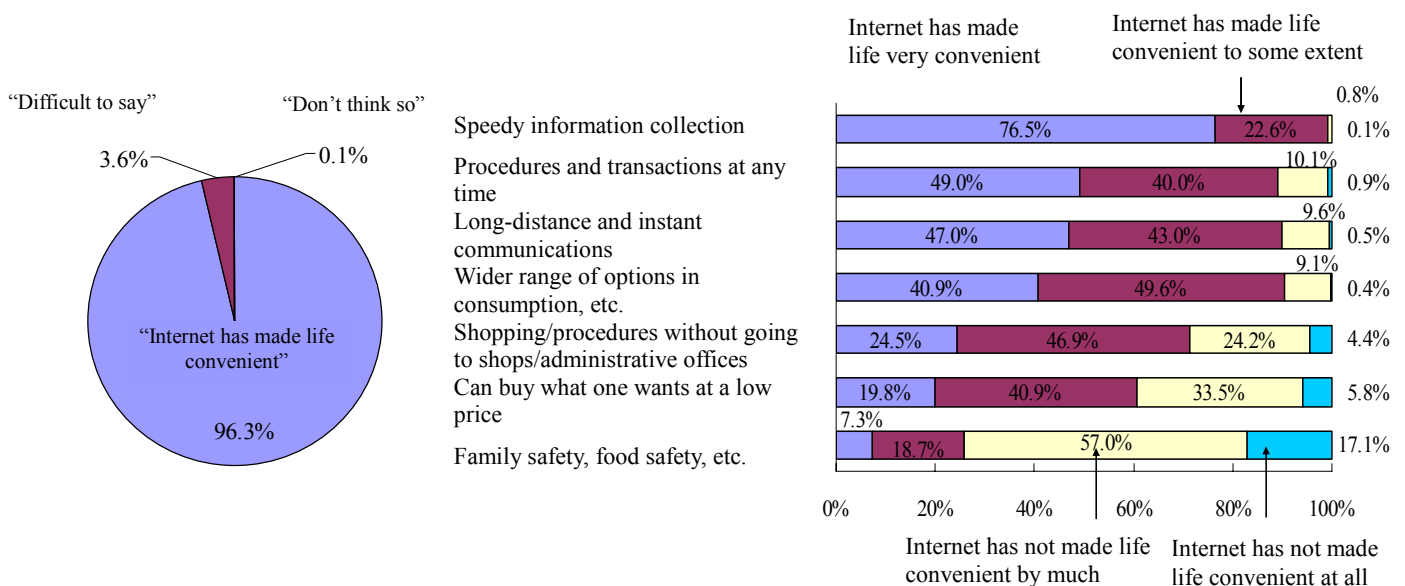
### [Challenges]

- IT has yet to achieve the desired effect in such fields as administration, medical treatment, and education.

### [Measures]

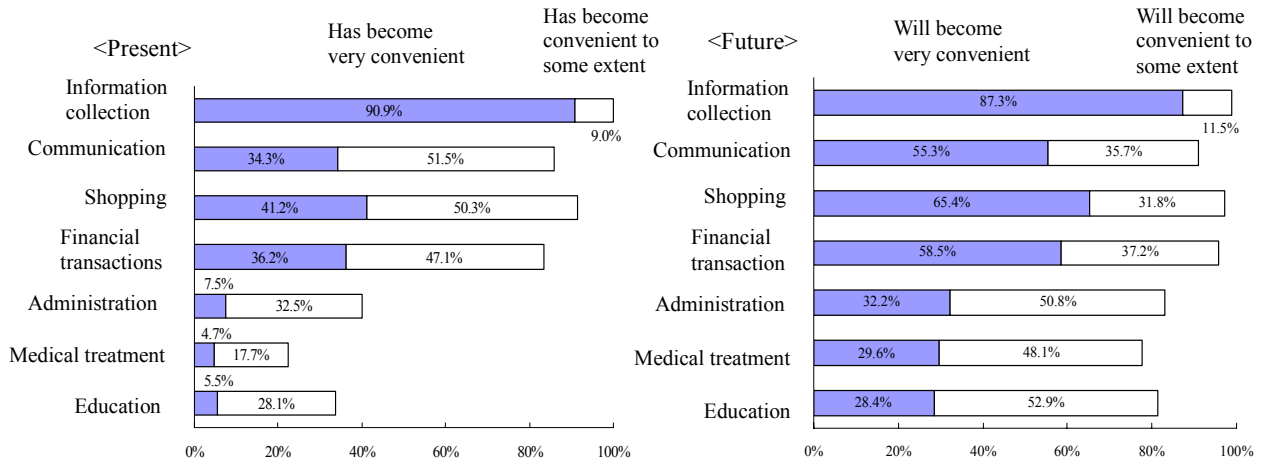
- Setting numerical targets for IT utilization
- Improvement of inhibiting regulations and practice (such as obligation to keep paper documents), and establishment of necessary standards and systems
- Development of manpower
- Promotion of IT utilization in strategic fields, such as public administration, medical treatment, education and employment

Figure 6 Evaluation of Improvement of Convenience Brought About by Internet



(Note) "Survey on the enhancement of convenience brought about by IT and demand creation effect" (No. of respondents: 1120)  
 Note that since it was a questionnaire survey via the Internet, it covered only Internet users.

Figure 7 Evaluation of the Improvement of Convenience Brought About by Internet in Various Fields



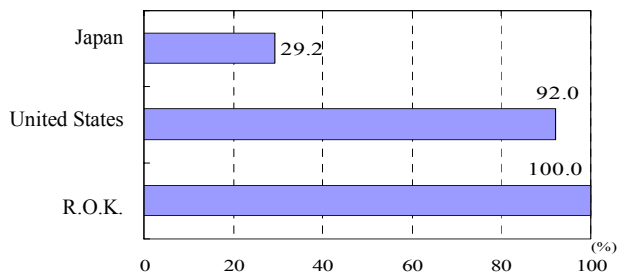
(Note) "Survey on the enhancement of convenience brought about by IT and demand-creation effect" (No. of respondents: 1120), Consumer Web survey

Figure 8 IT Utilization in Medical Field  
Computerized issuance of medical receipts

R.O.K. (As of October 2002)	
• Online	72.5%
• Magnetic media	3.8%
Japan (As of December 2003)	
• Online	0.0%
• Magnetic media	7.2%

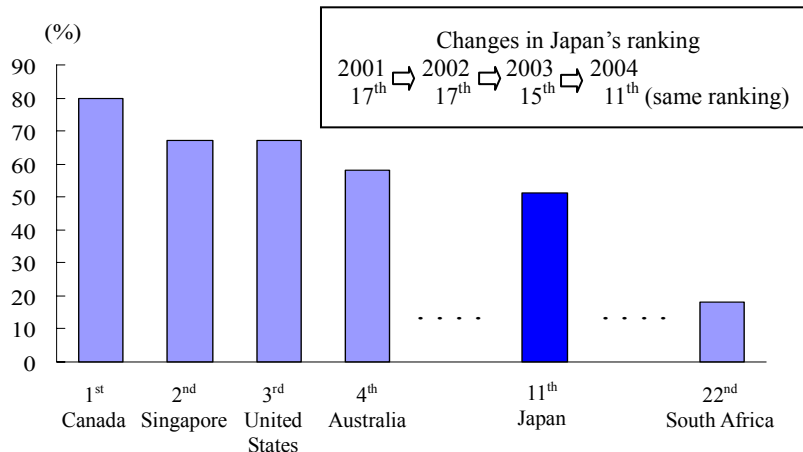
(Note) 1. Online issuance of bills in Japan is slated to start in fiscal 2004.  
2. Compiled by Cabinet Secretariat's IT office from surveys conducted by the Ministry of Health, Labor and Welfare and others.

Figure 9 IT Utilization in Education Field  
Percentage of Internet-connected classrooms



(Note) 1. Japan: March 2003; United States: October 2002; R.O.K.: 2000  
2. Compiled by Cabinet Secretariat's IT office from documents of the Ministry of Education, Culture, Sports, Science and Technology

Figure 10 Progress in E-government in Various Countries (2004)



(Note) "global e-Government Study," (each year edit) Accenture

### 3. Has IT Increased the Productivity of the Economy?

#### [Results]

- After 2000, IT increased labor productivity by an average about 0.9% annually (accounting for about 80% of the total growth of labor productivity (average annual growth rate of 1.1%)).

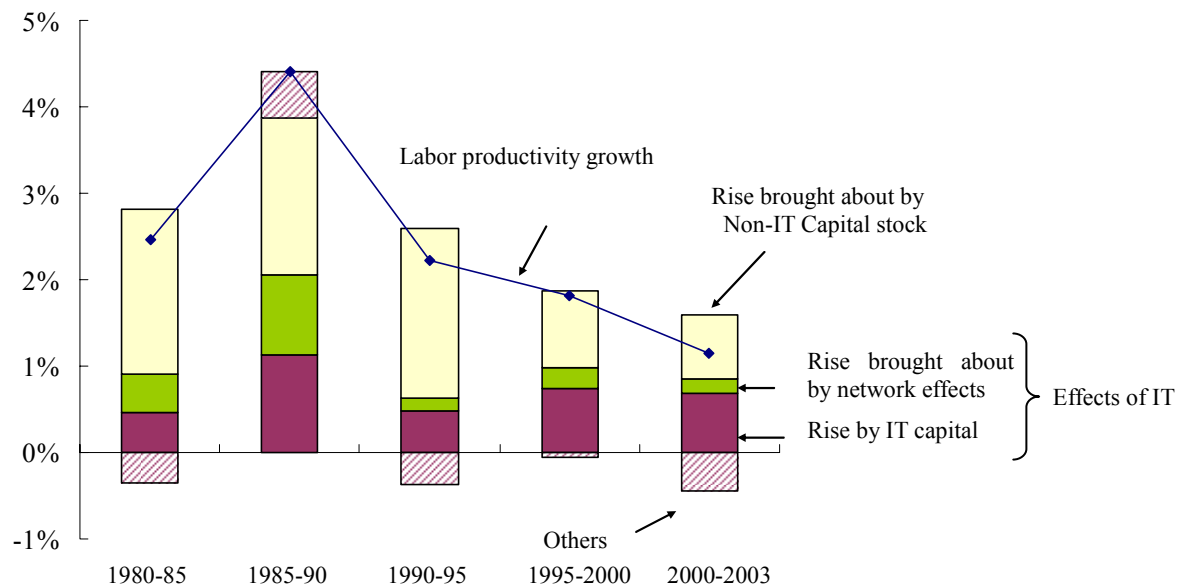
#### [Challenges]

- There is still room to increase productivity by IT investment.
- Corporations have not yet taken full advantage of IT.

#### [Measures]

- Establishment of systems and environment to facilitate development of manpower, efficient utilization of personnel, and reform of corporate structure in response to moves toward IT.

Figure 11 Factor Analysis of Labor Productivity Growth



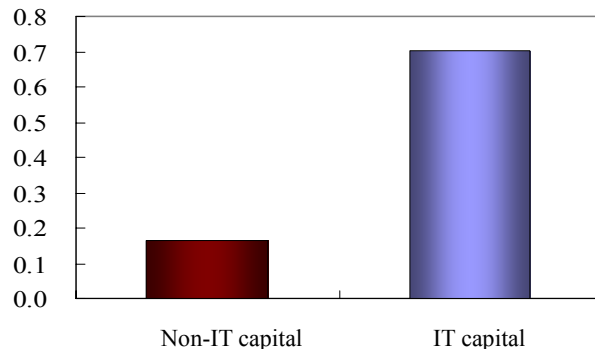
(Note) 1. Hypothecating the Cobb-Douglas production function, the analysis was made as follows:

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

Y: Value added, L: Labor input,  $K_{\text{NonIT}}$ : Non-IT capital stock,  $K_{\text{IT}}$ : IT capital stock,  $\beta_{\text{NonIT}}$  and  $\beta_{\text{IT}}$  are distribution factors of non-IT capital and IT capital, respectively.

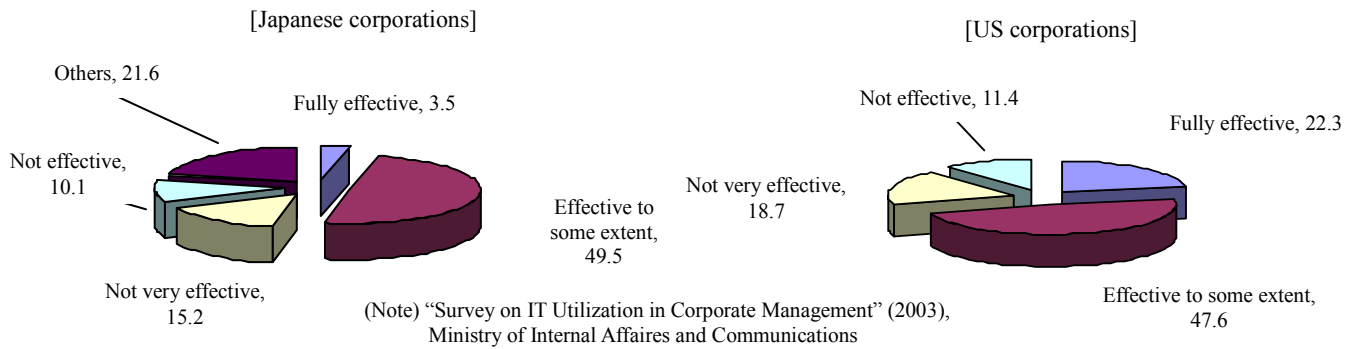
2. Then, TFP growth rate was divided into that caused by network effects and that by others.

Figure 12 Productivity-Increasing Effect of IT Capital (Marginal Productivity)



(Note) Estimated results of Cobb-Douglas production function

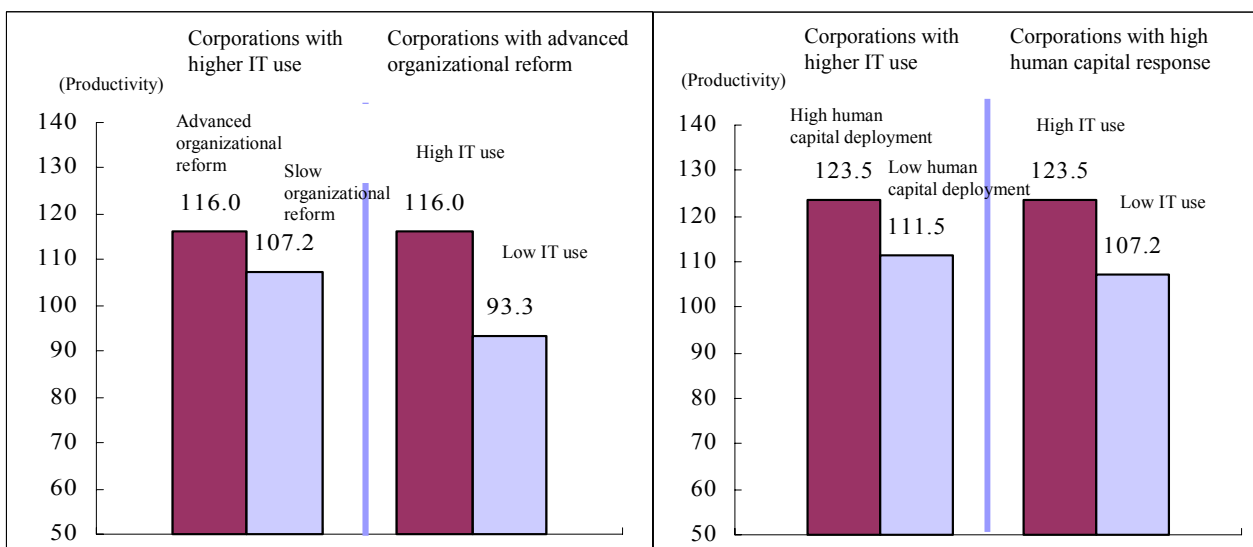
Figure 13 Comparison of Corporate IT Investment Effects in Japan and United States



(Note) "Survey on IT Utilization in Corporate Management" (2003), Ministry of Internal Affairs and Communications

Figure 14 Relationship Between IT Investment Effects and Corporate Structure Reform/Human-Capital Deployment

[Effects of IT investment and organizational reform] [Effects of IT investment and Deployment of human capital]



(Note) 1. Productivity was standardized, with corporations with low IT use and slow organization reform and corporations with low IT use and low human capital response being 100.

2. "Survey on the impact of IT on corporate productivity and management organization reform," Corporate Web Survey; Corporations' financial data