

Competitiveness Working Group Report

COMPETING OVER THE LONG RUN:
FOSTERING CULTURAL CREATIVITY,
TRANSFER OF SKILLS, AND
INDIVIDUAL ABILITIES

April 2005

Competitiveness Working Group

The Council on Economic and Fiscal Policy instituted an Expert Panel on Japan's Vision for the 21st Century in September 2004. Four working groups were established under the panel: Economic and Fiscal Prospects, Competitiveness, Living and Regional Affairs, and Globalization. All four groups conduct vigorous deliberations across a wide range of issues.

The Competitiveness Working Group (Group Chief Motoshige Ito, Professor, Graduate School of Economics, Faculty of Economics, the University of Tokyo) has met eight times since September 2004; it holds free and vigorous discussions that explore Japan's vision for its economy and society in the year 2030 from competitiveness perspectives. The present report compiles the results of these discussions.

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Summary

Chapter 1. Current Perceptions

Japan's competitiveness is being undermined.

- Japan is losing the capability to adapt to globalization and other momentous changes. If the improvement of domestic systems and institutions is delayed because structural reform itself has been delayed, Japan will fall behind in its participation in regional economic integration and in the formulation of international rules. There is a danger that Japan's economy will then be left behind in the wake of globalization.
- The Japanese people feel an ambiguous apprehension of the aging of their society. It is clear that leaving pensions, health care, and long-term care systems entirely to the public sector will result in an impossibly heavy burden being placed on the people.
- Workers are being progressively dividing into two classes: those who make their living primarily from part-time work (including NEETs—those Not in Education, Employment, or Training), and other young people who have only recently acquired their skills, and who constitute a group that is growing progressively older. There is a danger that the skills and knowledge that have sustained Japan's strength will not be passed on to the next generation.

Chapter 2. Basic Strategy

Make active use of Japan's four potential resources. Aim for a society of universal participation that has competitiveness and that develops diverse capabilities.

Japan has not fully capitalized on its internal competitiveness. It should take steps to utilize the following four resources:

- ① **Utilize traditional resources:** Give fresh recognition to 1) the techniques of absorbing, maturing, and adapting in craftsman-quality manufacturing, and 2) Japan's superior content, in various broad senses, found in animation, food, fashion, and other such fields built on the foundation of traditional culture. By putting these to active strategic uses, Japan will redefine itself as a country that possesses a strong voice in world affairs.
- ② **Exploit inactive resources:** Thoroughly enact the change from government to the private sector, and utilize government resources in the private sector. Cultivate

channels that can build opportunities out of risks and put inactive financial resources to effective use.

③ **Exploit overseas resources:** Expand the flows of people, things, and money between Japan and other countries, rigorously applying the idea of comparative advantage whereby Japan's relative strengths are used so that things that cannot be found in this country are sought in others.

④ **Exploit individual resources:** Create an environment in which diverse, multi-talented individuals can flourish. Improve individual literacy (basic ability to understand and utilize) in economics, finance, and law, to make Japan a country that is served by professionals with specialist knowledge and skills.

The aim is a society of universal participation that has competitiveness and develops diverse capabilities through individuals who possess vital energy in their various respective positions.

Chapter 3. Policy Directions

Put the techniques of absorbing, maturing, and adapting—a few of Japan's major strengths—to use in a wide range of fields. Create a process for expanding and re-producing competitiveness by inheriting skills and developing human resources.

- The techniques of absorbing, maturing, and adapting are put to active use not only in craftsman-quality manufacturing fields, but also across a wide range of fields that include animation, games, and other forms of content, food, fashion, and so on.
- Automobiles and animation both constitute forms of content that Japan can offer with pride as embodiments of "Japanese cool." Formless skills and techniques are converted into the form of objective know-how and applied effectively, while experienced older people are also employed actively.

Capitalize on the appeal of Japanese culture and life with traditional or creative underpinnings, and use it to build competitiveness. Make Japan a world center for culture creation that people in other countries find compelling.

- As the application of information technology progresses, the source of each country's influence is shifting from simple economic strength and physical force of natural resources to life and culture made attractive, which includes knowledge and entertainment. The aim is to capitalize on tradition and creativity in the form of content,

food, fashion, traditional handicrafts, and so on, to make Japan a world center for culture creation.

- Japanese sensibility becomes a world standard, and Japanese content comes to represent an authentic quality that is valued throughout the world. The attractiveness of life and culture in Japan, together with the environment that generates them, attract people and money from other countries. Thus, for example, a version of the Academy Awards for animation is founded, as well as many different personnel training agencies that develop people with creativity.

Identify inactive personnel and financial resources that are “sleeping” in the public sector.

- Japan will reassess the relationship between the public and private sectors, and reduce the involvement of the public sector. The choices available to the public in pensions, health care, welfare, and so on are expanded. The dynamic power of the market is introduced to this sector, leading to the creation of new industries.

- Take steps to change from a state ruled by the bureaucracy, which relies on regulation ex ante, to a nation truly ruled by law, ex post. Improve literacy (the basic ability to understand and utilize information) in the law. Think of what the law should be: whenever a law is outdated, it must be amended without hesitation. Japan also involves itself actively in formulating international rules.

Make active use of 1.4 quadrillion yen in personal financial assets and 700 trillion yen in corporate financial assets.

- Correct the overemphasis on indirect financing and cultivate diverse channels for funding to cultivate a financial market that will also direct financing to sectors that entail risk. The Japanese people as a whole will improve their financial literacy to enable the active use of diverse fund management methods.

- Direct social investment funds into urban improvement, regional development, education, culture, and other such sectors that have been dependent on the national government. Enable investment of this kind to be made from the standpoint of the public.

Use innovation to set the "wave of growth" in motion.

- Science and technology contribute, by means of disease prevention and treatments for

intractable diseases, to raising the healthy life expectancy in Japan to 80 years. They also lessen the physical burden of long-term care by robotics and other such technology. In these and other ways, science and technology alleviate the problems that come with an aging society. Nanotechnology and other such microfabrication technologies will further strengthen Japan's capabilities for craftsman-quality manufacturing. Japan will become a global front-runner in technologies for dealing with aging populations, the environment, and other such issues, and will take the lead in international standards.

- The power of innovation depends largely on the depth and breadth of networking among researchers. By improving development bases and research environments that have international appeal, Japan will bring together superior researchers from around the world. Japan will foster research leaders of the next generation by having younger people participate in funding allocation, expanding peer review, conducting more dynamic personnel exchange, and so on.
- Make active use of experienced older people to serve as instructors in craftsman-quality manufacturing. Train coordinators who will link members of the general public together with experts and technicians. Disseminate innovation in the form of model projects with clearly defined objectives that begin with the public sector and spread to the level of the general public. Such projects include, for example, the conversion of official public fleets entirely to environmentally advanced motor vehicles, and the solar electrification of all elementary and junior high schools.

Chapter 4. Prospects for Society and the Labor Market in 2030

As a society that respects diversity and allows people to try again for success, Japan produces many front runners.

- New value is produced when the meeting of many different human resources and corporations causes heterogeneous elements to combine (the effect of synergy). This gives rise to large numbers of front runners, among them small, single-person enterprises. Japan fashions itself into a society that allows people to try again for success even when they fail, to encourage individuals to take up challenges that involve risk.
- Japan realizes a diverse, multi-talented society where people can work without being caught up in matters of age, gender, time, or place. An environment is improved that enables “two job changes and four education periods in a lifetime” (or more). Steps are taken to improve legal literacy, as well as economic and financial literacy, as part of the social infrastructure.

Japan creates a society that allows people to fulfill their motivations, and thus enhance their individual abilities.

- Japan fashions itself into a society that allows people to fulfill their motivations. Individual members of that society are strongly motivated to take part in it, all from their various standpoints, and they are given opportunities to acquire the capabilities to become fully participating members of society.
- Promote industry-academia collaboration in education by both universities and corporations. Nurture multitalented professionals by a dual approach through acquisition of specialized skills and education for knowledge. Expand systems of qualifications to make Japan into a society that places value on professionals.
- Take measures to create a labor environment for the era of a healthy life expectancy of 80 years. These measures include diversifying employment contracts, establishing work models patterned on cooperative business associations for self-employed people, and taking steps to neutralize the effects on pensions and other such employment incentives. To prevent the formation of two separate social classes, build a society that allows people to try again for success by developing their capabilities.

Main Body of the Report

Introduction

This report is a compilation of recommendations on the future shape of the Japanese economy and the orientation of policy, looked at in terms of competitiveness. The “competitiveness” that we describe in further detail below is one firmly rooted in pluralist sets of values and the pleasures of life, not the homogenous and quantitative expansion witnessed in the latter half of the 20th century.

A competitive society is one in which its individual members have vitality, in which an array of talents flourish; a society, in other words, that enjoys the participation of one and all. The reflection of this cross-society vitality in everything that Japan offers in the widest possible sense – including its industrial products, services, culture and lifestyle – can provide the nation with a potent ability to send out signals to the rest of the world. The spread of information and globalization continues, but there is no guarantee that nations with large economies will be the main beneficiaries of this situation. Rather, it is more likely that the brand cachet of “Japan” will prove to be crucial in terms of competitiveness. It could present a great chance to Japan, which has little hope of indulging in the usual “bigger is better” type of competition because of its declining population.

Bearing these factors in mind, this report discusses manufacturing, cultural creativity, innovation, supply of risk money, and the nature of regulatory and social systems and officialdom from the perspective of a new kind of competitiveness. It ends by discussing the human resources that play the leading role in competitiveness.

Chapter 1. Current Perceptions

The Competitiveness of an Increasingly Fragile Japan

Japan’s competitiveness is in decay. This is probably what most people feel. Japanese society, which grew at breakneck speed following the end of World War II, is entering a period in which birthrates fall and the population ages at a similarly hectic pace. One estimate reckons that Japan’s population will start to decline in 2007, and by 2025

around half of the people will be 50 years old or older¹. It is clear that a number of problems will arise if this situation continues.

The Delayed Response to Globalization

Japan has taken on the challenges of the tide of globalization, and has reaped many benefits from the world economy. But there have been delays in its response to accelerating regional economic integration and to concluding bilateral free trade agreements. In the sphere of inward direct investment too—though we are now witnessing a rise in overseas investment in Japan—the actual rates are still among the lowest of any advanced nation. The fact that Japan's once highly ranked competitiveness has recently plummeted is not due solely to the declining reputation of the government sector; the closed nature of the industrial sector; its rigidity and lack of adaptability are also major causes. This suggests that the Japanese economy is losing its ability to cope with upheavals in the global social environment. By prevaricating over structural reforms, domestic structural improvements to address globalization will become even more delayed, as will Japan's participation in regional economic integration and the creation of international rules, and the nation's economy will be left outside the mainstream of globalization. This would place the overseas ventures and exports of Japanese companies in a relatively unfavorable position, and a great opportunity to enjoy the benefits of trade and investment liberalization would be missed.

Vague Anxieties About the Aging Society

Most Japanese feel a vague fear about the country's aging society. It is clear that if we were to maintain the current pension, healthcare and nursing care—in spite of the speed at which the society is aging—the burden placed on the public will become disastrously expensive. There is also the matter of accumulated government debts to the tune of some ¥700 trillion. The vitality of the Japanese economy will be utterly crushed if we seek to overcome these debts by raising taxes and social insurance premiums alone. On

¹ According to the National Institute of Population and Social Security Research's *Population Projections for Japan* (January 2002 estimates).

the other hand, endlessly vacillating over this issue is sure to lead to the sort of nefarious inflation that many other nations have experienced. Most Japanese now realize that leaving their pensions and healthcare to the public sector will result in an excessive burden on each citizen in the future.

Disconnection of the Processes for Reproducing Competitiveness

As Japanese continues to age, we are starting to witness a hitherto unknown phenomenon in the younger end of the labor market: the emergence of “freeters”—young job-hoppers who don’t stay in one particular place of employment—and “NEETs,” who don’t do any work at all. In general, the people in this layer of the labor market are poorly paid and unlikely to have acquired any skills. One can even perceive a trend in which the Japanese workforce becomes two-tiered, as the average age of this group rises. Perhaps this will make it difficult to pass on to the next generation the assets that have traditionally been the backbone of the Japanese economy — ripened skills and superior service, and a diligent and able workforce. The process of expanding and reproducing competitiveness from generation to generation could be interrupted. Is there any hope for young people in the midst of a situation in which social security and fiscal issues will lead to an overwhelming burden being placed on future generations?

Chapter 2. Basic Strategies

A Latent Flourishing Through the Use of Four Resources

We don’t have to descend into pessimism, however. We are still surrounded by plenty of the factors that spurred on Japan’s former competitiveness. All we need to do is thoroughly understand the essential qualities of those strengths and try to disseminate them across our society. As we explain later on in this report, Japan has yet to fully exercise the latent competitiveness that simmers within the nation. Rather, we are frittering away people and money at an alarming rate and scale. Japan doesn’t need a conjuring trick to improve its competitiveness. The basic strategy is to implement the utilization of the four resources outlined below.

(i) Use of traditional resources

Fully-honed skills in manufacturing and a variety of superb media, such as the animation industry, built around traditional culture, food, and fashion are what lay at the heart of Japan's economic strength. Reaffirming these strengths and using them strategically will help to build a nation that can get across its message.

(ii) Use of dormant resources

The public sector is riddled with dormant people and businesses, and there is a great deal of money that could be put to better use. We need to be thorough in switching from the public to the private sector, where these resources should be put to use. We will nurture channels for turning financial risks into opportunities and for using the huge sums of dormant financial assets effectively.

(iii) Use of overseas resources

While we make the most of Japan's own resources, we will also embrace the philosophy of comparative advantage — looking overseas for the things that Japan lacks — and expand the flow of money, people, and goods between Japan and the rest of the world.

(iv) Use of individual resources

In line with the movement from public to private and then on to the individual, we will create an environment in which varied and versatile individuals can work. And while boosting individuals' economic, financial and legal literacy, we will try to build a country in which professionals who have acquired specialized knowledge and skills work.

Rejecting “Outdated Modes of Competitiveness”

Mention the word :competitiveness: and most people tend to think of the quantitative expansionary economy of the latter half of the 20th century. We must not, however, base our vision on outdated modes of competitiveness. For Japan's mature and increasingly aging society, the nature of competitiveness is different. Postwar Japan grew in an era of homogenous and quantitative expansion. The hierarchy born out of centralist government and regulations, the formation of a homogenous society sealed off from the rest of the world, and the concentration of risk in banks due to a deluge of indirect financing are just a few examples of some of the typical characteristics of this way of

growth.

Like it or not, Japan is likely to go from being a homogenous society to a more pluralistic and varied society. We need to envisage the shape of the new 21st century-style competitiveness, a competitiveness that leads directly to a sense of well-being that cannot be expressed in terms of GDP and growth rates alone. If Japan enjoys this sort of social vitality, the competitiveness inherent in the appeal of culture will help Japan to make its voice heard on the international stage. Without this sort of vision, the government won't be able to formulate the right policies and the people won't be able to make the right choices.

What is a "Competitive Society?"

A competitive society is one in which every citizen can perform his or her own role, a society that enjoys the participation of each and every member. It is not a stagnant society in which everyone carries out a fixed role throughout the course of his or her life. Rather, it is a very fluid society, one that can cope with changes in the socioeconomic environment and satisfy the aspirations of its members. It's a society in which people can exercise their latent abilities by changing jobs, in which the way that people work and industry change flexibly in response to the fluctuations in the global economy's comparative advantages. And it is a society in which the competition mechanism functions according to the laws of the market company, and in which both participation and withdrawal occur at a brisk pace.

In a society such as this, those who lose their competitive edge could of course find themselves facing severe difficulties. Individuals and companies will need to ceaselessly upgrade their work to meet socioeconomic changes. This should not be regarded as some sort of fear of stability. If policies aimed at ensuring equal opportunities are expanded, people will be able to start over again, will have the incentive to get up and have another try. If a fiscal system that can appropriately evaluate risk is created, an environment in which entrepreneurs can try again through venture businesses would be possible. If Japan is to finally graduate from the sort of developing nation-style society based on quantitative expansion, then we need to nurture diversity. The emphasis should be placed on the people's point of view, not on industry's point of view. We need to produce a large number of front runners if we are to create an innovative society.

We cannot of course expect every one to be a front runner. A society in which members can live and work toward his or her own goals is a society that respects diversity. We will try to transform from a society that is like an exclusive convoy into a leading-edge society that respects many different sets of values.

Chapter 3. Policy Directions

This report started with various comments about the dire straits in which Japan now finds itself. But if we take a close look around, there are also signs that Japan ought to be able to maintain its international competitiveness. We will now take a look at these signs of hope and discuss how, exactly, we can carry out the basic strategy of using the four resources that we mentioned in the previous chapter. We suggest the direction that Japan should be the following: reinforcing and passing down to generations the established skills that are the strengths of the nation such as manufacturing; strategically and effectively using Japan's cultural allure; effectively using dormant government resources in more productive areas; diversifying the channels for fiscal assets and revitalizing the economy; and strengthening the scientific and technical prowess that sustained Japan's economic growth to spark further innovation.

(1) Strengthening and Passing on Japan's Well-honed Skills

Extending Japan's Advanced Skills

Japan's organizational capabilities, personified in its automobile and other industries, are not merely a prop for the nation's future industrial competitiveness; they are the country's great invisible asset. Despite the harsh economic circumstances that the nation found itself in following the collapse of the bubble economy, Japanese industry's knack of organizational realignment has in some fields led to even higher productivity levels. These fields include cars, digital cameras, cellular phones, and household electrical goods using advanced technology. The strengths of these industries is found in the integrated efforts that numerous people on the factory floor made toward rationalization of technology and production. It ought to be possible to spread these kinds of well-honed strengths across the manufacturing sector and into other industries.

These skills are already demonstrating their worth in spheres outside manufacturing.

Japan is starting to become accepted throughout the world on the back of all the acclaim garnered by its animation, games, music, films, food, and fashion — “Japanese chic,” in short. The precise and careful traditional skills of Japan are being put to good use in these “soft” industries too, attracting a worldwide audience. The products resulting from Japanese skill are not just “advanced,” “useful,” “durable,” or “safe”: they are the epitome of a technology in which gentleness, pleasure, beauty, and happiness are inherent.

Creating a Process for Expanding and Reproducing Competitiveness

To create a process for expanding and reproducing competitiveness by maintaining and strengthening Japan’s mature skills, manpower training and the handing down of these skills are vital. Be it manufacturing or the production of animated films, with an aging society and increased overseas competition, there is no guarantee that we will be able to easily find the young people to whom the skills that are the envy of the world can be passed on. We need to realize that invisible skills based on years of experience are a valuable intellectual asset, and we must make good use of this experience by turning it into objective know-how that can be shared by anyone, and hand it down to future generations in an organized manner. It is also worth considering a format in which experience and knowledgeable older people can act as instructors to pass on the aspects of these skills that are not readily made objective.

(2) Using Traditional and Creative Lifestyles and Culture to Boost Competitiveness

Competitiveness of Lifestyles and the Attraction of Culture

As the world becomes more and more information-driven, the source of a nation’s influence is gradually shifting from the strength of its physical, technical, and economic resources to its cultural resources — factors such as knowledge and entertainment. As the better part of Asia climbs out of poverty, we will doubtless see these countries start to place emphasis on pursuing pleasurable lifestyles rather than on affluence alone. Thus, as the age of information progresses, the worldwide importance of culture and pleasant lifestyles will grow, and these will become one vital form of competitiveness. Such a scenario is not necessarily advantageous to the economic superpowers. But to Japan, whose dwindling population makes the “bigger is better” type of competition an unattractive prospect, it is a tremendous opportunity. A country that can deliver real

entertainment, based on a unique culture, is one that will appeal to the rest of the world and that can become a culturally creative powerhouse, one that can gain an advantage in lifestyle and cultural attractions.

Using the Charm of Japanese Lifestyles and Culture in Industry

One characteristic of the sort of competitiveness in which lifestyle and cultural attractiveness play a leading role is that it is not controlled on an institutional basis. Rather, it is brought to life by the ample energy that pours out of the daily lives of the individuals of that country or region. This energy is the result of ideas emerging from individuals unfettered by organizations or regulations; it is an energy that enjoys an innovativeness that goes way beyond the bounds of institutional planning and control. Because this kind of competitiveness cannot easily be imitated by other countries, it can be used as an exclusive commodity to lead the world. The culture that has been spreading across the world in the past few years in the form of Japanese chic is giving rise to exactly this sort of competitiveness.

Japanese ideas are becoming accepted throughout the world with Hollywood remakes of Japanese films and samurai stories. Royalties from the overseas use of Japanese ideas are sure to grow in the future.

The attraction of Japanese lifestyles and culture is not restricted to the field of entertainment. Contemporary Japanese cartoons and animation are said to show the influence of *ukiyo-e* and scroll pictures, and there are many other Japanese traditions and cultural features that could lead to competitiveness. Japanese food is the one aspect of Japanese life that has been most widely diffused throughout the world; its healthiness makes it competitive against the cuisines of other countries. In the fashion arena too, the creativity of Japanese designers, and the art of kimono and indigo dyeing are renowned throughout the world.

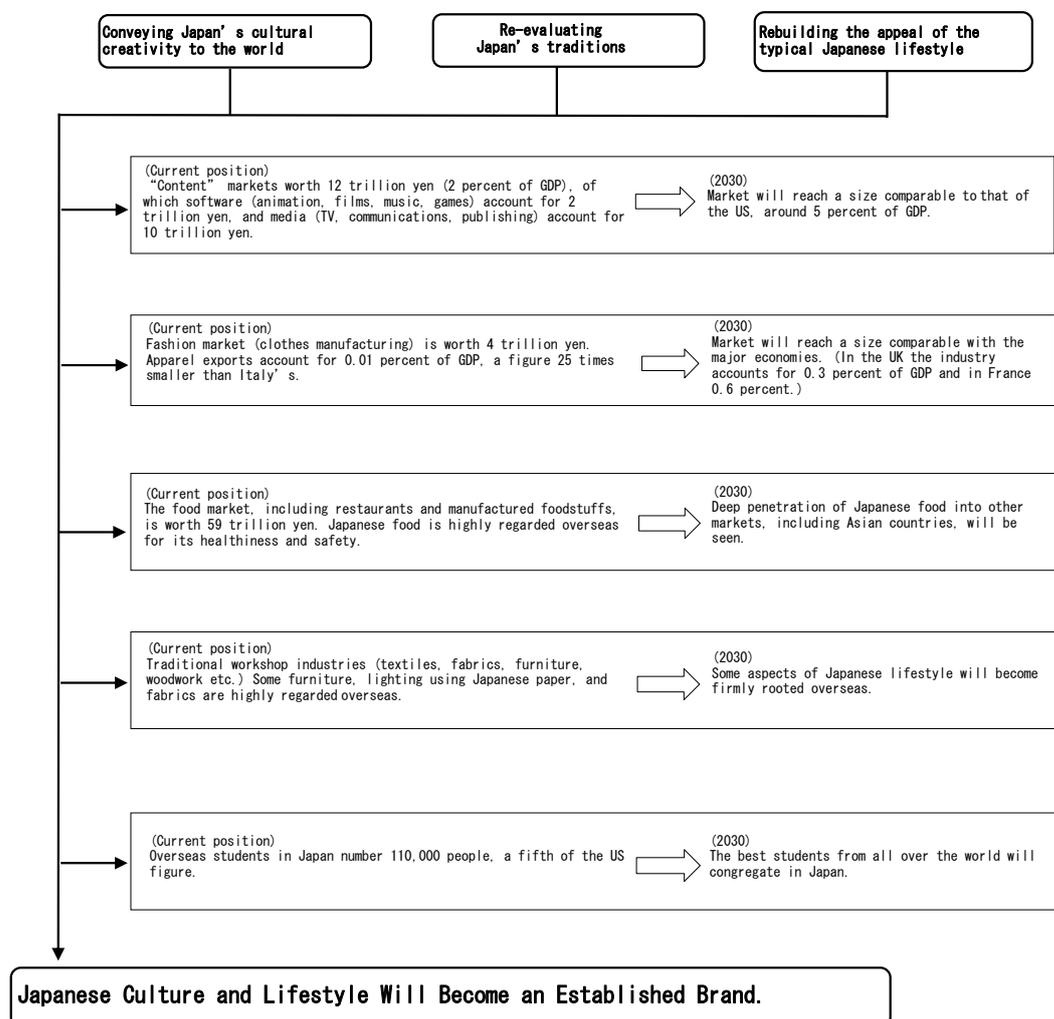
Since they reflect Japanese culture, cars and household electrical goods are also part of the Japanese menu. The “made in Japan” mark is a brand that the nation can be proud of, a sign that has come to mean a quality product. Japanese electronic products, polished, seamlessly and neatly packed, Japanese cars with their resilient bodies, the way their ever shining paintwork is applied: the very manner with which they are manufactured is the source of the competitiveness of Japanese products. In addition to

these industrial products, traditional Japanese arts that have been given a contemporary twist have enjoyed international acclaim. Because of their superb design, the charm of workshop industries such as textiles, woodwork, furniture, and Japanese paper, which have been bitten by a flood of cheap overseas imports in Japan, is being recognized once more overseas.

The importance of the global spread of Japanese products and services lies in the fact that this will lead to Japanese sensibilities becoming a world standard. This will represent the worldwide recognition of Japanese ideas and products as being the “genuine article.” It is not difficult to imagine people who have been tempted by Japanese food coming to the country to enjoy the real thing, and consequently becoming even more entranced by the country’s whole culture and way of life. This means that Japanese culture and lifestyle themselves are recognized as a global brand, that the lure of Japan itself is a crucial tourism resource. The essence of the competitiveness of these cultural and lifestyle attractions lies in the resources of that country gaining recognition as being the genuine article among the myriad products and services on offer around the world. The question of how Japan is perceived by other countries depends on the competitive strength of its lifestyle and culture.

A look at the extent to which the attraction of Japanese culture and lifestyle contributes to the economy suggests that the narrowly defined “content industries” of animation, films, music, games, and the media market currently account for around 2 percent of GDP. This figure is smaller than that of the United States and other countries, but as the generation that has been accustomed to these media since an early age grows older, we expect the industry to grow into one accounting for at least 5 percent of GDP by 2030, a similar figure to that of America. We also expect food, fashion, and traditional workshop industries to enjoy an increasingly healthy overseas presence.

Lifestyle and Culturally Creative Industries: Today and in the Future



NB "Content" includes the following:
 software (animation, films, music, games, etc.);
 media (TV, communications, publishing).
 "Fashion" includes the clothing manufacturing industry.
 "Food" includes manufactured foodstuffs and restaurants (including catering, lunch boxes, and food retailing).

Sources Contents: Ministry of Economy, Trade and Industry's *Digital Contents White Paper*.
 Fashion: Ministry of Economy, Trade and Industry's *Industrial Survey*, WTO's *International Trade*,
 Institute for International Trade and Investment's *International Statistical Comparisons*.
 Food: Food Service Industry Research Center's *The Size of the Food Service Industry Market in 2003*,
 Ministry of Agriculture, Forestry and Fisheries' *Survey of Distribution and Production of Processed Foods*.
 Education: Ministry of Foreign Affairs' *Overseas Students Acceptance Policies in the Major Countries*.

Japan's Attractiveness as a Center for Global Cultural Creativity

The benefits of the competitiveness of an attractive culture are not just limited to the creation of domestic and overseas markets. If it gains global attention, a country with an appealing culture will then see an inward flux of people, goods, money, and information from around the world as the search to exploit the opportunities available begins. This will in turn lead to a build-up of knowledge and subsequently the birth of even stronger competitiveness. The appeal of Japanese lifestyle and culture—as manifested in its animation, food, and fashion—attracts people from all over the world. Perhaps an animation academy or some other similar global base will be created, and it is quite possible that we will see the establishment of a number of institutions for training the young talents of the future. This could include the establishment of specialist schools that teach young illustrators and scenario writers from around the world, or the provision of specialist courses at art colleges. These institutions would also need to teach students how to make their businesses as profitable as possible, offering managerial know-how rather than just skills. By recruiting specialist teachers and providing a forum for the fostering and passing of skills, the guarantee of a steady income will make the prospect of being involved in the businesses even more appealing. This approach could be applied not only to animation but also to other businesses rooted in Japanese culture such as food and fashion. People are attracted by the genuine article; and the genuine article evolves. Using the power of this evolution, Japan must move away from being a country that reacts to change and start to be a country that is the instigator of change.

(3) A Second Look at the Relationship Between Government and the Private Sector

Japan is rich in tangible and intangible assets. Sadly, these are not being put to their best use. If we can resurrect the dormant manpower and finances in the public sector, we can add further vitality to the Japanese economy. We must eliminate the danger of the present generation's comfort becoming the next generation's burden. The present generation will have to build its own prosperity by putting to use the resources currently available. The switch to this kind of system will necessitate a re-examination of the relationship between the government and the private sector.

Let's take a look at the current example of the government's efforts to privatize the

postal service. The postal service employs 270,000 staff (around 30 percent of the number of public servants²) handling around 340 trillion yen in savings and insurance across approximately 25,000 post offices — a massive operation in terms of manpower and assets. While the postal service obviously performs a vital role, the important point is whether or not it is maximizing its manpower and financial resources. Utilizing the manpower available means gaining the full-blooded effort of every single employee; utilizing financial resources means putting them to work in the most productive places. If this sort of effective use of financial resources can be achieved, the services that the postal operations provide to the public cannot only be maintained, they can actually be hugely improved. That is the rationale for privatization of the postal service. With this sort of competition, we will finally start to achieve the vitalization of the use of resources.

Scaling Down the Public Sector

The privatization of the postal service is just one example. We will not be able to revitalize Japan without a review of every single aspect of public sector activity. As mentioned at the beginning of this report, if we try to maintain the current pension, and the medical and welfare systems in their present state—in the face of the rapid onset of low birth rates and an aging population—Japanese society will be crushed by its bloated public sector.

A society in which all the citizens participate does not mean a society that leaves everything up to the public sector. Rather, it is one in which the citizens are given more room to make their own decisions. Take pensions for example — there can't be many people who would expect to finance their old age solely with public pension payments. Though it may have worked in the days of high economic growth, maintaining this sort of stance as we approach an age of dwindling birthrates and an aging population will only lead to further burdens being placed on the general public. While some very basic forms of public pension are necessary, it is vital that we persuade each and every citizen to take his or her own steps to protect themselves in old age, and public systems

² A look at the personnel levels at the end of the 2004 financial year shows that Japan Post employed 271,000 people, there were 303,000 public servants (excluding clerical workers), the Self Defense Agency employed 277,000 personnel, and the number of personnel working in Japan's various Independent Administrative Agencies was around 65,000.

have to change so that they offer support for these steps. The idea that the government should finance everything is an outmoded concept. As birthrates drop and the population grows older, generational gaps are widening, but each generation has to take on its fair share of the responsibilities.

In fields that are inextricably linked to the people's everyday lives—pensions, healthcare, welfare, and education, to name but a few—reducing the involvement of the public sector, leaving choices to the people, and injecting the vitality of the market into these sectors will lead to the creation of new industries and economic values. Healthcare, welfare, education, and other service sectors already account for more than 70 percent of Japan's 500 trillion yen GDP. Revitalizing these is the key to boosting Japan's overall competitiveness. Revitalizing the service sector would also result, for the first time, in a high-quality lifestyle and steady employment being guaranteed for the citizens of Japan.

The New Sort of Public Sector Needed in Japan

To avoid any misinterpretation, let us clearly say that the need for a re-think of the relationship between government and the private sector in the public sector does not mean that the state is unnecessary. We should verify the main roles that citizens should play in the fields of postal services, pensions, healthcare, welfare, public facilities etc., while the state should be limited to providing the bare minimum of the services that cannot be offered by the private sector. To clarify this division of roles between the government and the private sector, we need to run periodic market tests to prove whether or not the government should be responsible for various tasks. The government should also be responsible for explaining—through policies based on objective and factual evidence—those measures that continue to be part of its remit. We also need to inject the vitality of the private sector into the public sector. Even if the state has ultimate managerial responsibility, if the private sector can carry out the work, it should be left to do so wherever possible in a sort of “publicly funded, privately run” arrangement. As far as the areas left to the public sector that require a high level of expertise are concerned, we must train professional government officials to be professionals with specialist knowledge and skills through the enthusiastic use of people from the private sector and through mutual exchange between public and private sector manpower.

Though the state has long been involved with private enterprise through the regulating

and surveillance of each industrial sector, this is also a situation that demands to be rethought. In a day and age in which the originality and ingenuity of the private sector leads to the creation of whole new industrial sectors, the government shouldn't just regulate within the hitherto framework; it needs new rules, rules that will guarantee the promotion of healthy competition and a level playing field. As we can see in the wave of technical innovations being made at companies that have been exposed to fierce international competition, it is important to encourage competition with a vision that cuts across the whole industrial spectrum. It is also important that government bodies are obliged to treat competition policy as a high priority, and that mechanisms for its promotion are developed. This approach means that rather than choking the all-important private sector with regulations, the rules should be clarified and fair and transparent competitive conditions secured. The formulation of these rules should not be the exclusive remit of the government — the positive participation of the private sector in rule-making is desirable. There have recently been an increasing number of cases in which the private sector has taken the government to court on the grounds that its regulations or policies are unfair. Regardless of the details of each particular case, the spectacle of the private sector taking a swing at the state is a thoroughly healthy state of affairs.

Changing from a Country Ruled by Officials to a Country Ruled by Laws

Though it is perhaps overstating the case somewhat, Japan really needs to change from a country ruled by officials to a country ruled by laws. As the nation moves away from a society based on preliminary regulations toward a society based on follow-up checks, and the emphasis changes from public to private, rules and laws become increasingly vital. Unless we put in place a proper structure in which all citizens observe the rules and are punished if they don't, then the "follow-up check" society will descend into the realms of irresponsibility and anarchy.

The altering or revision, with the public's understanding, of any unpersuasive or out-moded rules would obviously have to be a precondition. The fact that a rule has to be obeyed does not lie in the intrinsic value of the rule itself but in the value of what the rule achieves. In this sense, we need to take another look at the nature of law so that it fits the society we seek to achieve, and not merely try to run our economic society within the existing framework. We also need to make the public realize that it is *they* who are the instruments of law-making. A bold change is necessary in the perception that law is something that is handed out or thrust upon the people, that legal battles are

troublesome and far-removed from people's everyday lives.

Public participation in law, as typified by the jury system, is one effective way of achieving this. It is important that throughout their lives Japan's citizens learn about legal thinking and the nature of society's rules, and improve their legal literacy—their basic ability, in other words, to understand and make use of information. Another crucial issue is providing the public with legal services so that they have access to information whenever and wherever they need it — clarifying rules and making them easier to understand, easing public access to legal professionals, for example. In addition to providing more legal experts, we must urgently set up a comprehensive legal support network that will help people to find out where they can turn to for what kind of advice.

At the public's perception of the law matures, we will also need to continually reexamine society's rules, and ensure that mechanisms are in place for the revision, change and creation of these rules. Proper mechanisms for checking that rules are not violated and for punishing those that violate them must also be put in place. On a national level this means that legislative bodies must function properly, legislature suited to the changes in society must be created without hindrance, and that the bodies responsible for enforcing the law in areas such as law and order, taxation, and immigration control must do so in an adequate manner.

Taking the Lead in International Rules

Achieving fair and transparent rules is important if Japan is to enjoy international competitiveness. Since the progressive globalization of the world economy had led to the activities of Japanese companies becoming restricted in certain areas by various standards and regulations, Japan needs to play an enthusiastic role in the creation of these rules instead of merely being at the mercy of them.

On the other hand, Japan needs to prepare its own laws from an international perspective as well as becoming involved in the preparation of international rules. There are many fundamental problems such as the fact that Japanese laws have not even been translated into the English language, and that despite its status as an advanced nation Japan has no rules regarding adjudicative jurisdiction. This vagueness about adjudicative jurisdiction means that if, for example, a Japanese company was involved in a legal dispute with an American company in China, no expressly written

law exists regarding whether or not a Japanese court of law could hear the case and settle the dispute. In other words, Japan does not present its own rules in a comprehensible and clear manner, neither to the international community nor to its own citizens. The way that Japan's legal system regarding international relations lags behind other countries and the fact that its rules appear to be obscure to outsiders are probably behind the nation's inability to exercise its strength in the formulation of international rules. Japan will have to clarify its own rules and then make them clear to the rest of the international community if it is to have more of a say in world affairs. And if in doing so Japan is to be able to describe its rules as being fair, then the system it uses to formulate and evaluate policies needs to be based on objective and factual evidence. We also need to think strategically and consider, for example, dispatching personnel to work at international organizations to enhance Japan's voice on the world stage.

(4) Excavating Dormant Fiscal Resources

With personal savings of 1.4 quadrillion yen and 700 trillion yen in corporate financial assets, the financial resources of the Japanese people are the largest in the world. The balance of payments surplus accumulated over the years also makes Japan a world class external investor.

The trouble is, these financial assets are not being used effectively. As the population starts to decline, Japan will have to improve its fiscal functions and distribute its capital more effectively if the nation is to maintain economic growth. The stuttering course that the financial markets followed after the collapse of the bubble economy revealed how they had fallen into a state of functional failure. Now that the disposal of bad debts finally appears to be achievable, we need to take a look at the nature of Japan's finances from a long-term perspective. The privatization of the postal service is one step toward this financial reform. And in a wider sense, it is important that we seek to redress the excessive emphasis on indirect financing such as bank and postal savings.

A Financial System That Turns Risk Into Opportunity

A dynamic society is one that is able to appropriately evaluate and absorb risks. We need to build a financial market in which funds are properly injected into risky areas and economic vitality is augmented. Correcting the excessive bias toward indirect financing entails effectively using funds while sharing the risks, something that can be achieved by nurturing a variety of investment channels.

Let's take a look at the concrete example of real estate investments. From the years of rapid economic growth to the days of the bubble economy, the money deposited with banks was lent out in the form of loans to finance massive real estate investments. The thinking behind this was that the individual depositor would not be exposed to risk, the risk being borne by huge corporations such as the banks and real estate companies. Unfortunately, the delusion that large corporations can absorb risks was dramatically shattered as the bubble economy imploded. Real estate risk led to the collapse of financial institutions, and eventually it was the Japanese public that was left shouldering the burden.

In the latter half of the 1990s, measures were taken to securitize real estate. Real estate risks were minimized where possible through securitization, in an attempt to spread the exposure of the public and investors. As well as vitalizing the inherently risky field of real estate investment, it provided the public as investors with the chance to invest money in a way that had the prospect of returns as well as risks. The highly transparent financial method of security investments became established, and led to the encouragement of overseas investment

Real estate investment is but one example. The goal of fiscal reform is to appropriately evaluate risks on various levels—venture businesses, small and medium-sized businesses, R&D, overseas investment, capital expenditure—and build a system in which money flows smoothly. And if the venture business environment develops further, we will surely see a society in which entrepreneurs are prepared to take risks and to try again.

Reforming Corporate Governance

Now let's take a look at investments and loans for business. The deterioration of loans to businesses is inextricably linked to the failure of financial institutions to properly analyze the cash flow of projects or to evaluate their risks, and the fact that the loans were excessively reliant on real estate collateral. The failure of the corporate governance system to function clearly within companies, and the indiscipline in offering loans inherent under the a "main bank" system are behind the way that many businesses that carried out a restructuring plan in conjunction with their main bankers from the 1990s onward repeatedly prevaricated over resolving their affairs.

Corporate regeneration and fiscal regeneration are different sides of the same coin. If

companies create their own internal corporate governance, and private-sector financial institutions and investors provide funds and monitoring, companies will regenerate and grow, and they will gain the participation of more investors. Aiming for this sort of corporate development, private financial institutions and investors take risks after evaluating the pitfalls of a potential project — and reap the rewards. Creating a relationship in which companies, private financial institutions and investors run mutual checks upon each other is an important feature of the reform of the financial system.

Improving Financial Literacy

Of course, the Japanese public should not put all its money into risky investments. As the population ages, the need for asset management—with an emphasis on stability, rather than profits—will also increase. The important thing is to raise the level of the public's financial literacy so people can make the most of a variety of investment options, and provide them with a wide variety of choices. Affluent lifestyles will not be created in an aging society unless people use their assets efficiently. And as the public becomes more financially literate, so will the financial markets become increasingly vitalized.

Use of Social Investment Funds

Japan's abundant financial assets offer the nation massive potential. It is tempting to think of financial assets in terms of the use for investments made by large corporations, but if Japan is to continue down the path of the major world economies then it needs to broaden the way these assets are used. The loans available to individuals have tended to be concentrated on house loans, but these should be extended to include education and the acquisition of skills, community activities and social infrastructure to name but a few.

In fields where it is difficult to make a profit on a private sector basis, investments can be made using markets mechanisms like social investment funds. Urban improvement, regional revitalization, education and acquisition of skills, cultural activities and so on—all these were once reliant on the public sector, from funding through to management. Today, however, the use of social investment funds allows a much more citizen-oriented form of investment.

In the past, the unspoken knowledge that mistakes would not be tolerated loomed over

all the projects initiated by the government; the plug was pulled on many of the projects that looked destined for failure, resulting in a flood of “white elephants.” Risk is inherent in any project with potential, and to make the most of the opportunities we have to use risk-tolerant capital such as social investment funds.

(5) Triggering Innovation

As Japan changed from being a high-growth society to a mature society, perhaps somewhere along the way the Japanese people became excessively pessimistic about the future. But such a stance is unwarranted: depending upon how one looks at it, Japan’s future is decidedly rosy.

If one looks at economic growth from a long-term historical point of view, it is possible to paint an extremely optimistic picture of our future. From the birth of Christ to the 17th century, mankind’s growth was somewhere around the zero mark. The standard of living of a 1st century Roman hardly differed from that of a 17th century French citizen. But from the 18th century onward, average incomes in the advanced industrial nations have multiplied by the hundreds.

It was successive innovation that engendered this growth, the ripples of which grow steadily to this very day. Worldwide growth rates continue to rise: they were higher in the 19th century than in the 18th century, higher in the 20th century than in the 19th, and higher in the latter half of the 20th century than in the first half. And today we are seeing the arrival of all sorts of technological innovations unfold before our eyes.

The Current State of Science and Technology in Japan

Innovation is an absolute imperative in a country that suffers a lack of natural resources and an aging population. Japan expanded its economy by being the first to turn technical innovations into commercial products, from transistor radios to digital appliances. At the root of this are: the Japanese aptitude for manufacturing, the ceaseless pursuit of technical innovation inherent on the factory floor, and the imaginative superimposing of information. The very paucity of resources in Japan itself led to ingenuity and technical innovation. Now, in the midst of unfamiliar and drastic problems such as environmental issues, a dwindling birthrate, and an increasingly aging society, Japan will have to use these assets as a springboard to pursue technical

innovation, thus supporting the economy and overcoming the problems that the nation faces. The seeds of cutting-edge science and technology of the future have already been sown in most sectors, and their first shoots are just starting to show through. The current standard of research in Japan measures up against European and US research in many areas. Information and communications, the environment, nanotechnology, and materials are just some of the areas in which Japan has gained the upper hand. Japan does lag slightly behind in other areas, such as space development, but even here the use of satellites has led to the development of applied technologies, such as fish detection equipment, that go beyond the realms of car navigation equipment.

Future Prospects for Science and Technology

We expect that an array of new technologies will be brought to fruition and used in society by the year 2030. In addition to exerting a great influence on Japan's competitiveness, technical innovation will also be a key factor in solving the issues that the country will shortly face: environmental and energy restrictions, and the aging of Japanese society.

As environmental and energy restrictions become even more severe, alternative sources of energy are sure to arrive. In addition to the spread of fuel cells, a technology that is currently becoming more practical, hydrogen technologies—which do not emit greenhouse gases—are likely to become cheaper, and virtually all vehicles will be environmentally friendly. We also expect that Japan, a country that is poor in terms of land-based resources, will successfully develop the vital resources now lying dormant in the seabed around its coast.

As birthrates dwindle and the population ages, pharmaceuticals, treatment for serious illnesses, regenerative medicines, and artificial organs developed using life science technologies will become more commercially viable, and Japan's renowned robots will surely play a part in caring for the frail and in doing chores around the home.

Moreover, nanotechnology will become widely used on the shop floor and in the development of materials, thus further enhancing Japan's manufacturing prowess, and helping to make a technologically advanced society a reality. This will be a society in which people can work in many different ways and without being tied down to a single location, a society that achieves a comfortable balance between work and life.

Issues That Must Be Addressed to Ensure Technical Innovation

Achieving technological innovation in areas such as IT, the environment, energy, life sciences and nanotechnology, reinforcing the strong points, and improving the weaker ones will provide the backbone for the maintenance of Japan's international competitiveness. But a look at the state of Japan's R&D shows that the amount the private sector investment in research declined following the economic stagnation of the 1990s. Moreover, as society ages and the number of researchers decreases, we need to be aware of the fact that gaining on China, Korea, and other Asian countries may prove difficult, and that we face a severe situation. If Japan is to maintain its international competitiveness, we need a system that will prioritize and rationalize the way that the limited public research resources are distributed, a system that will invest in research — including in basic areas — from a long-term point of view, and which ploughs back the fruits of this research into society and the private sector. The number of areas in which basic research rapidly leads to technical innovation is increasing, and the robustness of the network created by universities, corporations, and the other leaders of technical innovation exerts a crucial sway on the innovative prowess of that country. Furthermore, it is vital that the right environment is put in place for society as a whole to promote technical innovation. As we develop research centers that appeal to the international community and attract outstanding researchers to Japan, we must also endeavor to keep our key technologies at a world-class level. And while it is clearly important that in the case of certain technologies (such as life sciences) we need to take into account safety considerations and social ethics, we also have to make ongoing reviews of the regulatory environment in line with the pace of technical innovation so that R&D is not stifled by outdated regulations. The format for science and technology policy must also transcend the ministries and agencies responsible and be a concerted effort aimed at a common goal.

Technological Challenges Expected To Be Solved

Addressing the environment and energy restrictions

- 2010s · Virtually all interior lighting will derive from semiconductor light sources.
- 2020s · Cars, ships, and other modes of transport will run on fuel cells.
 - A hydrogen supply network for fuel cell-powered vehicles will be created.
 - The use of natural energies such as solar power, wind power, ocean thermal energy, and biomass (organic material other than fossil fuels) will become widespread.
- 2030s · Techniques will be developed to exploit the methane hydrate deposits under the ocean floor.

Addressing Japan's aging society

- 2010s · A nursing robot that alleviates the unpleasant aspects of bathing the elderly will be developed.
- 2020s · Every home will have a "housework robot" that carries out chores such as cleaning and washing.
 - Effective immunologic treatments and genetic therapy for cancer will be available.
 - Food and eating methods will be developed that help to prevent problems that elderly people are prone to, such as declining antioxidants, cerebral and masticatory functions, and will ensure good health among senior citizens.
 - Medicine to completely eradicate Alzheimer's disease will be available.
 - Systems will be developed that curb the decline of elderly people's mental faculties and prevent cognitive diseases.
- 2030s · Organ transplant operations with no rejections or other side effects will be available.
 - Artificial organs such as pancreas containing human cells and tissue will be available.

New industries and ways of working

- 2010s · The majority of mobile goods will be powered by fuel cells, and 'one-chip' ubiquitous computers will allow people to swap information anywhere and anytime.
 - In order to cut R&D and design time and boost competitiveness, digital mock-up technologies for evaluating all the evaluation items of products will be developed.
 - Techniques will be developed to examine individual atoms and molecules.
- 2020s · Manufacturing processes will be developed in which measurements and shapes are controlled with a precision reaching a single nanometer.
 - Micro-telecommunications chips and sensors with semi-permanent operating lives that run off energy sources such as heat, light, radio waves and noise will be developed.
 - The production system based on a 'design-production-use-disposal' cycle and the resource recycling system based on a 'collection-breakdown/selection-reuse-production' cycle will be combined in a seamless concurrent manufacturing system.
 - Techniques will be developed to assemble organic, non-organic and metallic materials at the nano level.

Source: *A Forecasting Survey of Medium-term Progress in Science & Technology* (2005 provisional edition), compiled by Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology

How to Distribute Funds and Support Young Researchers

We clearly need to define innovation in the broadest possible terms. Though the importance of cutting-edge technologies is obvious, rather than restricting our energies to these we must encourage a wide range of innovation. Innovations that reflect Japan's aging society, that emphasize the environment, and that reflect the direction in which the nation is moving are vital, too. Innovation requires actions that will lead to new technologies and knowledge, but it also needs mechanisms to ensure that these are passed on to society at large.

The government has already come up with a strategy to make Japan a powerhouse of scientific and technological creation and intellectual assets; it now needs to speed up the measures it has drawn up for cutting-edge technologies. Although a number of schools of thought exist on which specific research areas public funding should be concentrated, we must also pay attention to the important research areas other than the four that have been selected for prioritized treatment by the government. The right to distribute public funds should not be concentrated in the hands of one single group of people; to achieve the most competitive allocation of funds, we should include a variety of researchers, including younger people, in that decision process. By reforming the peer review process, for example, we should expose a broad spectrum of researchers to all sorts of new information, and make it an opportunity for them to gain fresh perspectives. Japan must make a wholehearted effort to bolster the support given to the young researchers who will be the leaders at the forefront of tomorrow's R&D.

Other important measures that should be taken to support innovation include 1) the creation of a system in which young researchers can exercise their talents regardless of age, gender, or nationality, 2) the provision of incentives so that university researchers, particularly younger ones, seek work in the private sector, and 3) the rejuvenation of personnel exchanges. To cope with the decline in the number of researchers available due to dwindling birthrates and to the plummeting basic scholastic skills of the generation that will supply the researchers of the future, we must provide adequate science and mathematics education and seek to heighten public interest in science. We must also consider mechanisms in which valuable research work gains appropriate financial rewards.

Strengthening Intellectual Property Rights

Looked at from a long-term strategic view, we need to strengthen the patent and other intellectual property rights systems. It is particularly important that companies correctly perceive the strengths that they have accumulated over the years and the intellectual assets that are the source of those strengths, and achieve innovation by maximizing the performance of their fields of expertise. They must also ensure—through patents and intellectual property rights and the management of trade secrets—that these strengths cannot be imitated by their competitors. The intellectual property rights system exists for this very purpose: it becomes meaningful only when companies start to make strategic use of it.

Leading International Standards in Technology

By refusing to see the aging society, resource shortages, the global environment and other issues as burdens, and by seeking to clear these hurdles through technology, international competitiveness will be fostered, and will give Japan a clearer voice on the world stage. The latent needs in these areas will surely lead to the advent of new kinds of innovation. Japan has already taken various steps well in advance of other countries, and we should put the accumulated results to good use and exhibit a high level of international competitiveness. In doing so, it is vital that we take the lead in making transaction rules and international standards that reflect the technologies of Japan's superior senior citizen-related products and environmentally sensitive goods, and make strategic responses that include preparing the groundwork for a market environment in which superior goods are highly valued.

Spreading Innovation

There are many ways in which we can vitalize the process for spreading innovation across the whole of society. One way that is worth considering is to get the older workers who have gained a wealth of knowledge on the shop floor to share their experience by acting as “manufacturing instructors.” This would not only provide incentives to the older generation, it would also lead to improvements in productivity across the whole of society. We need to see the nurturing of many more specialists in many more fields, and an increase in the opportunities they have to play active roles.

There is a disparity between experts and the general public throughout Japanese

society; we are seeing a situation in which information and technology is becoming the tool of an esoteric few and that is not filtering down to the rest of society. Training skilled coordinators—who will bridge the gaps between experts and users, and make the right information and technology, including their benefits, available to the user—would be a significant step forward. Coordinators are needed not only to fill the gaps between researchers and everyday users, but also those between the legal profession and the public, and the financial profession and their clientele.

Trying Out Model Projects with Clear Goals

It would probably be worthwhile having a few model projects with clearly set goals. Particularly in the fields of resources, energy restrictions, and the environment, public-sector projects using the latest innovations would accelerate subsequent civilian use and are thus worth serious consideration for the sake of Japan's future competitiveness.

For example, experiments paid for by the public sector, such as attempts to make all governmental-use vehicles environmentally friendly, or to power all of Japan's elementary and junior high schools with solar energy, would help to spread innovation and become model projects addressing serious worldwide environmental issues such as global warming and energy shortages. Japan's central and prefectural governments use no less than 430,000 vehicles; there are 23,000 elementary schools and 11,000 junior high schools in the country. Promoting innovation here would encourage technical evolution and bring substantive economic benefits. And if measures such as these can be expanded from the public sector to the citizen level, it will provide Japan with an explicit message to the rest of the world about what direction our nation is heading. A society that carries out challenging experiments is one that can make its voice heard on the international stage.

Chapter 4. Prospects for Society and the Labor Market in 2030

The previous chapter discussed how Japan's latent capabilities could be applied in five areas. If the points raised for each of these fields are vertical threads forming a tapestry symbolizing the Japanese economy, then the ways in which individuals work and live, and the ideal forms society and organizations should take, are, like horizontal threads, important structural elements spanning each of the five areas. This chapter focuses on the ideal forms that society should take on labor market issues, and discusses directions

that should be pursued.

(1) Create a Diverse Society

As discussed previously, a competitive society in the 21st century is a society of universal participation that develops diverse capabilities through individuals who possess vital energy in their various respective positions. A society with vital energy will take shape after a transition from society as it has been — one in which it is impossible to break free of centralized authority and that places an emphasis on uniformity — to one in which women, the elderly, the young, and other members of society can pursue their goals by applying their individual strengths and personal values.

Frontrunners Who Give Rise to Diversity

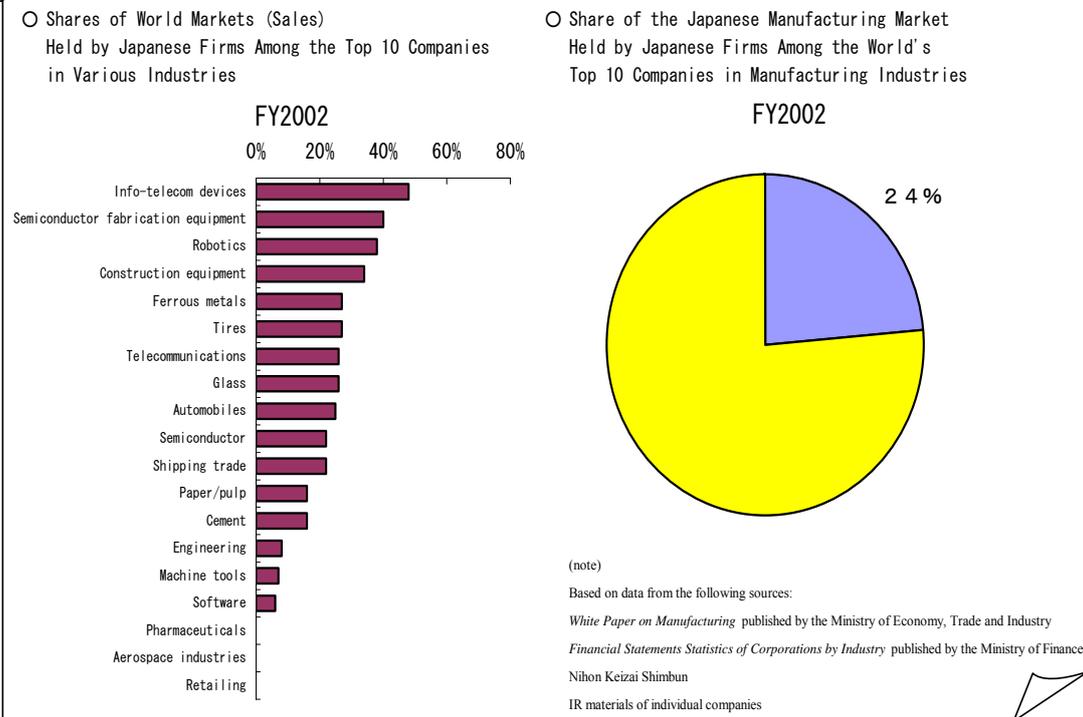
As is clear from the discussion so far, an innovative society is one that accepts diversity. The existence of diverse views and the development of connections among heterogeneous elements give rise to new value in the form of synergies. What results, therefore, must be a society in which large numbers of frontrunners emerge in various fields. Presently, Japanese firms are among the top ten companies in many of the world's industries, particularly manufacturing. Supporting these Japanese firms is an even greater number of materials and parts manufacturers with technologies that exist nowhere else. Many of these little giants have helped each other refine their capabilities in local factories that have brought together people with extraordinary capabilities. On another front, the Japanese animation industry has garnered 60 percent of the world market, and exceptional works have emerged from the coexistence of numerous *anime* and *manga* creators. Turning out such frontrunners in the future requires the creation of an environment in which synergies can develop from the gathering of people with diverse capabilities — not only from Japan, but from overseas as well.

Considering that many of these front-running companies began with creative, entrepreneurial individuals exercising leadership and taking the risk of being the first into a new field, there is nothing more important than the development of an environment in which the endeavors of individuals are encouraged. What is needed is repeated trial and error in the form of a society that allows individuals to accept challenges without fear, that gives another chance those who fail, and that publicizes examples of success. In realizing this type of society, enhancing individual ability, a

topic that is addressed below, will be a key issue. Regarding finance, nurturing the development of channels that link risk with opportunity and promoting innovation and frontrunners, which have already been discussed, will also be necessary.

Frontrunner Society

Leading Japanese Firms in the World Market



Little giants (companies with unique technologies) among materials and parts manufacturers support Japan's competitiveness.

○ Companies with unique technologies (examples)

	Field	World Market Size	Share
A Co.	Ship propellers	¥20-25 billion	40%
B Co.	Paper for electrolytic condensers	¥10.0 billion	70%
C Co.	Cargo oil pumps for ships / steam turbine drives	¥8.0 billion	85%
D Co.	Precious metal plating chemicals for electronic devices	¥5.5 billion	75%
E Co.	Parts with built-in high-pressure hydraulic pump motors	¥5.5 billion	70%
F Co.	Clean-room filters for semiconductor and LCD plants	¥1.3 billion	90%
G Co.	Chemicals for manufacturing of package circuit boards	¥1.0 billion	100%
H Co.	Devices for imparting wound tensile strength on metal coil slitter lines	¥600 million	100%

(Note)Based on data from the following sources: *White Paper on Manufacturing* published by the Ministry of Economy, Trade and Industry.
Ureruyo ni Sureba Ureru (You Can Sell It If You Make It Sellable) by Hajime Karatsu.

Society in which large numbers of frontrunners can emerge based on technical and creative strengths

Realization of a Diverse, Multi-talented Society

For the labor market, it is desirable to realize a diverse, multi-talented society in which people can enjoy their work without limitations based on age, gender, time, or place. It is important to develop a labor market in which the elderly, women, and the young can work in various formats, free of age and gender discrimination, and to create an environment in which there are multiple ways to succeed in work and in which it is possible to polish skills at any time in life. Toward that end, it is necessary to realize tax and company pension systems that do not hinder job changes and to create job training and learning centers that respond to needs, so that people will be able to have “two job changes and four education periods in a lifetime (prior to the first job, twice during job change periods, and once after retirement).

Promoting regional diversity in Japan, which is indispensable for realizing a diverse, multi-talented society, requires a true devolution of authority to local areas. Political and economic autonomy must be given to local areas to the greatest extent possible to invigorate economically stagnant localities. It is also necessary to promote competition among localities. At the private sector level, deregulation is a key for giving rise to diversity. This could be summarized as creating environments in which individuals and companies can take on various types of challenges.

Improving Legal, Economic, and Financial Literacy

If a diverse society is to be created, it is necessary to establish networks among the various levels of society and to create social infrastructure that guarantees the free movement of people, goods, and financial resources. Fair, just, and transparent market (including accounting and other systems) and legal systems, and further progress in information disclosure are required. It is important to create an environment in which large numbers of specialists will emerge and to foster the legal, economic, and financial literacy (basic ability to understand and apply information) of the people who will use their services. New demand will be created not from the one-way flow of specialized knowledge from providers to users, but from the spread of high-quality networks resulting from the enhancement of both providers and users.

The active inclusion of overseas specialists and efforts to invite outstanding young people to Japan are also required. It is, in other words, necessary to actively accept people from overseas at various levels ranging from foreign students to specialists. It is

difficult to believe that Japanese society will be vital and energetic in the future without the participation of outstanding people from overseas.

(2) Enhancing Individual Ability

Society in Which Individuals Are Strongly Motivated to Participate in Society and Their Latent Capabilities Are Exercise

Up to this point, the vital energy of Japanese society has been discussed from various perspectives. What has become evident from these discussions is that the Japanese people are the main actors and that a vital, energetic society is a society that allows people to fulfill their motivations—a society in which all Japanese people can be active in their respective positions. With that, we will now summarize the discussion up to this point from the perspective of enhancing individual ability, and then turn to a discussion of specific policies.

“Individual ability” is the overall ability to participate in society, be involved in its functions, and to pursue life energetically as an individual. Amid significant lifestyle changes, however, contradictions with social structures are growing larger, obstructing opportunities for individual social participation and dampening motivation. Not having had sufficient skill development opportunities, there are people who have been unable to exercise their latent abilities. It used to be said that children only go to school, adults only work, and there is nothing to do when one becomes old, but it is no longer possible to live according to such a one-dimensional view of life. Is children’s education what it should be? Is it connected to society? Can young people select promising careers? Can Japanese people acquire sufficient skills in their respective positions? Are women not being overwhelmed by housework, childrearing, and their jobs? Are the elderly being given sufficient opportunities to be active members of society?

With the expectation that Japan’s population will begin to decline in the near future, Japan must make the most of limited human resources. It is important to realize a society that allows people to fulfill their motivations — in other words, a society in which individuals have a strong motivation to participate in society from their various positions, opportunities to acquire skills that will allow them to achieve their goals, and the ability to fully exercise latent abilities. Toward that end, it is necessary to put in place education that motivates people, to build systems in which people who have

acquired expertise are recognized by society, and to establish a society that responds to the needs of various lifestyles and that allows people to work until a healthy life expectancy of 80.

School Education Reforms That Boost Motivation and Help Students Acquire Expertise

School education reforms are necessary for creating the foundations of individual ability. Beginning with a restoration of faith in the performance of public primary and junior high schools, achieving the desired performance will require the provision of sufficient class time, which has been shortened. Furthermore, it is necessary to give work a more definite position within educational guidelines, beginning at the primary school level, to teach in ways that enhance interest in and motivation for participating in society, and to smooth the transition from school to workplace to put a halt to the increase in those who make their living primarily from part-time work and in those without work.

Extensive reforms are also needed in higher education. More must be done to open Japan's universities to the international educational environment. Specialized research and education must be exposed to competition at the international level. Moreover, a system that encourages significant numbers of outstanding researchers and educators to work in Japanese educational institutions must be built. Until now, Japan has relied on companies to teach most specialized skills. However, in light of the increasing fluidity of employment and the increasing sophistication of specialized skills, specialized educational institutions should play a more significant role. If specialized skills become more diverse and sophisticated, it will be impossible for companies alone to provide all the training needed. Under current conditions, educational facilities are inadequate for *anime*, computer games, mobile Internet, consumer electronics, personal services, and other areas in which Japan appears to have advantages. The acquisition of specialized skills such as these is not the only requirement; it is also necessary to promote industry-academia cooperation in education and to create a system for fostering a wide range of professionals for the benefit of the education of young managers. The environment for these young managers must come together based on both practical management experience and MBA and other formal education programs. Additionally, in light of the increasing number of people who have PhDs and cannot find employment, it is necessary for companies to consider implementing personnel development systems that can easily make use of external human resources with

specialized knowledge and skills. Government, too, must make greater use of people with highly specialized knowledge and skills.

Fostering Professionals

It is necessary to build a system that allows even young people who want to leave school at an early stage to have and apply specialized skills. Skill and job evaluation and recognition systems that go beyond company frameworks must be established. These systems must address various levels to, for example, allow the many young people with sommelier qualifications to work as sommeliers, or to enhance motivation to acquire skills and increase society's recognition of skills, as do "meister" and other such qualifications. A society that accepts diverse ways of working should be a society that approves of various ways of working and work functions. It is necessary to thoroughly revise the qualification system for evaluating specialized skills and knowledge and to develop job skill evaluation standards (like the National Vocational Qualifications in the UK). Exporting skill evaluation standards, together with education programs and promoting the employment of foreigners who have gained qualifications, will also be possible. To create an environment in which professionals with highly specialized skills are respected throughout society, it will also be worthwhile to consider creating a national award system for workers with highly specialized skills.

The reason Japan's competitiveness tends to be looked down upon overseas stems from the inept ability of Japanese to explain things. This is partly because various types of knowledge and technologies are taken for granted, and have not been adequately expressed in words. The result has been restricted understanding of Japan and, occasionally, times when non-Japanese are left with the impression that Japanese are difficult to understand. Another reason why Japan's competitiveness tends to be looked down upon overseas is the barrier created by the Japanese language. Important information is expressed in Japanese, so it is relatively difficult for it to be evaluated internationally. The lack of English conversation skills on the part of Japanese and their inability to adequately explain and negotiate on an international stage are other likely reasons. If there is no improvement in the explanatory capabilities of Japanese, any refinements in competitiveness will be purely for self-satisfaction. Improving English conversation skills in particular is an important issue. Fostering the development of people who can function on an international stage is critical; this can be done through measures such as increasing the number of high school, university, and graduate school classes taught in English, and creating conditions that make it possible to earn credits

by taking only classes taught in English.

Support for Non-fulltime Workers and the Employment of Fulltime Housewives

There is an increasing number of non-full-time workers not covered by company training. In essence, if training is not received during the time that skills should be developed, it will be difficult to make the transition to full-time status, which contributes to social stratification. Creating a society in which it is possible for non-full-time workers to have another chance to become full-time workers requires expanded hiring opportunities, support for probationary employment, and parity between working conditions and regulations for traditional employment on the one hand, and non-traditional employment on the other. In addition to self-development tax credits for the support of individuals, and career scholarships, skill development support requires a discretionary labor system, a break system (time off for self-development) and other types of support to provide the time needed for self-development. What can be said about both education and skill development is that the possibilities for individual choice should be increased, and that this will require active steps to implement a voucher system for skill acquisition and educational support. Furthermore, to ensure that anyone can learn what they should and do so at any time, it is necessary to create an Internet-based learning system that will allow people to learn in even a short time the content that is currently scattered among government and private-sector sources. This means an Internet-based university where even full-time housewives, the elderly, and those who earn their living primarily from part-time work can learn.

The agency dedicated to helping women find jobs again after having left previous jobs to raise children, “Mama Hello Work,” should be expanded. Of course, there is no reason why agencies such as this should be operated by only public institutions.

The Labor Market in the Era of a Healthy Life Expectancy of 80

The current employment system is not one that envisions a healthy life expectancy of 80. With so many people working as salaried employees in the wake of the era of high economic growth, many companies have made retirement mandatory at age 60, many people are confined to a standardized lifestyle characterized by retirement at age 60.

Society should allow people to work throughout their lives, and people should be able

to freely choose how to live throughout their 80-year life expectancies. For example, it would be good if people could focus on working and saving when they are young, take a break from work around age 30 to devote themselves to childrearing and family life, go back to school to invest in themselves, and then work from age 50 to 80. Under current conditions, people must save for their retirement until age 60, so there are mismatches among demands for money, time off, leisure, and work. If planning is based on the assumption that people can work up to a healthy life expectancy of 80, human resources will become more fluid, and it will be possible to expand the scope of life choices.

Realizing this requires a revision of age-based salary systems and excessive employment security. There needs to be a shift from policies that are dependent on age-based mandatory retirement and promote the employment of the elderly, to the passage of a law forbidding age discrimination. At the same time, certain steps should be taken. Examples would include the adoption of 10- to 15-year employment contracts and short-term work styles as new schemes for employing the elderly, and business-cooperative work models created by teams of self-employed elderly people with specialized skills and expertise. Regarding age-based benefits, the current system in which pensions are reduced for the working elderly should be revised, and tax and other systems, too, should be constructed in a manner that makes them at least neutral on the matter of work.

Realization of a healthy life expectancy of 80 will bring the country closer to being a free and diverse society that has progressed beyond traditional values and is unrestrained by age and gender discrimination.

Conclusion

This report discusses the development of Japan's economy and society through the year 2030. However, considering the current conditions surrounding Japan's economy and the speed with which the population will age, the measures discussed in this report should be viewed not as mid-to-long-term policies, but as matters that must be addressed immediately. At the beginning of this report, it was stated that Japan's competitiveness is being undermined. That is not just a national problem. In due course, it will touch individual Japanese people in the form of lower living standards, deteriorating public order and social conditions, and excessive financial burdens on

individuals. What is needed is a sense of urgency and rapid action. Japan has not yet lost its strengths. It is necessary to see this as the last chance before the mass retirement of the baby boom generation and to embark on reforms immediately.

<Reference>

Outlook for the Industrial Structure in 2030

Shape of new industries to emerge from the strategies described in this report

If a society with new forms of competitiveness like those described above is realized, it is conceivable that Japan's industrial structure will change significantly. As was touched upon in the main body of this report, it is envisioned that the application of lifestyles and culture as new forms of competitiveness will result in a significant expansion of the domestic and overseas markets for the lifestyle and culture creation industries (content, fashion, food, education). Japan, whose population is aging at the fastest rate in the world, can apply its experience as such, acquire new know-how and skills in life sciences broadly defined to include medicine; in long-term care; and in other aging-related industries, and these industries can develop a strong presence not only domestically, but also internationally. As the roles of government and the private sector are revised, it is very likely that the markets for medicine and long-term care will undergo significant development. Regarding the manufacturing industries, products backed by Japan's traditional culture and creativity will be attractive and add to manufacturing skills in maintaining competitiveness. It is conceivable that, in addition to the present frontrunners (info-telecom equipment, semiconductor fabrication equipment, etc.), new industries born of innovation in science and technology (fuel cells, robotics, advanced medical equipment, etc.) will take on leading roles in a new industrial structure.³

Premises for forecasting the shape of Japan's industrial structure amid world

³ According to estimates in a document titled, *New Industry Creation Strategy*, published in 2004 by the Ministry of Economy, Trade and Industry, in 2025, informatization and aging will have progressed and new industries—telecommunications and broadcasting; medicine, healthcare, social security, and long-term care—will stand shoulder to shoulder with electrical machinery and transportation equipment as leading industries. According to this forecast, between 2000 and 2025, telecommunications and broadcasting will increase as a share of GDP from 2.9% to 6.0%; medicine, healthcare, social security, and long-term care will increase from 3.8% to 5.4%; electrical machinery will increase from 5.9% to 7.5%; and transportation equipment will decrease from 4.5% to 3.8%.

economic change

It is envisioned that the world economy, too, will undergo significant change. In particular, the rapid development of China and other parts of Asia could have a significant impact on Japan's industrial structure. Below are quantitative estimates of the approximate impacts Chinese economic development and other changes in the world economy will have on Japan's industrial structure.

The outlook framework is based on a general equilibrium analysis of Japan and its major trading partners between two points in time—2000 and 2030. As premises, it was assumed that Japan's working population will decline and that those of other Asian countries will increase, though at a declining rate. Regarding the productivity growth of individual industries, it was envisioned that realization of a frontrunner-type society and accelerated innovation will result in a manufacturing-led macro productivity growth of 0.7 percent over the medium term. Under the general equilibrium model framework, the industrial structure is determined by considering the relative growth of production elements in the form of labor and capital on the supply side, and what industrial products will receive in increased income on the demand side. Regarding the supply side, a decrease in the working population will raise the relative price of labor capital and induce efforts to reduce labor usage; output growth in labor-intensive industries, as a result, will tend to be restricted. On the other hand, a mechanism in which demand for continuously high-elasticity-value services will experience relatively large growth will come into play. As for the relationship to the world economy, the rapid growth of resources in one's own country is relatively advantageous for the export of goods from industries that use these resources intensively, and high-productivity growth promotes the export of goods from those industries.

(Note) In the Competitiveness Working Group, the distinction between manufacturing and non-manufacturing industries had no meaning; the focus was on industries that supply products and services and on competition based on attractiveness of content as value. However, in the forecast below, the manufacturing/non-manufacturing distinction is used for convenience in comparing to current conditions, given the limitations of the model.

Shape of the industrial structure in 2030

According to forecast results, Japan, by maintaining high-productivity growth in manufacturing industries, will maintain its competitiveness vis-à-vis other Asian

countries. Forecast results indicate that Japan's manufacturing industry will expand production by 0.8 percent per annum. However, if, as is discussed in the reference section, productivity growth in manufacturing industries is low, productivity too will decline significantly, with part of the decline being replaced by production increases in overseas manufacturing industries, particularly in Asia. As for non-manufacturing industries, the decline in the working population will restrict the growth of labor-intensive industries, but the strong impact of greater service demand resulting from higher incomes will open the way to growth of 1.5 percent per annum, which will exceed the growth rate for manufacturing industries. Consequently, manufacturing industries will decline from the current 24 percent share of GDP to 20 percent, and non-manufacturing industries will increase from 76 percent to 80 percent.

The weight of non-manufacturing industries will be even greater in employment, where the share of workers employed by non-manufacturing industries will rise from 80 percent to 91 percent, while the share of workers employed by manufacturing industries falls from 20 percent to 9 percent. This will be the result of expected progress in labor-saving measures in manufacturing industries. These measures will reflect scientific, technological, and other types of innovation.

Japan's industrial structure will change depending on where in the economy, and the degree to which, there are innovations and new business models. These developments must be closely watched. It goes without saying that the industrial structure as it actually appears in 2030 will depend largely on the originality and inventiveness of entrepreneurs.

Outlook for the Industrial Structure in 2030 (Estimates)

Estimate method

- (1) Using the GTAP model, the impact on the industrial structure of changes in labor, capital, and productivity from 2000 to 2030 was estimated.
- (2) Increases in labor, capital investment, and productivity up to 2030 for the United States, EU, and other Asian countries were also assumed.
- (3) The regions are linked by trade, but there is no labor movement.

Main assumptions for the Japanese economy

- (1) Labor investment declines by an annual average of 0.3 percent from 2000 to 2030.
- (2) Capital investment increases by an annual average of 2.8 percent from 2000 to 2030.
- (3) The total factor productivity (TFP) is assumed to be 2.6 percent for the manufacturing industry and 0.0 percent for the nonmanufacturing industry.

1. GDP Trends by Industry in Japan and Other Major Countries and Regions

From a worldwide view, the manufacturing industry in Asia registers high growth, but the Japanese manufacturing industry, supported by a large rise in productivity, also increases.

Changes from 2000 to 2030 (annual %)

	Japan	USA	EU	Asia
Manufacturing industry	0.8	2.7	0.9	6.1
Nonmanufacturing industry	1.5	3.1	1.9	5.8

(Reference)

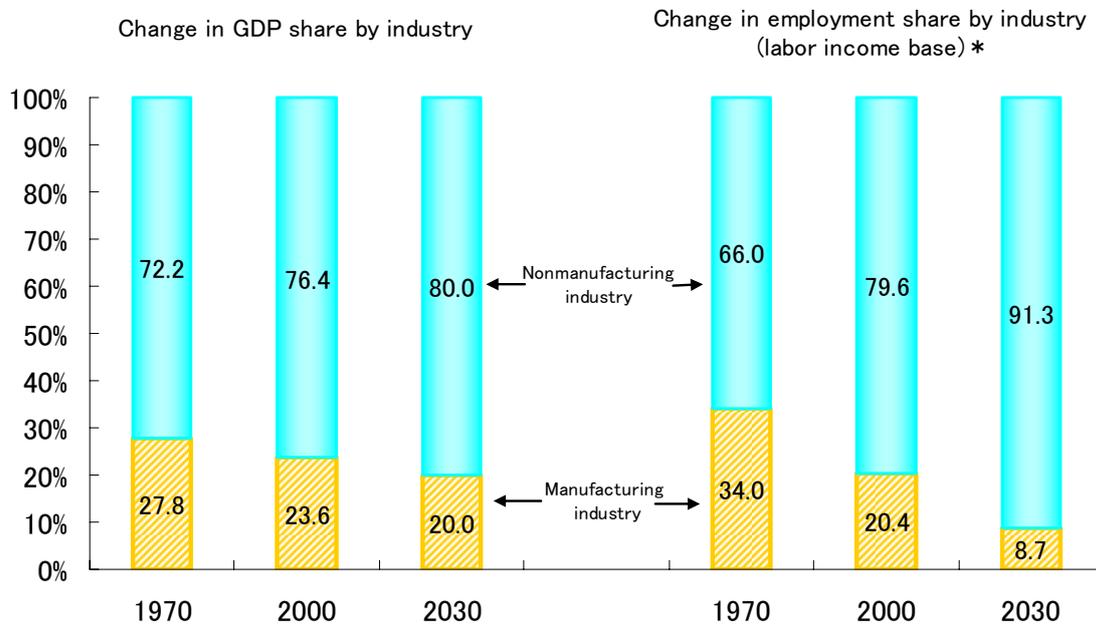
If the increase of productivity in the Japanese manufacturing industry remains low (manufacturing industry TFP growth: 2.6% → 1.2%).

GDP Growth Rate for the Manufacturing Industry (annual %)

	Assumed Japanese manufacturing industry TFP of 2.6%	Assumed Japanese manufacturing industry TFP of 1.2%	Difference
Japan	0.8	-0.1	-0.9
USA	2.7	2.7	+0.0
EU	0.9	0.9	+0.0
Asia	6.1	6.2	+0.1

2. Changes in GDP Share and Employment Share by Industry in Japan

The share of services in the economy will advance, and, reflecting the difference in productivity, the share of the service economy in employment will increase significantly.



- Notes: 1. The figures for 1970 and 2000 are actual national economy performances.
 2. The 2030 employment share is the amount of labor income paid in each sector.
 3. The shares by industry do not include mining, agriculture, forestry, and fisheries.

(Reference)

Although it is not specifically considered in the above calculations, the more concrete industrial structure image for 2030 that is discussed in the main text is as follows:

- Regarding the manufacturing industry, in addition to the current frontrunners (information communications equipment, semiconductor manufacturing devices, etc.), new industries based on innovations in science and technology (fuel cells, robots, advanced medical equipment, etc.) will play a leading role in growth.
- Regarding the nonmanufacturing industry, in addition to media software, fashion, food, domestic tourism, education, etc., new services related to medicine and care will have an important role as industries.

(Reference)

Corporate Long-Term Vision Questionnaire

A questionnaire concerning opinions on long-term corporate and economic trends (among other topics) over the next 20 or 30 years was sent to 71 companies, including manufacturing and nonmanufacturing firms that are representative of Japan, and small and medium-sized businesses that have been achieving rapid growth recently. Replies were received from 57 companies. The survey period was from October 28 to November 12, 2004.

Q: Regarding changes in the external environment (population structure, overseas economies, etc.), what factor do you give most attention to from the perspective of corporate competitiveness? (Please circle one.)

1. Advance of declining birthrate and aging
2. Advance of globalization
3. Resource limitations, such as oil, and global environmental problems
4. Other (specifically: _____)

Main Questionnaire Results (Excerpts)

(Results) Replies were received from 50 companies.

- As external factors that companies pay attention to from the perspective of corporate competitiveness, in addition to “advance of globalization” (52%), “advance of declining birthrate and aging” (31%), and “resource limitations, such as oil, and global environmental problems” (10%), other respondents cited “low growth in Japan” and “macroeconomic trends in the world as a whole.”

Q: Do you think that the international competitiveness of Japan as a whole will become stronger or weaker from now on? (Please circle one.)

1. Competitiveness will get stronger.
2. Competitiveness will get weaker because of a decline in the quality of human resources.
3. Japan’s competitiveness will get weaker because of the strengthened competitiveness of newly developing economies, such as China.
4. Other (specifically: _____)

(Results) Replies were received from 52 companies.

(Results) Replies were received from 52 companies.

- As the international comparative advantage when looked at from the perspective of Japan as a whole, most companies cited “excellent labor force with uniform educational level” (46%) and “high level of science and technology” (38%), but some companies also cited “high level of consumer demands” (15%).

Q: When looking from the perspective of Japan as a whole, what do you think is the
Q: What government measures do you think exert the most impact on corporate competitiveness? (Please circle as many factors as you want.)
1. Regulatory reform
2. Fiscal policy (tax and social insurance fee burden, etc.)
3. Promotion of education, science, and technology
4. Trade policy (conclusion of FTAs, etc.) and policies relating to inflow of capital and people from overseas

(Results) A total of 118 replies were received from 53 companies.

Q: What government measures do you think exert the most impact on corporate competitiveness? (Please circle as many factors as you want.)
Deregulation 79%
Fiscal policy 53%
Promotion of education, science, and technology 42%
Trade policy and policies relating to the inflow of capital and people from overseas 49%

History of Deliberations by the Competitiveness Working Group

Session No. 1 (September 29, 2004)

- Procedures for facilitating the proceedings
- Direction of studies by the Competitiveness Working Group
- Other

Session No. 2 (October 12, 2004)

- Report of the 2nd Expert Panel
- Discussions by theme
 - (1) Lecture by Kazuhiko Toyama, the COO of the Industrial Revitalization Corporation Japan: “The Strengths and Weaknesses of Japanese Companies as Seen Through Business Revitalization”
 - (2) Lecture by Member Hiroaki Takeuchi: “The Contents and Potential of Japan—the Power of Pop Culture”
 - (3) Lecture by Member Yoshiyuki Sodekawa: “The Direction Aimed for by Japan’s Soft Power”
 - (4) Other points of discussion
 - (5) Schedule of studies in next meeting and thereafter
- Other

Session No. 3 (October 19, 2004)

- Notice from Secretariat
Schedule of events from now on relating to “Japan’s Vision for the 21st Century”
- Hearings from learned persons (on science and technology)
Professor Kazuhito Hashimoto (Director, Research Center for Advanced Science and Technology, University of Tokyo)
Professor Toru Ifukube (Research Center for Advanced Science and Technology, University of Tokyo)
Professor Yasushi Nakano (Research Center for Advanced Science and Technology, University of Tokyo)
Associate Professor Satoshi Fukushima (Research Center for Advanced Science and Technology, University of Tokyo)

- Reports by working group members
Member Seiichiro Yonekura: “Vision and Innovation”
Member Kiyohiko Nishimura: “The IT Revolution and the Competitiveness of the National Economy and Society”
- Schedule of studies in next meeting and thereafter

Session No. 4 (October 26, 2004)

- Notice from Secretariat
- On people
Hearings from learned persons
Professor Yoshio Higuchi, Keio University: “Individual Support for Skill Development”
Reports by working group members
Member Yukio Okubo: “The Individual Ability Vision from the Perspective of Competitiveness”
- On manufacturing
Reports by working group members
Member Fujimoto: “Japanese Manufacturing’s 21st Century Vision – From the Viewpoints of Organizational Capability and Architecture”
Member Masahito Kuse: “Future Direction for Strengthening Japan’s Competitiveness” (amid strengthening of international environmental restrictions, realization of positive cycle of environment and economy, etc.)
- Finance
Hearings from learned persons
Oki Matsumoto, CEO, Monex Inc.: “Competitiveness in the Finance Industry”
- Schedule of studies in next meeting and thereafter

Session No. 5 (November 1, 2004)

- Reports by members
(1) Member Hiroshi Mabuchi: “Current Issues in Competition Policy”
(2) Member Kiyoko Yokota: “The Post-Check Society and the Public’s Consciousness of Law”
(3) Member Tomohiro Yonezawa: “Present, Past, and Future of the Finance

System”

- Consideration of items that should be included in the interim report
- Notice from Secretariat

Session No. 6 (November 17, 2004)

- Consideration of interim report framework
- Notice from Secretariat

Session No. 7 (November 24, 2004)

- Hearing: Yoshito Hori, CEO, Globis Group
- Results of corporate questionnaire
- Consideration of interim report
- Notice from Secretariat

Session No. 8 (February 24, 2005)

- Consideration of report
- Notice from Secretariat