

# Net Gains

Wider use of the Internet in Japan is precipitating all manner of changes, from changes in people's daily lives and consumption patterns, through to changes in the way that business is done. In this article we take a look at what Japan should do now that it has a world-class infrastructure with fast broadband connections.

**J**apan has now achieved a world-class Internet infrastructure, thanks to the ICT policies that the government has promoted, and the utilization of this infrastructure is progressing in all kinds of ways, from personal uses through to business applications.

Consider the case of a businessman living in Tokyo. Every morning, he wakes up to the sound of the alarm function in his mobile phone, and then uses this mobile phone to check his email. He then turns on his computer to watch video news and check for responses to the comments he wrote on a social networking site the night before. On his way to work, the businessman touches his mobile phone against the sensor in the ticket gates at the train station, and then uses the game function in his phone to relax while he is in the train. At work, he uses his computer to check the news and the weather forecast, and to check the locations of the clients that he will

visit that day. The businessman works in the distribution business, and the introduction of electronic tags has made the flow of products more efficient as well as allowing distribution to be managed centrally. These changes have made his job a lot easier. After work, the businessman and a couple of friends go for a drink at a bar where he can use his mobile phone's settlement function to pay the bill. As you can see, his lifestyle is dependent on this mobile phone in many ways. Nowadays he can even use this phone to watch television or read the newspaper at work.

Meanwhile, the businessman's wife spends part of her day sending email and talking on the phone. During her breaks, she is also absorbed with Internet shopping and checking auction sites on her mobile phone. She says, "Whenever I go out for a meal with my friends I always go online to look up the place where we're going to meet. I use the Internet

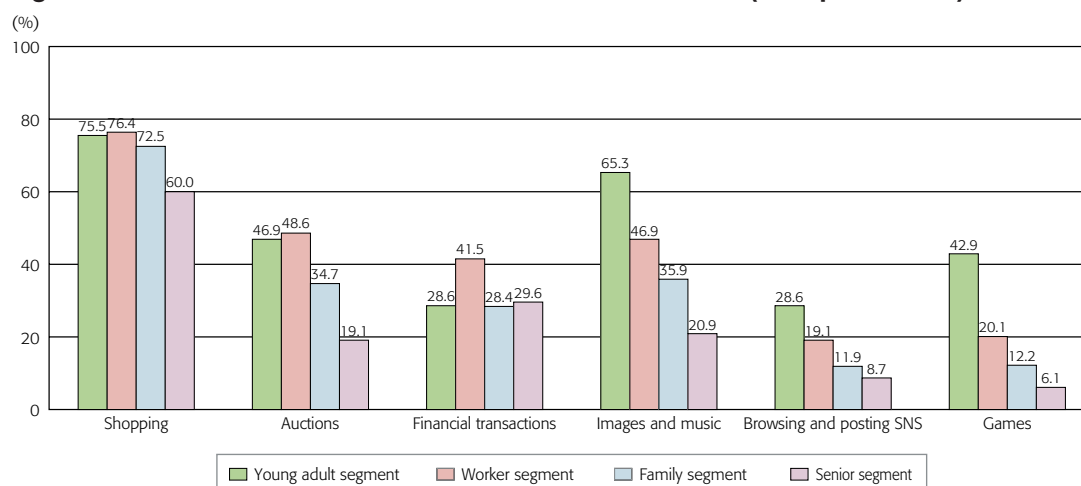
to find out how to get there, what the weather is going to be like, and whether there are any shops there that I might want to check out—as well as looking for a good restaurant." And that's not all. The housewife also uses her computer for Internet banking and to make payments for online auctions or Internet shopping. She reads reviews of books that she's interested in reading, and then orders them online. And she also uses the Internet to buy groceries and other everyday items.

The Ministry of Internal Affairs and Communications conducted a survey which found that working people such as the businessman and his wife described here use the functions and services available with computers and mobile telephones as follows: 76.4% shop online, 48.6% participate in online auctions, 41.5% make financial transactions, 46.9% watch videos or listen to music, 19.1% use social networking sites, and 20.1% play online games (figure 1).

The housewife says, "Mobile phones, computers, and the Internet—everything is becoming more and more convenient all the time. I can't imagine life without the Internet. It would be nice if I could get official forms such as my certificate or residence and my seal certificate online, too."

Companies such as Google and Yahoo are competing fiercely to deliver advanced services that work seamlessly and easily on both computers and on the small screens of mobile telephones. So, just as the housewife

**Figure 1: Most used functions and services on the Internet (multiple answer)**



Source: Ministry of Internal Affairs and Communications

says, Internet businesses are booming but other areas, such as health, education and government services, are still in the process of development.

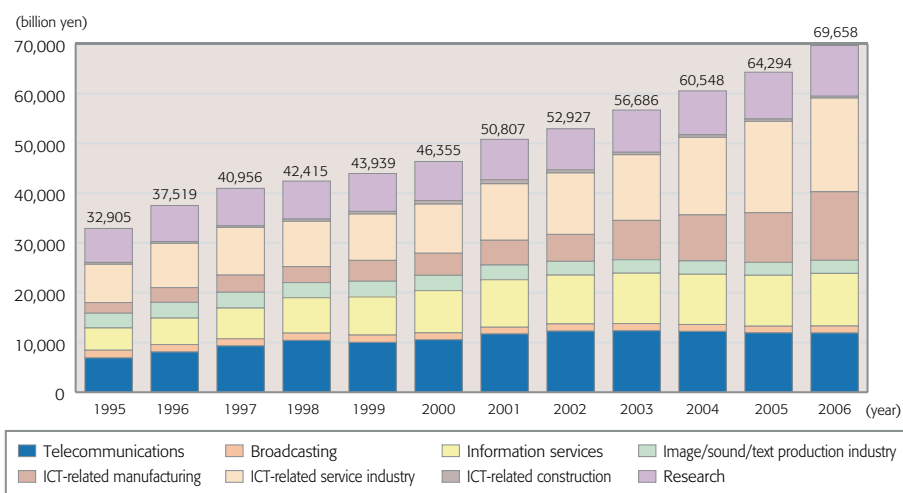
## Overview of the ICT Industry

In 2006, real GDP of the information and communications industry was 69.7 trillion yen, an 8.3% increase on the previous year (figure 2). This figure has grown continuously since 1995, with an average annual growth rate of 7.1% between 1995 and 2006. In 2006, the nominal domestic output for the ICT industry was 95.2 trillion yen, making the ICT industry the largest of all Japanese industries. Looking at the contribution of TFP (Total Factor Productivity) growth rates to the growth in national production, the contribution made by the ICT industry has increased from 1.3% for the period between 1995 and 2000 to 3.3% for the period between 2000 and 2006 (figure 3). These figures clearly demonstrate the growing significance of the ICT industry for the Japanese economy.

The number of users has grown from 11.55 million in 1997 (9.2% of the population) to 88.11 million in 2007 (69% of the population), with the number of broadband connections reaching 28.3 million in 2007 (figure 4 and 5).

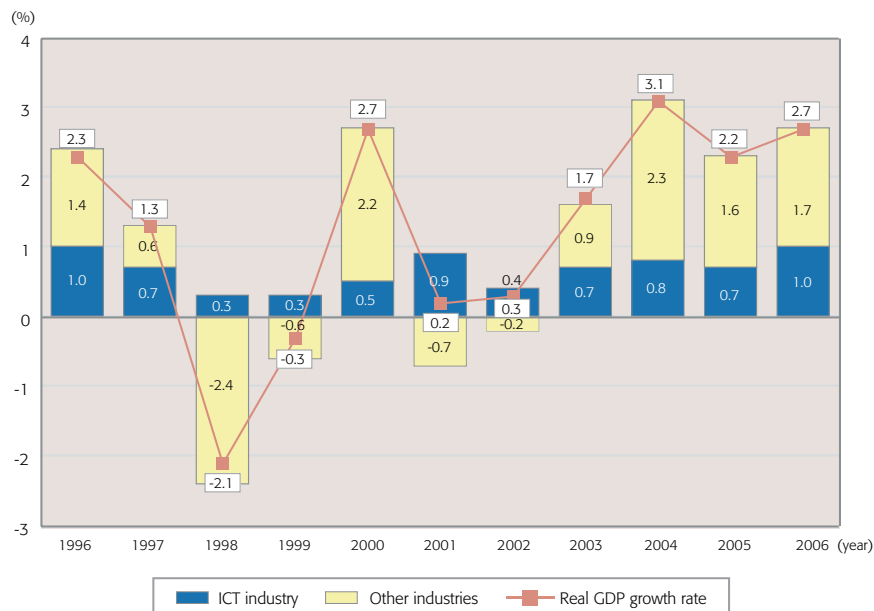
Following the collapse of the bubble economy in 1990 and the subsequent economic restructuring, investment in IT in Japan was flat for several years. During this time, industrialized nations in Europe and North America were promoting IT investment and growing economically as a result of having introduced IT, while in Japan, by comparison, there was a delay. Starting in the second half of the 1990s, companies became increasingly active in their attempts to recover international competitiveness by aiming to improve productivity through IT investments in the same way as Europe and North America. The public and private sectors cooperated to bring about an "IT revolution" in order to catch up with the rest of the world and escape from the economic stagnation that had been dragging on

Figure 2: Transition of real GDP of ICT industry



Source: "Survey on Economic Analysis of ICT"

Figure 3: Contribution of ICT industry to real GDP growth rate



Source: "Survey on Economic Analysis of ICT"

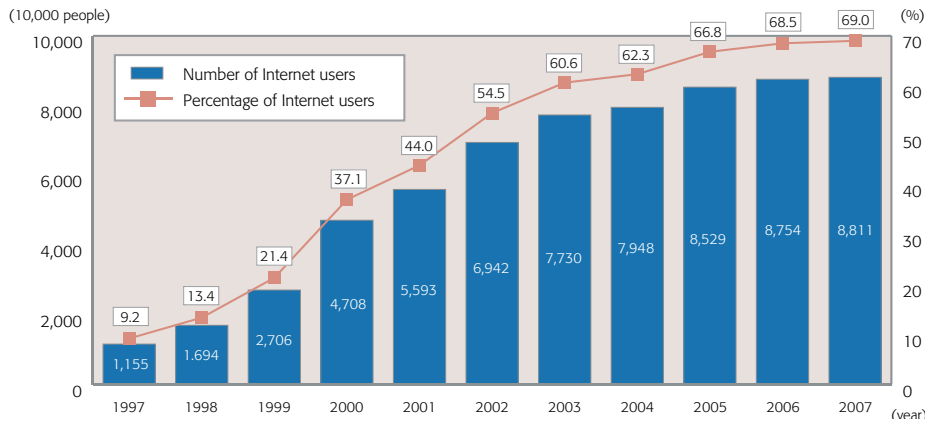
for such a long time.

Then in 2001, the "e-Japan Strategy" was created, with the goal of "becoming a world leader in IT within five years." By 2003, Japan had achieved a world class IT infrastructure, with high-speed, high-capacity Internet connections available at low cost (see pages 14-16). Having reached the first goal ahead of schedule, the Japanese government then created "e-Japan Strategy II" with the goal of promoting new ways of using this infrastructure. The next year, in 2004, the government created the "u-Japan Concept," which aims for ubiqui-

itous networks throughout Japan. By 2010, this u-Japan policy aims to attain a society where anyone can connect to the Internet from anywhere and at any time, with more opportunities to use the Internet and greater depth and diversity in the types of applications available.

However, the objectives of the e-Japan Strategy were not achieved with only a few years of effort. In the years leading up to the bubble economy during the 1980s, Japan's IT industry was never far behind the United States, the leader in all things relating to IT. In 1985, the Telecommunica-

**Figure 4: Transition in the number and percentage of Internet users in the population**



Source: Ministry of Internal Affairs and Communications

tions Business Law was revised and NTT was privatized, opening the way for private telecommunications operators to enter the market. This led to the emergence of businesses such as cable television and VAN (Value Added Network), which was created by adding value to communication channels, such as data processing and protocol conversion. The VAN communications service only handled text information, but it played a big role in paving the way for the Internet as we know it today. Another development that drew a lot of attention at the time was Information Network System (INS) based on ISDN lines, which NTT initiated in 1984, the year before NTT was privatized. This system facilitated two-way communications, such as video conferencing and medical systems. But unfortunately this new media was unable to bear visible fruit, partly because of the low bandwidth and partly because deregulation had not yet advanced to the point where the advantages of the system could be exploited.

## Birth of the Internet

In 1995, ten years after the privatization of NTT and the entry of private telecommunications operators into the market, local municipal governments in various regions started utilizing IT as part of their town renewal efforts, and so 1995 is often called “the birth of the Internet.” These developments had been encouraged by the unique and distinctive ISPs that started to ap-

pear in regional areas as well as in major urban centers, thanks partly to the regulatory reforms that had taken place in the communications industry.

One of these ISPs (Internet service providers) was NewCOARA, located in Oita Prefecture, on the island of Kyushu. NewCOARA had been pioneering efforts to uncover the hidden strengths of regional areas by addressing local communities and encouraging community participation in economically depressed regional cities. The president of NewCOARA, Toru Ono, is a true pioneer who was influential in these developments. He started working on these kinds of activities in 1985 and was actively promoting exchanges both between NewCOARA members and with other communities at the “birth of the Internet.”

Incidentally, trials of the INS system mentioned earlier were conducted in Mitaka City, a commuter suburb not far from NTT’s research laboratories. In 2005, more than twenty years after the INS trials, Mitaka City was voted “the world’s most intelligent community” at the Intelligent Community Forum run by the World Teleport Association (WTA). The experience with the INS concept was a big factor in this decision. Other reasons for the selection were the way that Mitaka City has been able to use its Internet infrastructure to create partnerships with universities and NPOs to promote ICT education as well as small offices and home-based offices.

Keiko Kiyohara, the mayor of Mitaka City, has been saying, “The

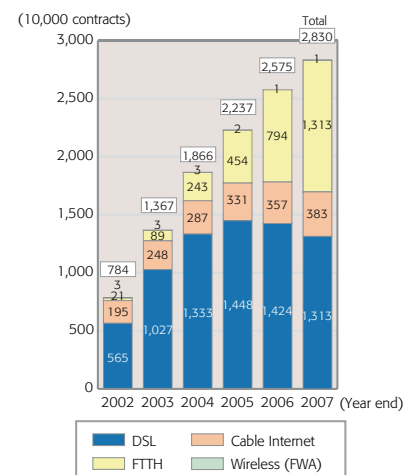
baby boomers are going to come back to the community” since even before the great wave of baby boomers started to retire around 2007. She believes that, even in challenging financial circumstances, the city has an obligation to fully utilize the infrastructure that was voted “best in the world,” and hopes that the participation of the baby boomer generation, with the wisdom and experience that they bring, will add further vitality to the region.

## On and Off

Take the case of an engineer living in Nagoya City, who also coaches a youth baseball team on a volunteer basis. One of his pastimes is to interact with his buddies on a social networking site.

The engineer was born and raised in Nagoya, and almost all of his friends and family live in the Nagoya area, so he is not lacking in interpersonal relationships, but he comments that “The people that I’ve met—the new friends that I’ve made—through the social networking site include a lot of people with very different experiences from those of the friends that I’ve had until now, which makes them

**Figure 5: Changes in the number of broadband contracts**



Note:

FWA = Fixed wireless access. Data transmission via a wireless connection.

CATV = Cable TV. Data transmission through fixed optical fibers or coaxial cables.

DSL = Digital subscriber line. Data transmission over the lines of a local telephone network.

FTTH = Fiber to the home. Data transmission over an optical fiber network.

Source:

Ministry of Internal Affairs and Communications

very interesting to talk to.”

If one of these social networking friends comes to Nagoya then he always tries to find the time to show them around and take them out. The engineer smiles as he says, “Once when I had to go to Tokyo for work during the weekend, one of my buddies was holding an offline meeting to watch a pro baseball game. After that, I caught up with some other buddies from the social networking site. I think about these friends in the same way as I think about my other friends.”

The engineer says that his involvement in the social networking site was a fairly casual decision, which came about partly because the introduction of IT and information sharing in his work place gave him more spare time, and because he wanted more excitement

and to collect feedback from consumers (11.2%).

One example from social networking has become quite topical. In this case “collecting feedback from consumers” (as mentioned above) has led to the creation of new products. A discussion between members of a particular social networking site developed along the lines of “I’d buy a product like this if someone would make it.” Some of these products were actually developed, and placed on a shelf in a convenience store that is known for only holding products that sell well. This shelf included a label saying, “This product was conceived by so-and-so from the ABC social networking site.”

It depends on the particular topics being debated and discussed, but there are new marketing methods that only become possible with the Internet, and these methods can be seen as opening the way to future possibilities. In a related development, there has been a dramatic increase in the number of advertisements in traditional media (such as television, newspapers and magazines) that invite viewers or readers to access the Internet for more information. And of course Internet advertising has also increased by a multiple of more than six, from

59 billion yen in 1990 to 363 billion yen in 2006.

There is also a growing trend for users to move from the four major media (television, newspapers, books/magazines and radio) over to the Internet (figure 6), and there no longer seems to be any doubt that the Internet will become a massive test site for business in future.

To add one more piece of relevant data, as of January 2009 there were 16.9 million blogs published on the Internet, with a total of 1,347 million articles between them. Of these, there are 3.08 million active blogs, with a

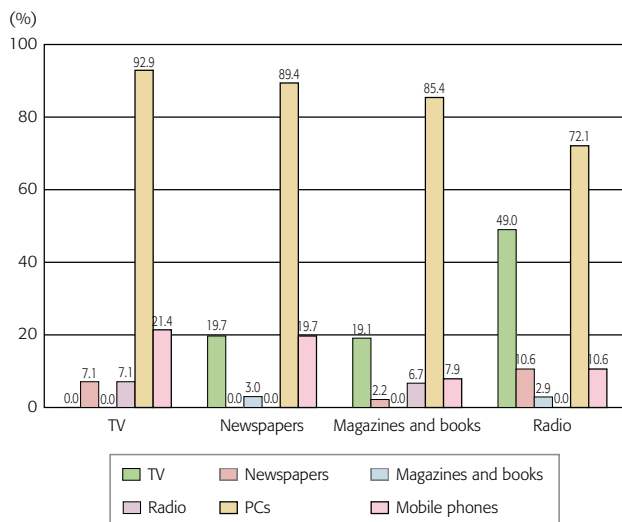
total of 568 million articles. This is one of the factors that have accelerated these kinds of developments.

## Creating a New Force for Growth

To exploit the advantages of ICT so that it leads to economic growth and the creation of new industries, new markets and new employment opportunities while working towards the solutions for these problems will require a sustained effort, especially now that the whole world is suffering from the consequences of the financial crisis. The government’s forecasts for economic recovery are equally grim. Many industry sectors that are dependent on export markets are expecting serious losses, while a few companies that are driven by internal demand are doing quite well. As I said earlier, the telecommunications industry has been playing an important role in generating domestic demand, and has made a stable contribution to economic growth over the last ten years, but it will still face grave difficulties as consumption cools. Perhaps starting with basic infrastructure, including a review is the right way to go after all.

One of the items that Prime Minister Taro Aso raised in his “Economic Growth through Reforms” policy speech to the Diet on January 28, 2009 was, “The world is now facing structural changes seen never before in the history of humankind, such as rapid population growth, the economic growth of emerging nations, and increasing constraints related to natural resources and the environment. In anticipation of the future, Japan will take the lead in resolving the issues the world now faces. Creating products and models conducive to this end will result in Japan’s sustained growth.” He then went on to say, “In the next two or three years, in addition to the integrated pursuit of intensive infrastructure development, research and development, and regulatory and institutional reform, we will formulate a strategy for information and communication technologies to support growth.”

Figure 6: Preferred alternative media



Source: Ministry of Internal Affairs and Communications

ment in his life. It seems that this kind of trend is more common than some people might think.

According to the “Communications Usage Trend Survey” conducted by the Ministry of Internal Affairs and Communications in 2007, the stated objectives for companies establishing a home page, business blog or social networking site included the following: to present company information and recruit staff (85.3%), to present and promote information about products and events (68.6%), to provide regular information (38.8%), to present investor relations information (14.6%),