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TOPICS

Looking to Strengthen the International Competitiveness of the ICT Industry

MIC set up in October 2006 the Panel on ICT International Competitiveness (Chair: Professor Emeritus SAITO Tadao, the University of Tokyo) with the goal of investigate core strategic directions concerning the strengthening of international competitiveness in the ICT industry. This document presents the final report that was compiled in April 2007 as well as the contents of the ICT International Competitiveness Enhancement Program that was announced in May following the report.

Background to the investigation of a policy to strengthen international competitiveness

In recent years, there have been dramatic developments in the

circumstances surrounding Japan's ICT, such as the rapid penetration of Internet, the advances in broadband such as optical fiber use, the shift to mobile technologies as represented by mobile phones, and the progress in shifting to digital broadcasting technologies. The contribution of the ICT industry to real GDP has reached 40% and the ICT industry is a major moving force in the realization of Japan's economic growth (Figure 1). In addition, the ICT industry has provided a high-level information and communications infrastructure to the industries that use ICT, and it has proved to be an impetus for growth for industry as a whole by stimulating improvements in productivity and the like.

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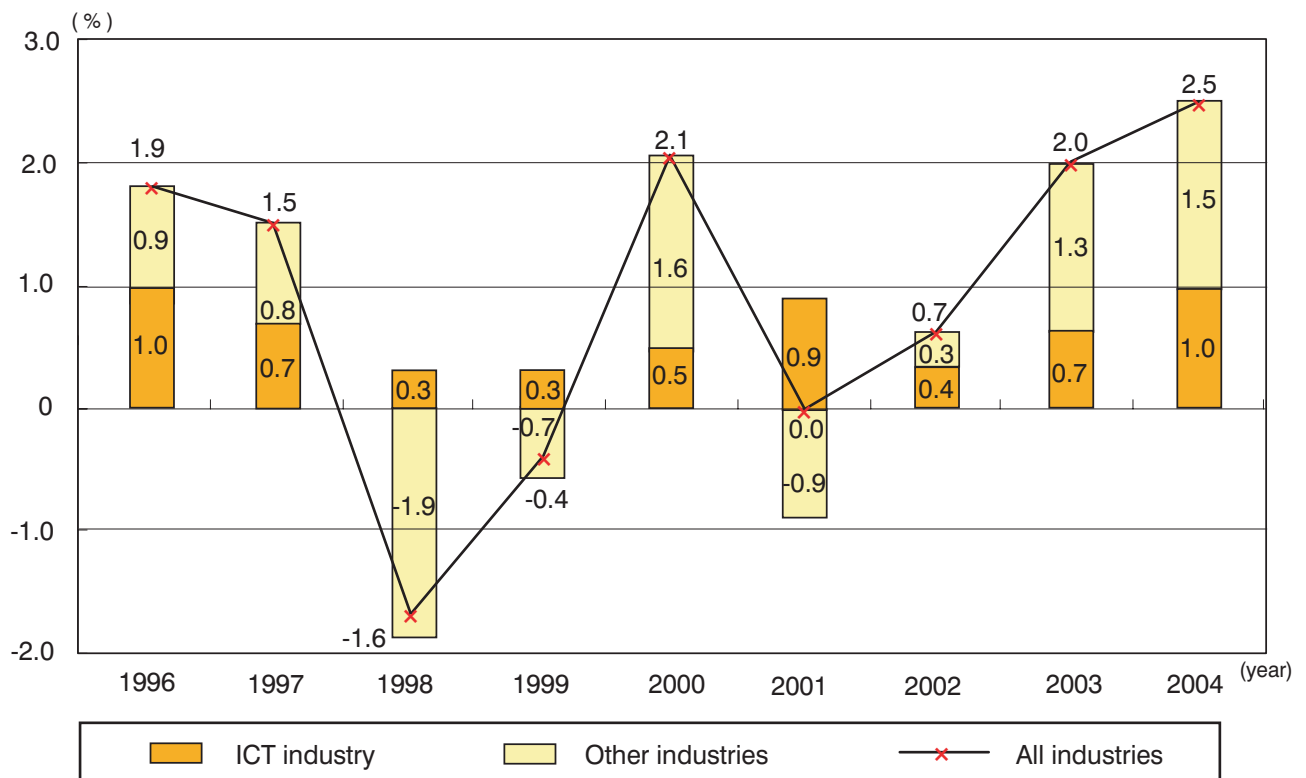
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Figure 1 Contribution of the ICT industry to real GDP



What is more, Japan's ICT is evaluated highly even by experts. For example, 62% of experts consider Japan's technology to be excellent in next-generation mobile phone technology in comparison to Europe and North America, and 54% believe this to be the case for optical fiber.

On the other hand, Japan's ICT industry is having a difficult time on the global markets.

For example, in markets for ICT equipment such as mobile phones and personal computers, the total sales of all the major Japanese manufacturers don't reach those of a single overseas major manufacturer, and many of the patents relating to successful standardization of third generation mobile phones are held by corporations from other countries. In broadcasting as well, Japan holds a high market share in TV sets but the only country at this time to actually use Japan's digital broadcasting technology, which forms the basis of this field, is Brazil.

Under these current conditions in the ICT industry, MIC set up in October 2006 the Panel on ICT International Competitiveness to formulate core strategies concerning the strengthening of international competitiveness in the ICT industry, and numerous discussions were held. The final report was compiled in April of this year, and goals and concrete strategies were suggested to enhance international competitiveness.

The necessity for a core strategy

(1) The causes of the drop in international competitiveness

Three factors were pinpointed as the causes for the drop in international competitiveness of the ICT industry.

The first factor is that the ICT industry worked aggressively at internationalization during the 1980s but before this yielded success, Japanese corporations shifted their activities to the domestic market in the 1990s, due

to the crisis in Asian currencies and the bursting of the IT bubble. The idea is that even without going after foreign markets, everyone could make a living by dividing up the domestic market, so that international competitiveness dropped.

The second factor would be that even though Japan is very good at making individual well-finished products, utilizing its production skills, it is not good at building total systems that cover everything including software. In particular, the importance of network products has increased with the recent penetration of the Internet but, in this field, Japan's international competitiveness is on a downward trend. For example, a personal computer's operating system is the infrastructure that operates various software packages but 96% of this market is monopolized by one American manufacturer.

The third factor would be the rise of the newly industrialized countries. In Korea, for example,

there is a joint public private strategy in the characteristic of research and development being supported under the guidance of the government, and an approach is encouraged of using the Korean market as a testing ground for new technologies.

In the future, expansion is foreseen in the ICT market overseas such as Brazil, Russia, India, and China (BRICs) but the strong growth in the domestic market cannot be expected to continue with the arrival of a society with fewer children and more elderly people. It will therefore no longer be possible to focus on the domestic market and Japan's ICT industry could find itself on a declining trend. In order to respond to the global markets which will grow in the future, a core strategy has been formulated to strengthen the international competitiveness of the ICT industry through strong cooperation between industry, academia and government.

(2) Goals

In the final report, the strengthening of international competitiveness in ICT is defined as strengthening the competitiveness against overseas industries in the global market

(including the domestic market) of the production and marketing activities of ICT related goods and services from business divisions that are headquartered in Japan (including overseas bases), as well as increasing the ability of the government to support the competitiveness of the ICT industry both in the domestic market and also in the global market which will be growing, and contributing to Japan's economic prosperity and the improvement of people's lives. Three goals were set as shown below.

(a) Years of Strengthening ICT International Competitiveness

The next two years have been designated as "Years of Strengthening ICT International Competitiveness" during which strategic resources will be concentrated and selected and the strengthening of international competitiveness in ICT industry will become reality by the year 2011 thanks to the consolidation of cooperation between industry, academia and government.

(b) Aiming for an industry with a strong global visions

Aiming for the ICT industry to be one of Japan's core industries, just like the auto industry, and to

continue to grow and develop in the future as an industry that is seen as "strong" even from a global viewpoint.

(c) Plan to double ICT GDP

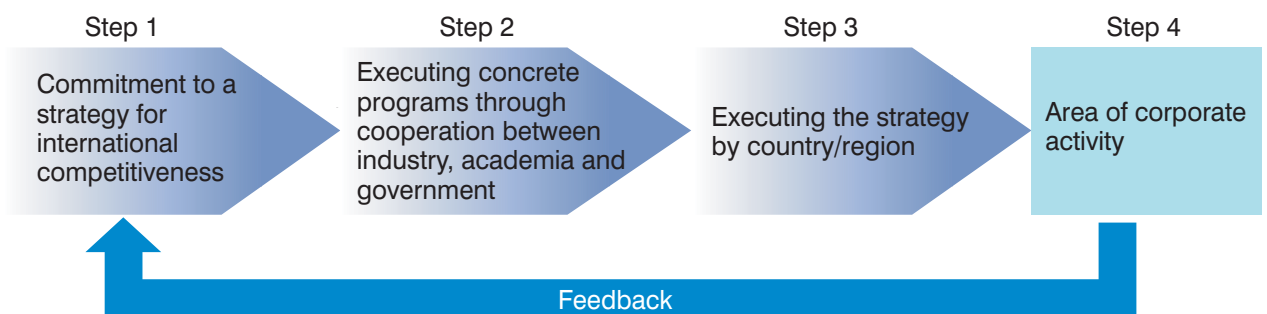
Aiming to double ICT GDP which currently stands at approximately 62 trillion yen (FY2004) to 120 trillion yen by FY2011.

Through these goals, Japan's ICT industry aims to move from being inward looking and dependent on domestically generated revenues to being once again open to the world with an overseas oriented market system, thus strengthening its competitiveness. In addition, this utilization of Japan's strengths will underpin the continuing development of Japan's economy and keep it on a growth track while at the same time making international contributions through coordination and cooperation with various countries around the world.

(3) The basic cycle and fundamental approach

In order to achieve results, it is important to follow a basic cycle that is made up of 4 steps. (Figure 2)

Figure 2 Basic cycle for strengthening international competitiveness



First of all, there has to be a coordinated commitment to international competitiveness strategy from industry, academia and government (1). Secondly, concrete programs featuring a division of labor have to be executed domestically through cooperation between industry, academia and the government (2). Thirdly, strategies must be executed that take into account conditions in various countries and regions overseas (3). The final step will be in the area of corporate activities (4) in which corporations will compete with one another to make the best use of their creativity. The role that the government must play within this is to keep the impetus going until the cycle is under way and to monitor while offering appropriate policy support at each stage of the cycle.

There are four fundamental approaches to activating this basic cycle. They are (1) strengthening international competitiveness by reforming domestic communications and broadcasting, (2) sharing between the private and public sectors a core scenario for increasing international competitiveness that can be visualized, (3) making optimum use of Japan's strengths by concentrating on and selecting fields in which Japan leads, and (4) building win-win international relationships (international coordination and international contribution).

In addition, the following three items come up as areas that should be given particular notice.

(a) Strengthening of an organic and lateral approach in the coordination between industry, academia and government

The government will cooperate with related public organizations in working towards expanding its support for industry and academia, and will invest in a concentrated

manner in policies, until the basic cycle for strengthening international competitiveness is under way. The industrial sector will work hard in a variety of areas including human resources and marketing, to change its perception and move beyond its domestically centered vision, and each company will select and concentrate on areas in which it excels. Universities and research organizations will strengthen their coordination with the industrial sector in research and development and the like, and also will place emphasis on training personnel with an international mindset

(b) Promoting the ICT International Competitiveness Enhancement Program as a package

There are now more policy support measures in areas such as research and development and human resources training than in the past, but there are various individual measures, both separate and vertical.

In order to strengthen the international competitiveness of the ICT industry, it is vital that the necessary measures, determined through concentration and selection, should be promoted in an integrated, strategic and organic fashion. It is with this in mind that the ICT International Competitiveness Enhancement Program was formulated as a general overview of the necessary measures, and it is necessary to implement it steadily.

To do this, the ICT International Competitiveness Enhancement Program was set up as an overall control tower and it is necessary to let it fulfill its role as an overall control tower, to implement steadily the PDCA cycle for the ICT International Competitiveness Enhancement Program and to plan for the system to fulfill itself so that these programs can be implemented gradually.

(c) Strategic international coordination and cooperation, as well as international contribution, to increase power of international coexistence

In order for Japan's ICT industry to develop its business internationally in the future in a fruitful way, the power of international coexistence is vital in addition to the existing approach on increasing international competitiveness.

There is a possibility that products that have been developed specifically for the Japanese market have chased after state of the art advances, fulfilling only domestic needs and are not viable on other global markets. Global markets come in an infinite variety and products that are well-received in global growth centers may be, rather than being leading edge and state of the art, those in which quality is matched to basic functions and price, or the kind of products that are price-driven such as those from China and Taiwan. Consequently, what is needed in corporations' international strategy in the future is the ability to provide products and services that take into account the different stage of development within global markets, differences in consumer sophistication levels, and differences in cultural background. So, the ability to co-exist with the variations in global markets (power of international coexistence) is what determines whether one succeeds or not in these markets.

In addition, looking at it from the supply side, upping the international competitiveness of Japanese corporations, would require a combination of strength in research and development on the part of these companies, strength in product development, and the building of an efficient supply chain. But on the cost and design sides, manufacturers known for high levels of reliability

are appearing overseas also. This is why it is necessary to have the ability to discover the most appropriate combinations of excellent corporate resources and to tie them together in a practical way. Since these combinations of the most appropriate corporate resources change constantly, the key to profit is to have the best timing in changing the combinations. Even from the meaning of the ability to coexist with the variation of these corporate resources, the concept of "power of international coexistence" is an important one.

The strengthening of "power of international coexistence" has always been rooted first in private sector corporations and the role of the government is considerable.

For example, dealing with the shift to networks in providing products and services is a major matter but it is vital, in terms of promoting de facto and de jure standardization to achieve this, for this to happen through the coordination of the three parties (government, corporations and organizations), and it will become increasingly important to form strategic alliances with other countries and overseas corporations. In addition, through the training of personnel with power of international coexistence and a contribution to evaluation information on the management resources which are changing unceasingly in each country, economic support policies that hold a long-term view and strategic technology overseas exchange policies, there will be a search for

strategic cooperation and coordination with other countries and for measures for international contribution to other countries which should lead to building win-win international relations.

The ICT International Competitiveness Enhancement Program (formulated on May 22, 2007)

Having received the final report from the panel, MIC went on to compile the ICT International Competitiveness Enhancement Program as a package of the measures that are important to address. This program aims to increase the competitiveness of Japan's ICT industry in the global markets that will be growing in the future, make a major contribution to Japan's economic prosperity and improve the quality of people's lives, as well as place an emphasis on international coordination and cooperation and build a ubiquitous society where the benefits of the ICT revolution can be experienced.

The program is made up of various measures and includes a basic program which is centered around trigger measures such as "Specified Ubiquitous Districts" and the "Japan Initiative Project", as well as individual programs for concrete approaches such as a program for strengthening ICT research and development, and a program to strengthen ICT standardization. (Figure 3)

For example, in "Specified Ubiquitous Districts," industry, academia and government will work together to make use of

internationally outstanding ubiquitous technology to develop services that will fuse and coordinate fixed communications, mobile communications, contents and applications, as related to the creation of new values, and regulations will be revised as needed to enable testing and the like. From an international viewpoint, there is also a move to go beyond implementation in the domestic market alone and set up "Specified Ubiquitous Sister Districts" that meet specified characteristics in other countries too. Through these specified districts, a new model will be established that can be developed internationally through Japan's initiative, and they are expected to contribute to the realization of a more pleasant life for people.

Conclusion

In the world of today where we are seeing societies with shrinking populations, it is vital to strengthen the competitiveness of its ICT industry, as well as work towards the development of a ubiquitous society in order to steer Japan once again towards economic growth and continue to maintain a pleasant lifestyle for the population.

In the future, industry, academia and government will work together with a sense of urgency to follow closely the global markets that are growing and promote approaches towards strengthening the international competitiveness of the ICT industry.

Figure 3 Outline of ICT International Competitiveness Enhancement Program**Basic Programs**

- o Establishment of ICT International Competitiveness Council
 - A core organization to work on strengthening cooperation between industry, academia and government, and promoting strategies for strengthening ICT international competitiveness

- o Establishment of "Specified Ubiquitous Districts"
 - Putting in place the first environment in the world where ICT services can be developed and used

- o Promotion of "Japan Initiative Project"
 - A project that makes use of Japan's strengths (eg. next-generation IP networks, next-generation mobile phones, ubiquitous terminals and platforms)

- o Development and Putting in Place of Platforms
 - Building of integrated platforms that are cheap, will be accepted by global markets and are easy to use, making use of strengths in elemental technologies

- o Promotion of Core Strategy in Important Fields
 - Promotion of a core strategy in important fields (next-generation IP networks, wireless, digital broadcasting)

- o Strategic Development of "Technology Overseas Exchanges"
 - General and organizational development that is both integrated and united in international coordination for research and development, international standardization, intellectual property strategy, an economic development

- o Promotion of Reform in the Communications and Broadcasting Fields
 - Gradual implementation of a progressive program related to reforming the communications and broadcasting fields.

Individual Programs

- [Programs to strengthen ICT research and development]
- o Allocation of priorities in measures for strengthening ICT international competitiveness
 - o Formulation of priority technology strategy to strengthen ICT international competitiveness
 - o Putting in place and utilizing global research and development locations (Integrated knowledge centers)
 - o Unified strengthening of strategy for research and development, standardization activities, and intellectual property
 - o Strategic promotion of fundamental research and development
 - o Strengthening information and communications software development ability

- o Development of a platform for support of high-level ICT personnel training
- o Support of international exchange and training of overseas personnel at high-school level educational establishments
- o Promotion of use of information technology for education at the elementary and middle school levels

- [Programs to strengthen ICT standardization]
- o Establishment of ICT standardization and intellectual property centers (provisional name)
 - o Putting in place a strategic map for ICT standardization
 - o Selection of ICT standardization experts
 - o Formulating guidelines for the promotion of international ICT standardization
 - o Strengthening of activities by standardization organizations and mutual coordination
 - o Support for corporations' standardization activities
 - o Strengthening of cooperation with Asia-Pacific region

- [Programs to increase software power]
- o More video international broadcasting
 - o Promotion of distribution of contents
 - o Putting in place a system ahead of opening up a distribution network for contents overseas
 - o Shaping new rules with regard to the distribution of digital contents
 - o Building platforms for promoting the development of contents over multiple media

- [Programs to strengthen ICT intellectual property]
- o Formulation of strategy to strengthen ICT intellectual property
 - o Putting in place of ICT patent map
 - o Promoting the utilization of private sector consumer service points

- [Programs to improve ICT brands]
- o Promotion of brand building
 - o Implementation of an ICT Japan campaign
 - o Selecting an ICT brand transmission model

- [Programs to train ICT personnel]
- o Investigation of basic high-level ICT personnel training that would include a framework for high-level ICT training organizations that would have national center-like capabilities
 - o Support for the realization of ICT training using a curriculum and educational materials
 - o Training ICT personnel using research and development projects

- [Programs to support international development]
- o Support from the Headquarters for ICT International Development Measures
 - o Formulation of Index for Strengthening ICT International Competitiveness (provisional name)
 - o Contributing to activities of international organizations
 - o Strengthening cooperation with local industry, academia and government
 - o Supporting the creation of global venture companies
 - o Formulating a master plan
 - o Strengthening coordination with foreign diplomats in Japan
 - o Promoting EPA and the like centering on countries in Asia
 - o Promotion of Asia Broadband Program

- [Support for tax system, finances and the like]
 The relevant government ministries are investigating support measure such as the following:
- (1) System for supporting ICT international competitiveness
 - (2) Government procurement
 - (3) Public finance
 - (4) ODA