GOVERNMENT PROCUREMENT AS INDUSTRIAL POLICY: IN SUPPORT OF JAPAN'S DEFENSE AIRCRAFT, START-UP AND VENTURE COMPANIES, AND INFORMATION TECHNOLOGY SECTORS

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LIST OF ABBREVIATIONS

AAGA	Agreement by All Government Agencies
ARRPIS	Agreement on Revising the Regulations Applied to the Procurement of Information Systems
BLFAITNS	Basic Law on the Foundation of an Advanced Information and Telecommunications Network Society
CIO	Chief Information Officer
DoD	Department of Defense
EA	Enterprise Architecture
EU	European Union
FAR	Federal Acquisition Regulation
GLOCOM	Center for Global Communications
GDP	Gross domestic product
GSA	General Services Administration
IT	Information technology
JDA	Japan Defense Agency
LoA	Law of Accounts
METI	Ministry of Economy, Trade and Industry
MITI	Ministry of International Trade and Industry
NASA	National Aeronautics and Space Administration
NTT	Nippon Telegraph and Telephone Public Corporation
PNGEG	Program for the Creation of the Next-Generation Electric Government
R&D	Research and development

R/R&D	Research or R&D
SBIR	Small Business Innovation Research
SDR	Special Drawing Rights
SME	Small and medium[-sized] enterprises
STBL	Science and Technology Basic Law
STTR	Small Business Technology Transfer
USC	United States Code
WTO	World Trade Organization

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INTRODUCTION

Japan has been seeking tractors of stable economic growth for about 10 years now. There is a good possibility that both the aerospace and information technology (IT) sectors could satisfy this quest, because they are high-technology and value-added businesses and have great repercussion effects on other industrial areas.[1] Government policies to promote industries include subsidies, tax reductions, government guarantees, and low-interest financing, but none of these tools has more than an "indirect" influence upon their targets. Government procurement, on the other hand, makes the government "a customer" who acquires goods and services from various companies; therefore the government can be expected to have "direct" effects on companies.

In the United States, the Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and other government agencies have created "direct" relationships with the private sector in their procurement systems for many years. As a result, there have been many historical developments in the aerospace and computer fields, such as the invention of the jet airplane and the creation of the Internet, and these have been widely diffused to the private sector in a timely manner. It is clear that U.S. economic growth has been greatly affected by the development of the aerospace and IT industries.

On the other hand, although the Japanese government has also been trying to promote the aerospace and IT sectors by encouraging research by domestic aerospace companies, developing and manufacturing defense aircraft and, by contracting with domestic IT companies for the construction of its information systems, these industries have not produced as many added values as the government

[1]Japan Defense Agency, "The Basic Directions for Maintenance and Nurture of the Foundation of the Defense Industry and Technologies – For Erection of the Foundation in the 21st Century – (November 2000)": Material No. 3; Shigeru Obayashi, "Japanese Aeronautical Technologies in the 21st Century," April 2004; and Statistical Research and Training Institutions of the Ministry of Internal Affairs and Communications, "Statistics of the World": 142-48.

had hoped. Thus, in the 21st century, it will be necessary for the Japanese aerospace and IT industries to become high-technology and value-added like their counterparts in the United States.

Economic metabolism is also evidence of economic growth. Old and no longer value-added companies and industries are replaced by new and value-added ones. As the 2000 White Paper on Small and Medium Enterprises (SMEs) in Japan concludes and verifies, the growth ratios of added value and total shipping amounts are larger in venture companies than in older and non-venture companies.[2] Because the U.S. government noticed this fact more than 20 years ago and decided to foster many high-technology venture companies, it established two policy initiatives, namely, the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. in 1998, Japan also introduced a policy effort similar to the SBIR program, which sets aside research and development (R&D) grants for venture companies into the Law for the Promotion of Creating New Businesses. Although the budget of that program amounted to ¥31 billion ($263 million) in FY2005, it includes very little R&D funding for defense or aerospace which, in the United States, constitute a large portion of the SBIR and the STTR programs. Thus, the Japanese program still lacks sufficient strength.

According to the SBIR/STTR Program Policy Directive in the United States, the SBIR program is "a phased process, uniform throughout the Federal Government, of soliciting proposals and awarding funding agreements for Research or R&D (R/R&D) to meet stated agency needs and missions." Based on this explanation, it can be concluded that the SBIR program is among the government procurement systems that fulfill government needs and missions. In his book *Can Japan Compete?* Harvard Business School Professor Michael E. Porter finds that government procurement is an effective tool to strengthen industrial competitiveness, observing: "Where government stimulated

[2]Small and Medium Enterprise Agency, "2000 White Paper on Small and Medium Enterprises in Japan": Part I, Chapter 2, Section 3 – 3.

the demand for new or advanced products, it improved demand conditions, and with them, competitiveness." He cited the strong competitiveness of Japanese fax machines as an example.

Because the government procurement system, by its nature, is likely to connect conservative policies on both industry and trade, the World Trade Organization (WTO) has created the Agreement on Government Procurement. But this does not prevent any country from "taking any action or not disclosing any information which it considers necessary for the protection of its essential security interests relating to the procurement of arms, ammunition or war materials, or to procurement indispensable for national security or for national defense purposes" or "imposing or enforcing measures necessary to protect public morals, order or safety, human, animal or plant life or health or intellectual property; or relating to the products or services of handicapped persons, of philanthropic institutions or of prison labour."[3] In this paper, I will focus on the procurement of defense aircraft, IT systems, and products and services for start-ups and venture companies. Generally, except for defense aircraft, this procurement is basically undertaken according to the WTO agreement. That is to say, it is necessary, and sufficient, to analyze these three fields to examine the possibility of amending the WTO agreement.

In this paper, I would like to explore ideas for renovation of the Japanese government procurement and other related systems from the standpoint of strengthening the competitiveness of the aerospace and IT industries and reactivating the Japanese economy by fostering start-ups and venture companies as well as realizing the "best value" procurement for both government agencies and the taxpayers.

[3]World Trade Organization, "Agreement on Government Procurement," January 1996: Article XXIII.

CHAPTER 1

FEATURES OF EACH INDUSTRY

– ESPECIALLY IN RELATION TO GOVERNMENT PROCUREMENT –

The Defense Aircraft Industry

R&D and manufacture of aircraft in Japan were prohibited by Allied Occupation for seven years after the end of World War II. The revival of this sector started in 1952, after Japan recovered its sovereignty through the peace treaty of 1951. In 1952, the Ministry of International Trade and Industry (MITI) issued the Aircraft Manufacturing Industry Law and initiated government support for six domestic aircraft companies: Fuji Heavy Industries, Ishikawajima-Harima Heavy Industries, Kawasaki Heavy Industries, Mitsubishi Heavy Industries, NIPPI (Nippon Hikoki), and ShinMaywa Industries. Although the current level of technology and ability to manufacture aircraft in Japan are not particularly low in comparison with the global level, it is hard for the Japanese aircraft industry to get a large share of the world market, as the nation did with automobiles. That is mainly because Japan has the Three Principles of Arms Exports. Since the export of aircraft and cooperative R&D and production with advanced companies in the United States and European Union (EU) are restricted under these principles, the Japanese aircraft industry is limited to the domestic market. Furthermore, there is a shortage of information and funds for R&D and technology development; thus, Japanese-made aircraft are very expensive, reflecting high development and production cost per unit in comparison with their foreign equivalents. Therefore, it is possible to say that The Three Principles of Arms Exports obstructs the strengthening of the competitiveness of the Japanese aircraft industry.[4]

[4]Katsuhiro Shigemura, "The Present Situation of the Defense Industry in Japan and Maintenance and Promotion of the Foundation of Technologies and Production," 2002 Annual Report of the Defense Research Center; Nippon Keidanren, "How Defense Power Should Be Maintained in the Future," July 2004; Liberal Democratic Party, "Opinions: The New Defense Policy in Japan," March 2004.

As a result, the output of parts produced by comparatively low technologies for Boeing and Airbus has increased over the past 10 years or so in Japan, but about 60 percent of domestic aircraft production and repair is still accounted for by the Japan Defense Agency (JDA) (Fig. 1). The fact that a large proportion of the production and repair done by Japanese aircraft companies is for the domestic market, which is dominated by the JDA and only six other companies as suppliers has resulted in some criminal cases regarding JDA procurement.[5] In 2001, therefore, the agency took countermeasures to divide the Central Procurement Office into the Department of Cost Accounting in the Bureau of Finance and Equipment plus the Central Contract Office.

The low competitive power of Japanese aircraft companies appears in the sales ranking of aerospace companies around the world. According to that ranking, Mitsubishi Heavy Industries barely comes in at 21st. U.S. companies, on the other hand, occupy seven of the top 10, and the ratios of military and defense sales to total of these seven companies vary from 0 to 90 percent (Fig. 2).

The IT Industry[6]

The policy on promotion of the IT industry started substantially when MITI and IBM reached an agreement that allowed for the establishment of the 100 percent foreign capital company, Nihon IBM, and, in exchange for this, allowed Japanese companies to use IBM patents by paying three percent royalties. In aiming at making Japanese computers rival those of IBM, MITI undertook the Five-Year Plan on Making a Domestic Computer in 1960, and the Japan Electronic Computer Corporation was established during the following year in order to popularize domestic computers through leasing arrangements. The system of qualifying IT

[5]The case of padded bills in the Procurement Office of the JDA and Yojiro Nakajima's bribery case in the development of the new rescue flying boat, both in 1998.

[6]Information-Technology Promotion Agency, Japan, "A Research and Analysis Report on Information Policy and the Information Industry in the Past," March 2004 "A Chronological Table of Information Policy," March 2004.

engineers was set up in 1969 so as to develop human resources in the IT field; and, in the next year, this system incorporated the national Information Technology Engineers Examination. In addition, MITI executed the fully grant-supported Project on the Development of a Super-High-Performance Computer between 1966 and 1971, but the procurement by Nippon Telegraph and Telephone Public Corporation (NTT) played a much greater role in strengthening the domestic IT industry. NTT acquired high-technology hardware and customized software, and, in order to meet its demands, domestic IT companies put forth great efforts to develop and manufacture such products. This collaboration promoted the development of technology in these areas and brought about the growth of IT the industry in Japan. As for software, however, because it was regarded as "a part of hardware" until the 1980's, the amount of money sufficient for developing software technologies was not poured into the software market, and few independent software companies were born in Japan. On the other hand, in the 1970's, the U.S. government, led by the DoD, distinguished software from hardware and created 85 percent of the software demand in the domestic U.S. market. This difference in attitude between the two governments caused the gap in the development of the software technology and industry between Japan and the United States (Fig. 3).

IT procurement by local governments is strongly affected by the policies on information-oriented regions, such as the plan for new media communities promoted by MITI in the 1980's. Under this plan, many public service corporations funded by the central government, local governments, and local private companies developed information systems for local governments and companies and, whenever they did so, were obliged to order them from domestic IT vendors. Almost all the local governments that procured information systems under the plan continue to improve and use them now; in other words, domestic IT companies receiving orders for IT systems in the 1980's currently maintain their shares of the local governments' IT procurement market.[7]

[7]The Council on IT Procurement of Local Government of GLOCOM (Center for Global Communications) reports that four large company groups (NEC, Hitachi, Fujitsu, and NTT) occupy about 40 percent of the IT procurement market in 47 prefectures and about 90 percent of that market of 13 ordinance-designated cities.

As a result of this history, Japanese IT companies are strong in the domestic market although they are not very competitive internationally (Fig. 4). Professor Martin Fransman of the University of Edinburgh accurately describes this phenomenon as the "seven puzzles and paradoxes of Japan's computer and communications industry."[8]

Start-ups and Venture Companies

The political support of start-ups and venture companies[9] started in earnest after the bankruptcies of large companies and the increase in both firm deaths and the unemployment rate in the middle of the 1990's. MITI, referring to U.S. government policies, has implemented as many measures as possible, such as issuing the Small and Medium Enterprise Creative Activity Promotion Law (1995), the Law for Facilitating the Creation of New Business (1998), the Limited Partnership Act for Venture Capital Investment (1998), and the Law for Facilitating Technology Transfer from Universities to Private Sectors (1998), granting subsidies, improving the indirect loan and tax systems, holding conferences and forums on start-ups and venture companies, and establishing collaborative public-private venture capitals.

By implementing numerous policies to promote start-ups and venture companies, the Ministry of Economy, Trade and Industry (METI) (formerly MITI; the name was changed in January 2001) expected that many entrepreneurs would actively establish companies and that a number of progressive CEOs would vigorously make their companies more venturesome. But realistically, the rate of firm births has been below 4 percent for about 20 years (Fig. 5). On the other hand, the rate of firm births in

[8]Martin Fransman, "Japan's Computer and Communications Industry," Oxford University Press, 1995.

[9]Let me define the words "start-up" and "venture company" here for the purpose of clarifying the target of the policies. "Start-up" means a company that starts a business without considering whether it will produce high added value or not. From this definition, start-ups are mainly found in the service sector. On the other hand, "venture company" means a company that produces high added value from its highly advanced technologies or abilities. From this definition, venture companies are mainly in the manufacturing sector.

the United States has been more than 10 percent for the past decade or so (Fig. 6). There are many reasons why this rate is far below that of the United States; the major factor is believed to be the difficulty in raising funds for start-ups. In Japan, because the agencies responsible for financing start-ups are practically only banks, and almost all the banks need mortgages or guarantors for loans, it is said that entrepreneurs who are likely to be in short of such backing have difficulty in borrowing money from banks for starting businesses.[10] But I think there is a more important reason: that start-ups and venture companies do not have clear future visions of their business because of vague and fragile markets for their proposed goods and services.

The reason why markets for start-ups and venture companies are indeterminate and unstable is as follows. In Japan, governmental institutions and almost all the big private companies are likely to make deals exclusively with "reliable" companies. This tendency makes the markets in government procurement and large company acquisitions very limited for start-ups and venture companies because they only have immature human and financial fundamentals and are not believed to be particularly reliable. Although governmental institutions and large private companies should have the ability to ascertain which start-ups are actually reliable, they will not do so of their own accord. But, once a start-up or venture company receives an order or accepts a subsidy or gets an official guarantee from a governmental institution, it suddenly become "reliable" and can obtain many other deals not only with governmental agencies, but with large private companies as well. Consequently, government procurement has a great influence on the development of start-ups and venture companies in Japan.

[10]Small and Medium Enterprise Agency "1999 White Paper on Small and Medium Enterprises in Japan": Part I, Chapter 7, Section 3.

CHAPTER 2

REGULATIONS AND OUTLINE OF GOVERNMENT PROCUREMENT IN JAPAN

Overview

Scale

In FY 2002, the amount of government procurement in the general account of Japanese government was about ¥11.6 trillion ($98.5 billion)[11] out of ¥83.7 trillion ($700 billion). If all the special accounts are added, the total amount of government expenditure added up to about ¥245 trillion ($2 trillion) in the same year[12]; in accordance with that, the amount of procurement is supposed to go up over ¥15 trillion ($127 billion) **(**That figure is more than 3 percent of the gross domestic product (GDP) in Japan which amounts to ¥500 trillion ($4.3 trillion) (in this connection, the amount of U.S. government procurement was about 2.5 percent of its GDP, or $299.9 billion in FY2004, and that of the EU government was more than 16 percent, or €1.5 trillion). The effect of the inflow of such a huge amount of money on the economic activities of Japan is hardly negligible.

About half of the Japanese government procurement market is occupied by public construction, one quarter of it by goods, and the other quarter by services (Fig. 7). In goods and services procurement, the JDA's acquisitions amount to about ¥2 trillion ($17 billion) while that of Japanese government's IT procurement is about ¥1 trillion ($8.5 billion). Both are major areas in the government procurement market. In addition, according the Policy on the Public Sector's Contracts

[11]Small and Medium Enterprises Agency, "An Interim Report of the Sectional Meeting on the Basic Policy in The Small and Medium Enterprise Policy-Making Council and the Sectional Meeting on Dealings in the Subcommittee on Business Support of Small and Medium Enterprises – Consideration of the Future Status of the Government Procurement Policy " June 2004: Materials for Reference No. 9.

[12]Board of Audit of Japan, "The Outline of the Settlement of Accounts in FY2002," November 2003.

with SMEs, which is determined by the Cabinet based on the Law Regarding Setting Aside Contracts of Public Procurement for SMEs (1966), every governmental agency must annually set the target ratio of contracts with small and medium-sized enterprises.

In FY2002, the proportion of contracts with SMEs in the Japanese government procurement market was about 46 percent (Fig. 8). Although I cannot obtain precise data on the proportion of contracts with start-ups and venture companies to total procurement from SMEs, I can at least say that the proportion is low because of the characteristics of government procurement described in Chapter 1.

Let me estimate the number of personnel engaged in government procurement because no accurate number of them is announced by any ministry. Except for the central procurement of the JDA, approximately 17,000 people are engaged in procurement in all of the ministries, a number that is derived by applying the ratio of staff members in METI calculated by my experience to the total number of government officials.[13] After 1,000 personnel engaged in the central procurement of the JDA are added, this number will increase to 18,000.

Regulations

The basic regulation for Japanese government procurement is the Law of Account (LoA), and details of regulations are provided by related government ordinances (such as the Ordinance Regarding Budget, Settlement and Account; the Temporary Ordinance Regarding Budget, Settlement and Account; and the Ordinance Providing Special Cases for Procedures of Government Procurement of Goods and Services) and related Ministry of Finance ordinances, such as the Ordinance for Handling Contract Business and the Ordinance Providing Special Cases for Procedures of Government

[13]The ratio of procurement personnel in METI is 150/8,356 = 1.8 percent. Subtracting 24,000 (the number of officials who deal with central procurement in the JDA) from 970,000 (the total number of government officials) gives 946,000; 946,000 multiplied by 1.8 percent is 17,000.

Procurement of Goods and Services. Besides, each government agency enacts its own regulations based on the above law and ordinances. The LoA permits government agencies only three acquisition methods for all kinds of procurement: tendering procedures, selective tendering procedures, and limited tendering procedures. Although a government agency should basically use open tendering procedures for procurement, it can choose, as an exception, selective tendering procedures only when "using the open tendering procedure is needless or disadvantageous for a government agency because there must be a few tenders in the light of the characteristics and purposes of the contract" and "the estimated value of the contract is small," and select limited tendering procedures only when "the characteristics and purposes of the contract do not permit competition," "undertaking competitive procedures is impossible or disadvantageous for a government agency because of urgent needs," "the estimated value of the contract is very small," and "ordinances specifically mention the cases limited tendering procedures applies in." Judging from these variations, the Japanese government seems to have a procurement system in accordance with the variation of characteristics and purposes of procurement. But, there are actually some problems, as outlined below.

No Countermeasures Against the Situation of no Competition

In the cases of selective tendering procedures, although the Ordinance Regarding Budget, Settlement and Account provides details of cases in which the estimated value of the contract is small,[14] it does not define the concrete situation of cases in which there are supposed to be a few tenders in the light of the characteristics and purposes of the contract. In the cases of limited tendering procedures, the Ordinance Regarding Budget, Settlement and Account does not clearly describe concrete situations of the cases in which the characteristics and purposes of the contract do not permit a

[14]The Ordinance Regarding Budget, Settlement and Account, Article 94.

competition and where undertaking competitive procedures is impossible or disadvantageous for a government agency because of urgent needs.[15] Actually, all the interpretations of the provisions depend on the personnel in charge of procurement in each ministry. Descriptions such as "the characteristics and purposes of the contract do not permit competition" and "undertaking competitive procedures is impossible or disadvantageous for a government agency because of urgent needs" leave me with very strange impressions, because I do not believe that, from the standpoint of common sense, there are goods, services, or construction projects anywhere in the world that must not procured competitively or are likely to be procured disadvantageously in case of using competitive procedures. But actually, these provisions are widely applied to procurement cases. For example, the proportions of limited tendering procedures in government information systems procurement from FY1998 to FY2002 were 80.0 percent of the cases and 70.9 percent of the yen amounts involved (Fig. 9, top), and the respective proportions in defense procurement in FY2004 were 35.3 percent and 84.1 percent (Fig. 9, bottom). It is believed that the reason why these figures are very high is that the government procurement systems in Japan regard uncompetitive situations as inevitable and, therefore, have not worked out countermeasures against them.

The Illusion of Awarding a Contract as a Consequence of Price Competition Based on a Complete Notice of Proposed Procurement

It is necessary to disseminate a notice of the proposed procurement including all essential factors except price in order to execute the procurement completely by a price competition that involves open or selective tendering procedures. If a governmental institution acquires commercial

[15]Although Article 99 of The Ordinance Regarding Budget, Settlement and Account shows cases in which the use of limited tendering procedures is allowed, I think the article only shows cases in which "the estimated value of the contract is very small," and "ordinance specially permits the use of limited tendering procedures."

items such as office supplies, it can include all the essential factors in a notice of proposed procurement. If it acquires goods manufactured with high and complicated technologies, such as information systems and defense aircraft, however, it can hardly create a complete notice of the proposed procurement including all the essential factors. Therefore, while all government agencies have tried to establish methods of making a notice of proposed procurement as fruitful as possible, they have introduced "synthetic evaluation and awarding procedures," which are procedures to award a contract after evaluating non-price-related factors as well as price-related factors of sealed bids in order to remove the adverse influence of competition based on price alone. All government agencies use synthetic evaluation and awarding procedures if the Minister of Finance permits,[16] but actually the ratio of points allotted to non-price-related factors is restricted to 50 percent; in other words, great importance is still attached to price competition in the Japanese government procurement system. As a result, even if a government agency procures goods that mainly depend on technologies, a technically superior proposal does not always get the contract.

Qualifications for Participation in Tendering

In the procurement of goods and services, the Japanese government uniformly classifies companies into four ranks from A to D by examining five items: 1) annual average output; 2) the amount of capital; 3) floating capital ratio; 4) the duration of business operations; and 5) the amount of machinery and equipment.[17] This ranking is used for limiting companies eligible to participate in tendering according to the estimated level of procurement. For example, in cases of the procurement of

[16] Article 29-6, Clause 2 of the Law of Account, and Article 91 of the Ordinance Regarding Budget, Settlement and Account.

[17] "*Kyososankasha no Shikaku ni Kansuru Koji* [A Public Announcement Regarding the Qualifications for Participants in the Competition]," January 2006 <https://www.chotatujoho.go.jp/va/com/KOUJI.html>. In the case of public construction, "*Keiei Jiko Shinsa* [An Examination of Management Matters]," <http://www.ekeisin.ne.jp/keisinkai/eas/keisinq.htm>.

manufacturing products or supplying services evaluated at more than ¥30 million ($255,000), only rank A companies are permitted to join in the tendering because only they are supposed to have the financial and technical ability to successfully undertake such a big job. In short, open tendering procedures in the Japanese procurement system are not those by which all interested suppliers may submit a tender, but "selective tendering procedures based on a company ranking system." The bad influence of this practice typically appears in the procurement of software development. Under the recent procurement system, despite the fact that rank C or D companies, which are nearly equivalent to small and medium-sized firms, have enough ability to develop software which costs more ¥30 million, the contract for such software development is awarded to only rank A companies, which are nearly equivalent to large companies. Because companies' qualifications for participation in tendering in Japan are uniformly applied to procurement of all goods or services, there is no variation of tendering procedures according to the characteristics of procurement, and competitive procedures are extremely restricted.

Among above problems, I think the first one is hardly solved and countermeasures to that problem will be related to the policy of promotion of domestic industries in the future.

Defense Aircraft

In the FY2003 budget, the amount of defense aircraft procurement in Japan was about ¥191.3 billion ($1.6 billion). If repairs are included, this figure increases to about ¥550 billion ($4.7 billion). The JDA has four types of aircraft procurement methods: 1) domestic development and production including U.S.-Japan cooperative development and domestic production; 2) licensed production; 3) foreign military sales imports; and 4) general imports. The JDA is strongly inclined to select domestic development and production or licensed production because it is "trying to establish the truly necessary foundations of defense industry and technology" as described in the New National Defense Program

Guidelines. In addition, METI, which has the Aircraft Manufacturing Industry Law, has actively asked the JDA to select domestic development and production or licensed production in order to strengthen the technological level of the domestic aircraft manufacturing industry. Based on an agreement between the JDA and METI, the JDA introduced "the Order of Minister of State for Defense,"[18] which can substantially select a prime contractor for manufacturing a new aircraft from among six domestic aircraft companies and force it to accept the manufacturing quota for other companies, as the reason for using limited tendering procedures. As a result, most of the JDA's principal aircraft are procured through domestic development and production or licensed production (Fig. 10). The problem is not in the type of procurement method, but the use of limited tendering procedures. Although some observers believe that it is difficult to predict whether the price of a rather expensive procured aircraft will be lower if the aircraft is procured by competitive procedures because domestic defense aircraft are only sold on the domestic market and the level of their sales is likely to be small, thinking from the standpoint of a market principle, I can say that the price in competitive procedures will be lower than that in limited tendering procedures. Although that JDA announced a plan called "With a View to the Procurement of Equipment in a New Era – In Order to Establish the Truly Necessary Foundations of Defense Production and Technology" in June 2005, efforts at concrete improvement have just started.

Here, I would like to attempt to estimate the number of personnel in charge of procurement in the JDA. In the JDA, procurement personnel are employed in the Department of Cost Accounting in the Bureau of Finance and Equipment, the Central Contract Office, three Staff Offices, and each Unit and Organization. Among them, only the Department of Cost Accounting and the Central Contract Office officially announce the number of procurement personnel, a total of about 1,000. On the other

[18]Japan Defense Agency, "The Agency's Ordinance Regarding Operation of the Procurement of Products and Services Used by the Japan Self-Defense Force," Article 15.

hand, because none of the other organizations release their figures, I cannot ascertain the correct number of procurement personnel in the JDA.

Information Technology Systems

About 60 percent of the market for information technology systems procured by the Japanese government is occupied by the NTT Group, the NEC Group, the Hitachi Group, and the Fujitsu Group. If six other large company groups (e.g., Mitsubishi Electronics, Toshiba) join in, the proportion of the market occupied by these 10 company groups increases to about 80 percent (Fig. 11). In spite of the appearance that small and medium-sized enterprises can enter this market easily, it is nearly monopolized by large company groups. But, from another point of view, this is one of the results of policies to foster the domestic IT industry. That is because the top four company groups employ about 850,000 people and they maintain the foundations for R&D and production of the newest IT technologies. There are, however, some problems, outlined below, in the government procurement of information systems.

Specifications That Disturb Competitive Procedures

Because almost all the personnel of government agencies in charge of procurement have little knowledge of information systems, they often mention the name of a product mistaking it for a performance factor in specifications for information systems and this seem to disrupt competitive procurement. To be concrete, “Intel X (product name) or other products superior to it” is mentioned as a performance factor in almost all the specifications of government information systems; therefore, Intel’s microprocessors nearly monopolize the government procurement market.

Senseless Lowball Bidding

If an IT vendor gets the first year's contract for the development of information systems, and then continues a few years by bidding an extremely low price for them, for example, bidding ¥11,000 ($93) for the development of systems estimated to cost ¥550 million ($4.7 million),[19] and demands extremely high prices for next years' contracts because of sole-source procurement, the total cost of these information systems is likely to pile up well over the estimated price. Such phenomena occurred frequently during FY2000 and FY2001, and the reason for this is attaching excessive importance to both the single-year budget system and price competition. With regard to improvement of the former, "Model Projects" based on a combination of some exceptional provisions regarding a multiyear budget in the Law of Finance started in FY2004.[20] On the other hand, as to improvement of the latter, although "synthetic evaluation and awarding procedures" have permitted the allotment of 50 percent of the points to nonprice-related factors since 2002, the other 50 percent are still allotted to the bidding price for the first year's contract; in other words, great importance is still attached to price competition. As a result, such the senseless low price bidding still occurred in 2004 when an IT vender bid ¥40,000 ($340) for a system to manage parking violations procured by National Police Agency.

[19]In 2000, when the National Tax Agency procured an experimental system for the development of a system for electronic payment of taxes, NTT DATA Corporation bid ¥11,000 for that system, which was estimated to cost ¥550 million, and got the contract.

[20]Cabinet Office website <http://www.keizai-shimon.go.jp/explain/progress/model/index.html>.

Bad Effects of Voluntary Measures Added to the WTO Agreement on Government Procurement

Because the Japanese government adds voluntary measures to the WTO agreement,[21] it often takes five months or more from the request for information to the award of the contract to procure a networked information system costing more than 100,000 Special Drawing Rights (SDR). Therefore, such problems as shortening the term of system development in the case of single-year procurement, the deterioration of the quality of the completed system because of the short development term, and the increase of both time and cost because of extending the development term to the next fiscal year, have arisen.

In order to address those problems, the Japanese government decided on "A Program for the Creation of the Next-Generation Electric Government (PNGEG)"[22] in 2003 and revised it in 2004. It also concluded "An Agreement on Revising the Regulations Applied to the Procurement of Information Systems (ARRPIS),"[23] which was finally agreed upon by all government agencies on March 30th, 2004. The Japanese government introduced Enterprise Architecture (EA), which U.S. government has tried to establish since 1996, into PNGEG as Optimization Plans for Each Operation and System, and, under these Plans, every government agency has made an effort to create ideal information systems appropriate for its operations. Besides, under PNGEG, each government agency established a Chief Information Officer (CIO) and CIO aides in order to strengthen its ability to procure and manage information systems. In other words, ARRPIS provides various practicable

[21]The Promoting Committee for Implementation of Action Programs, "Measures on the Procurement of Products and Services Related to Computers in Japanese Public Sectors," January 1992, and "The Measures on the Procurement of Appliances and Services Related to Telecommunications in Japanese Public Sectors," March 1994 <http://www5.cao.go.jp/access/japan/chans/tekiyou.html>.

[22]The CIO Council of the Japanese Government, "*Denshi Seifu Kochiku Keikaku* [A Program for the Creation of Next-Generation Electric Government]," Decided on 17 July 2003; revised on 14 June 2004.

[23]The Council on Government Procurement of Information Systems, "*Joho Shisutemu ni Kakaru Seifuchotatsu Seido no Minaoshi ni Tsuite* [An Agreement on Revising the Regulations Applied to the Procurement of Information Systems]," finally decided on 30 March 2004.

methods of improving procurement procedures in keeping with current frameworks of laws and ordinances.

Start-ups and Venture Companies

There are no regulations aimed at encouraging start-ups and venture companies in the market for government procurement. But there is a Cabinet Determination and an Agreement by All Government Agencies (AAGA), which request each agency to be attentive to start-ups and venture companies when they procure goods, services, and construction. In a Cabinet Determination named the Policy on the Public Sector's Contracts with SMEs based on the fourth article of the Law Regarding Setting Aside Contracts of Public Procurement for SMEs, there is one provision established in FY2002 regarding the support of start-ups and venture companies.[24] AAGA called it the Plan for Increasing Procurement of Information Systems from Venture Companies. Enacted on March 31st 2004, it demands that each government agency take such measures as dividing the scale of procurement into small units so that venture companies can bid for contracts in competition with large companies.

In addition, the Japanese style of SBIR program,[25] introduced into the Law of Promotion of Creating New Business in 1998, must not be forgotten. Although that program set aside R&D grants amounting to ¥31 billion ($263,360,000) in FY2005 for venture companies, it includes hardly any R&D funds for defense and aerospace which, in the case of the United States, constitute a large portion of SBIR and STTR programs. The Japanese style of SBIR program still has insufficient amounts and contents. As to the data on the number of procurements from start-ups and venture companies, there

[24]2 (12) of a Cabinet Determination named the Policy on The Public Sector's Contracts with SMEs.

[25]Small and Medium Enterprises Agency, "Small Business Innovation Research Program" <http://www.chusho.meti.go.jp/keiei/gijut/sbir/index.html>.

are no official figures in Japan because the Japanese government has no official definitions of start-ups and venture companies.

Other Areas

When the Japanese government procures materials, parts, goods and services that contribute to the reduction of burdens on the environment based on the Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (2000), it can make announcements of procurement completed at a high level and can use synthetic evaluation and awarding procedures because that law provides the necessary factors for procurement. This procurement system is worthy of notice because it also creates the market and strengthens competitiveness of goods and services that contribute to the reduction of the burden on the environment.

CHAPTER 3

REGULATIONS AND OUTLINES OF GOVERNMENT PROCUREMENT IN THE UNITED STATES

Overview

Basic laws regarding U.S. government procurement – such as the Competition in Contracting Act (1984), the Federal Acquisition Streamlining Act (1994), and the Federal Acquisition Reform Act (1996) – have been put into effect, and their overall structure can be grasped by reading TITLE 10, 40, and 41 of United States Code (USC). The details of procurement regulations are prescribed by the Federal Acquisition Regulation (FAR). Assistance to small business concerns in government procurement is described in 15 USC Chapter 14A. Procurement of information systems is described in 40 USC Chapter 113. In these laws and regulations, there are provisions that are similar to those in Japan, such as sealed bids, simplified acquisition thresholds, small business set-asides, use of noncompetitive procedures, qualification requirements, multi-year contracts, and acquiring energy- and water-efficient products and services. On the other hand, the U.S. procurement system has the following points that differ from the Japanese.

1) Specific provisions are applied to the procurement of information systems,[26] to that of architectural and engineering services,[27] and to that of the design and construction of a public building, facility, or work[28] by the DoD, the Coast Guard, and NASA.[29]

[26]Section 266a of 41 USC and Chapter 113 of 40 USC.

[27]Design-bid-build: Sections1101-04 of 40 USC.

[28]Two-phase selection: Section 253m of 41 USC.

[29]10 USC for DoD, 14 USC for the Coast Guard, Chapter 26 of 42 USC for NASA.

2) Competitive proposals are provided as established procurement procedures, which include evaluations of both cost or price and factors other than cost or price, and, if necessary, discussion with the bidders.

3) A solicitation for the award of a development contract for a major system requires that a bidder include in its offer proposals to incorporate in the design of the major system items that the U.S. government will be able to acquire competitively in the future.

4) Contracts awarded after using procedures other than sealed-bid procedures may include incentive contracts.[30]

5) Each federal agency uses performance-based management and, if necessary, terminates an acquisition program that is significantly behind schedule, over budget, or not in compliance with performance or capability requirements. On the other hand, Japanese government agencies – almost without exception – complete an acquisition program even if it is virtually a failure.

6) The Federal Procurement Data System discloses fruitful information on procurement data.

7) SBIR and STTR programs assure that each qualified and interested small business concern will have the opportunity to participate in federal agency procurement relating to R&D.

8) A federal agency may provide for the procurement of property or services using competitive procedures, but excluding a particular source, in order to establish or maintain any alternative source or sources of supply for that property or service

9) The Buy American Act requires only such articles, materials, and supplies as have been mined or produced or manufactured in the United States to be acquired for public use unless federal agencies shall determine it to be inconsistent with the public interest or the cost to be unreasonable.

[30]Section 254 of 41 USC.

These differences between the systems of the two countries can be divided into the two following categories.

Building Plural Procurement Systems Appropriate for Various Characteristics of Goods and Services

This category includes 1) to 6) above. Thanks to plural procurement systems appropriate for various characteristics of goods and services, for example, federal defense procurement maintains competitive conditions (Fig. 12). The nine types of contracts resulting from plural procurement systems are provided in Chapter 16 of FAR (Fig. 13). While the Japanese government procurement system has basically only one type of fixed-price contracts, which correspond to firm-fixed-price contracts in the United States, it is amazing that, in the United States, federal government procurement systems have nine types of contracts. The Japanese government needs to examine which type of contracts should be introduced into its procurement system after scrutinizing the characteristics, advantages, and disadvantages of each.

Building Procurement Systems to Develop and Modernize Domestic Industries

This category includes 7) to 9) above. Here, I would particularly like to mention the effects of R&D executed by SMEs and commercialization of the results of that R&D in SBIR and STTR programs. The SBIR program started in 1983 based on the Small Business Innovation Development Act, which stipulates "that assistance be given to small-business concerns to enable them to undertake and to obtain the benefits of research and development in order to maintain and strengthen the competitive free enterprise system and the national economy." Under the SBIR program, each federal agency that has an R/R&D budget in excess of $100 million for FY1992 or any fiscal year thereafter must expend with small business concerns not less than 2.5 percent of the total in each fiscal year in the form of grants or awards through a three-phase procedure. In FY2004, there were 10 such

agencies; at the same time, there were 4,638 phase I awards and 2,013 phase II awards, with the total amounting to $1,867 million.[31] On the other hand, the STTR program started in 1994 based on the Small Business Research and Development Enhancement Act. The STTR program assists R/R&D conducted jointly by a small business concern and a research institution, whereas the SBIR program supports R/R&D conducted independently by a small business concern. Under the STTR program, each federal agency gives small business concerns grants or awards relating to R/R&D through a three-phase procedure. In FY2004, there were 654 phase I awards and 188 phase II awards, with a total expenditure of $210 million.[32]

The SBIR program has continued for about 20 years, and, according to the Small Business Administration's estimate, more than 39 percent of its phase II projects have resulted in a commercialized product or service. In addition, according to a quantitative analysis on changes in employment and sales of both SBIR phase II awardees and matching firms from 1985 to 1995, done by Harvard Business School Professor Josh Lerner,[33] although the SBIR awardees enjoyed substantially greater employment and sales growth than matching firms that decade, these effects were not uniform, but confined to firms in areas that attracted significant venture financing (Figure 14).

The Number of Personnel

The number of personnel in charge of the procurement and the amount of procurement in the General Services Administration (GSA), DoD, and NASA are estimated below by using public materials.

[31]United States Small Business Administration "The Small Business Economy: A Report to the President 2005" 54.

[32]United States Small Business Administration's website (http://www.sba.gov/sbir/indexsbir-sttr.html).

[33]Josh Lerner, "The Government as Venture Capitalists: The Long-run Impact of the SBIR Program." Boston: Division of Research, Harvard Business School, 1996.

- GSA: about 13,000 personnel for $6.6 billion in procurements.
- DoD: about 140,000 personnel for about $230 billion in procurements.
- NASA: about 19,000 personnel for about $12 billion in procurements.

For example, in the case of the GSA, it can be calculated that the amount of procurement per employee involved is about $510,000. On the other hand, with 17,000 personnel engaged in every Japanese ministry and agency's procurement (except for the central procurement of JDA) and in charge of ¥10.3 trillion ($87 billion), it can be calculated that the amount of procurement per person is about ¥605 million ($5,138,870). In other words, the amount of procurement per staff member of almost all Japanese ministries and agencies is about 10 times as large as that of GSA. For this reason, GSA personnel can implement procurements more carefully than their counterparts at Japanese ministries and agencies. This "time to spare" creates the various differences between the procurement systems in the United States and Japan.

CHAPTER 4

OTHER REGULATIONS RELATed TO GOVERNMENT PROCUREMENT

WTO Agreement on Government Procurement

The WTO Agreement on Government Procurement was issued in January 1996, and several points below are worth noting.

1) Entities shall not seek or accept, in a manner which would have the effect of precluding competition, advice that may be used in the preparation of specifications for a specific procurement from a firm that may have a commercial interest in the procurement (provided by Article 6).

2) The agreement approves only three procedures – open tendering procedures, selective tendering procedures, and limited tendering procedures (provided by Articles 7, 10, and 15). Limited tendering procedures may be used when an entity procures prototypes or a first product or service that are developed at its request in the course of, or for, a particular contract for research, experiment, study, or original development (provided by Article 15(e)).

3) Any conditions for participation in tendering procedures shall be limited to those that are essential to ensure the firm's capability to fulfill the contract in question (provided by Article 8(b)).

4) In open procedures, the period for the receipt of tenders shall not be less than 40 days from the date of publication. In selective procedures, the period for submitting an application to be invited to tender shall not be less than 25 days from the date of publication, and the period for receipt of tenders shall in no case be less than 40 days from the date of issuance of the invitation to tender (provided by Article 11).

5) A party may provide for entities to conduct negotiations (provided by Article 14).

6) Exceptions to the Agreement (provided by Article 23).

Taking these points into consideration, I will now examine a desirable direction of the reform of the Japanese government procurement system.

The EU[34]

The process of selecting a contractor and the degree of competition are as follows.

1) Open procedures: All interested and qualified contractors may submit tenders in this procedure. The criteria on which the contracting authorities shall base the award of contracts shall be either the lowest price only, or, when the award is made to the most economically advantageous tender, various criteria according to the contract such as price, period for completion, running costs, profitability, and technical merit.

2) Restricted procedures: Only qualified contractors invited by the contracting authority may submit tenders in this procedure. The criteria on which the contracting authorities shall base the award of contracts shall be the same as those of open procedures.

3) Negotiated procedures: Contracting authorities consult qualified contractors of their choice and negotiate the terms of the contract with one or more of them. The criteria on which the contracting authorities shall base the award of contracts shall be various criteria according to the contract such as price, period for completion, running costs, profitability, and technical merit.

The EU has no regulation related to setting aside for SMEs. At least the United Kingdom, France, and Germany, however, do have such kinds of regulations.

As to qualification for participation in the contract, member states that have official lists of recognized contractors must adapt them to the provisions of Article 24 (a) to (d) and (g) (disqualification criteria) and of Articles 25 (requirement to prove the contractor's enrollment in the

[34]The EU's website regarding procurement <http://europa.eu.int/comm/internal_market/publicprocurement/index_en.htm>.

professional or trade register), 26 (evidence of the contractor's financial and economic standing), and 27 (evidence of the contractor's technical capability) of Council Directive 93/37/EEC of 14 June 1993.

CONCLUSION

General Direction of Reform in Government Procurement Systems in Japan

I propose the following general direction of reform in government procurement systems in Japan:

1) The purpose of reform: Creation and maintenance of the state of competition in the government procurement market and reinforcement of the competitiveness of domestic industries through creating and establishing new industries and technologies by combining government procurement with private funds.

2) The contents of reform: Creation of the procurement system (procurement and contract methods) that enables the procurement of "best value" goods or services in accordance with the characteristics of various procurement areas, in other words, which is necessary to realize "1) the purpose of reform."

3) Establishment of the foundation of procurement: Establishment of the structure and publication of information in order to realize "2) The contents of reform" and fair procurement.

I will first explore common countermeasures to give shape to the above items and then point out countermeasures for each procurement area.

Common Countermeasures

Revision of the Law of Account and the Related Ordinances and Stipulation of Escape Clauses

So as to create a procurement system (procurement and contract methods) that allows the procurement of "best value" goods or services in accordance with the characteristics of various procurement areas, it is necessary to move beyond the limitations of interpretation of the LoA and the

related ordinances. In other words, we should either 1) directly revise the LoA and the related ordinances, or, 2) stipulate escape clauses of the LoA and the related ordinances in other individual laws and ordinances in order to secure desirable procurement systems legitimately. It is pertinent for me to provide basic principles in the LoA and the related ordinance and stipulate escape clauses of them peculiar to each procurement area in each area's individual law and ordinance.

Establishment of the Structure for Implementation and Management of Procurement

It is essential that the structure for implementation and management of procurement in each government agency be established so as to perfect specifications and announcements and to create the best procurement procedures and types of contract. As noted in Chapter 3, since Japanese government agencies have less procurement personnel than their U.S. counterparts, they need to increase their professional staff in order to complete the structure for implementation and management of procurement. On the other hand, however, the Japanese government must avoid a situation in which the "increase of professional personnel equals the increase of government officials in charge of procurement." This is because calls for "small government" have recently become louder and louder. A solution to this problem is that, while each Japanese government agency hires the minimum number of officials in charge of procurement, in order to lighten the burden per procurement staff, it actively introduces information systems for supporting procurement procedures and outsources simple work. In addition, over the medium and long term, the Japanese government should reduce the amount of procurement and aim to become small government. With regard to realizing fair procurement, it is necessary for the Japanese government to complete provisions related to disclosure of information in the LoA and the associated ordinances and to establish the structure of prompt and thorough disclosure of information.

Countermeasures for Reform in Procurement of Defense Aircraft

In examining the creation of the best procurement procedures and types of contract for defense aircraft in Japan, the aim should be to create the mechanisms most suitable to actual circumstances because this area is an exception to the WTO agreement. The characteristics of defense aircraft are that their speculations are technologically advanced and complicated and that they need foundations for "better, speedier, cheaper" procurement. Therefore the best procurement procedures are expected to be based on "competitive proposals," "competitive procedures but excluding a particular source," and "two-phase selection." The best types of contract are expected to be based on "incentive contracts." Besides, in order to adopt superior technologies and products in a private business, the U.S. style of SBIR and STTR programs should be introduced. It seems appropriate that the above reform items be provided in the Law of Establishment of the JDA or the Science and Technology Basic Law (STBL) as escape clauses of the LoA. As to the establishment of the structure and the publication of information, it is necessary to strengthen the function of Department of Cost Accounting and Central Contract Office and to stipulate provisions related to the disclosure of information in the LoA and the Law of Establishment of the JDA from the standpoint of defense.

Countermeasures for Reform in Procurement of Information Systems

In examining the creation of the best procurement procedures and types of contract for Japanese government information systems, it is necessary to consider which type of system is applied by the WTO agreement. I think it is pertinent to consider that systems related to essential security interests are exceptions, while others are covered by the WTO agreement. Therefore, internationally consistent procurement procedures and types of contracts should be established as basic rules and they should be applied selectively to exceptional types of information systems. Because the procurement of information systems needs technologically advanced and complicated speculations, the best

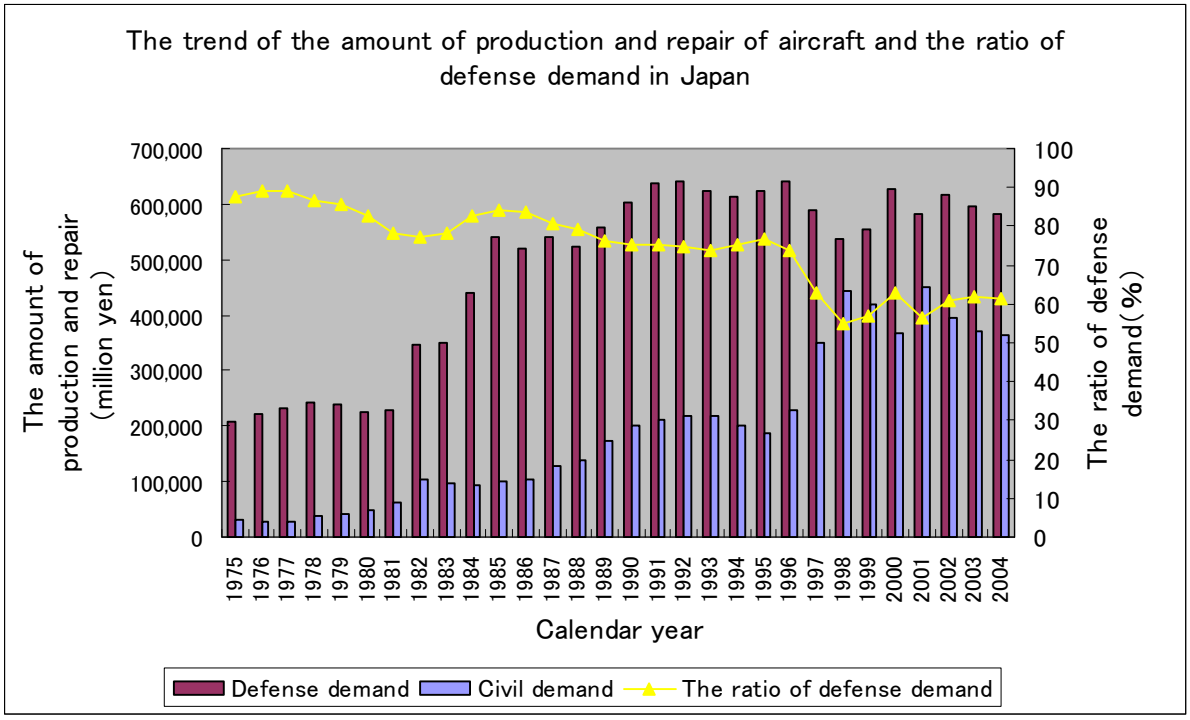
procurement procedures are expected to be based on “competitive proposals,” and qualification for participation is expected to be suitable for the actual circumstances of procurement. The best types of contract are expected to base on “incentive contracts” made by “performance-based contracting.” In addition, in order to adopt superior technologies and products in private businesses, the U.S. style of SBIR and STTR programs should be introduced. We should not forget the revision of voluntary measures to the WTO agreement. This is because, from the viewpoint of progress of information technology, the recent situation differs from that of 1994 when voluntary measures were stipulated; it is possible to shorten the term of request for opinions and announcement without harming the substantial benefits of the bidders. It seems appropriate that the above reform items be provided in the Basic Law on the Foundation of an Advanced Information and Telecommunications Network Society (BLFAITNS) or STBL as escape clauses of the LoA. As to the establishment of the structure and the publication of information, it is necessary to set up the management structure for procurement of information systems based on CIO and CIO aides and to stipulate proper provisions related to disclosure of information in the LoA or BLFAITNS.

Countermeasures for Reform in Procurement from Start-ups and Venture Companies

The best procurement procedures and types of contract for fostering start-ups and venture companies are those based on the U.S. style of SBIR and STTR programs. The first product or service developed in such programs is to be procured by limited tendering procedures, and that procurement is in accord with the WTO agreement. The qualifications of SMEs and venture companies for participation in tendering are expected to be suitable for the actual circumstances of each procurement area, such as information systems and working services. Because the Japanese style of SBIR program does not specify the prioritized areas of R&D like the U.S. style of SBIR and STTR programs and there is no program like the U.S. style of STTR program, which assists in R/R&D conducted jointly by

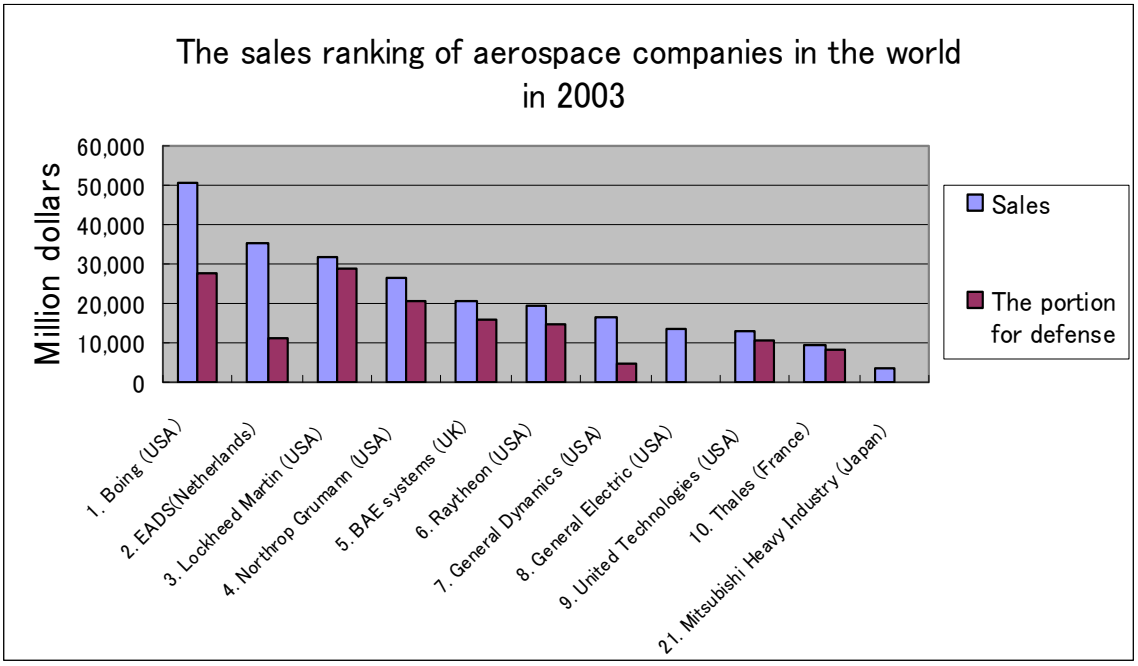
a small business concern and a research institution in Japan, the introduction of these good points of U.S. style of SBIR and STTR programs should be considered. It is necessary to provide escape clauses of the LoA and specify the prioritized areas of R&D in order to change the Japanese style of SBIR program into the U.S. style of SBIR and STTR programs, and it seems appropriate that escape clauses of the LoA are provided in STBL and that prioritized areas of R&D are specified in the Basic Plan on Science and Technology based on STBL. As to the establishment of the structure and the publication of information, it is necessary to establish in each procurement institution a structure that can select SMEs that have the ability to execute R&D under SBIR and STTR programs and manage R&D contracts and to stipulate proper provisions related to the disclosure of information in the LoA or the STBL.

Figure 1. Domestic Aircraft Production and Repair



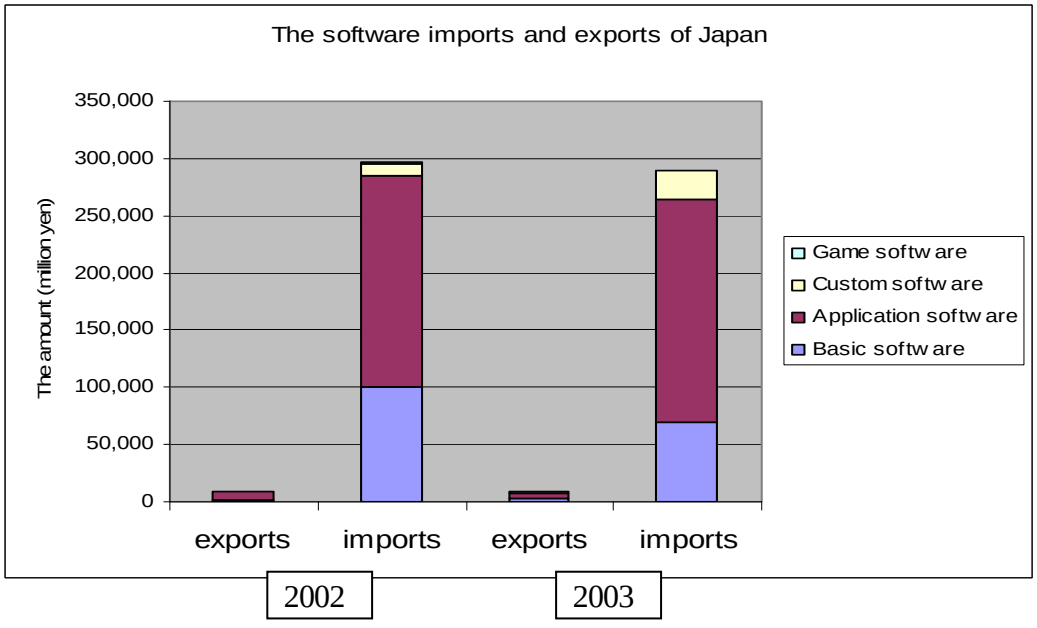
Source: Japan Aircraft Development Corporation, "A Collection of Data on Aircraft (Version of March 2005): Chapter VIII The Present Situation of the Aircraft Industry,"14.

Figure 2. The Sales Ranking of International Aerospace Companies



Source: Japan Aircraft Development Corporation, "A Collection of Data on Aircraft (Version of March 2005): Chapter VIII The Present Situation of the Aircraft Industry," 3, 6.

Figure 3. Japan's Software Imports and Exports



Source: Processing the data of the Japan Information Technology Services Industry Association's "Research on International Trade of Computer Software and Working of Foreign Employees in 2004"

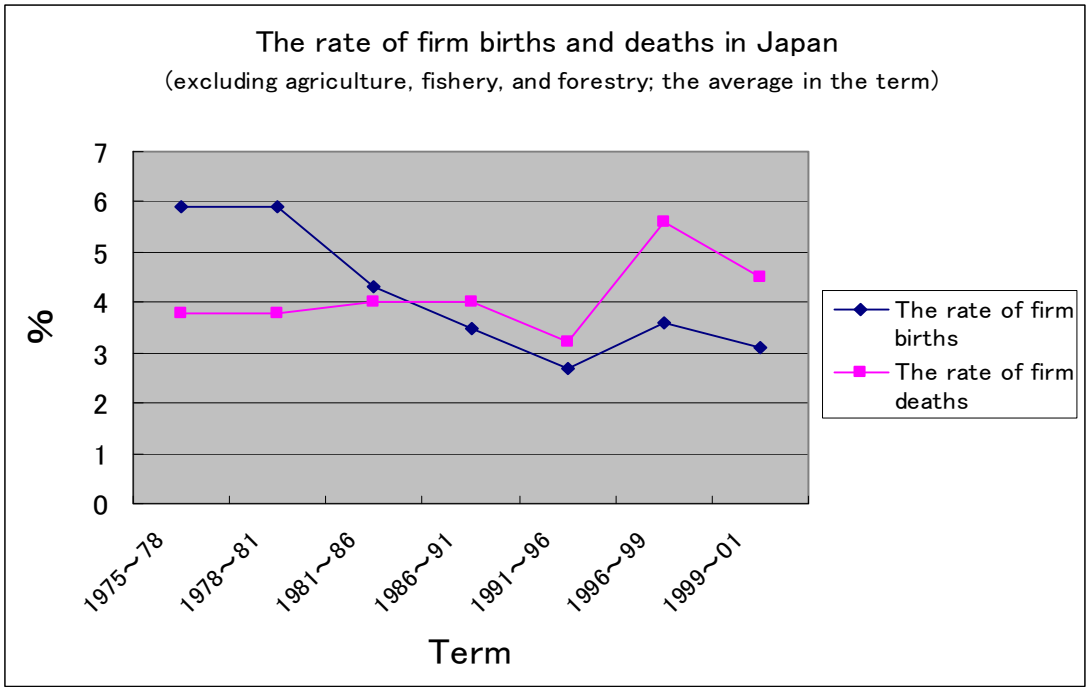
Figure 4. Shares of the World Markets of IT Products in 2004

Shares of the world markets of IT products in 2004

Products			The ratio of top share company or brand	The ratio of top share country
Computers	Server		IBM 33.2%	USA 79.8%
	PC		DELL 15.0%	USA 34.4% and more
Equipments around computers	Storage	Disk array	HP 26.5%	USA 70.2%
		HDD (3.5 inches)	Seagate 28.9%	USA 67.3%
		HDD (below 2.5 inches)	Hitachi 50.6%	Japan 94.9%
		CD、DVD、MO	DVD :NEC 24.0%	DVD :Japan 64.5%
	Printer	Razor	Color:HP 33.0%	Color:Japan 42.0%
		Ink jet	HP 39.7%	USA 53.2%
Software and Services	OS	Server	Microsoft 55.1%	USA 65.0%
		Client	Microsoft 93.8%	USA 96.7%
	Package software		Microsoft 14.6%	USA 31.1% and more
	Services		IBM 8.0%	USA 18.0% and more

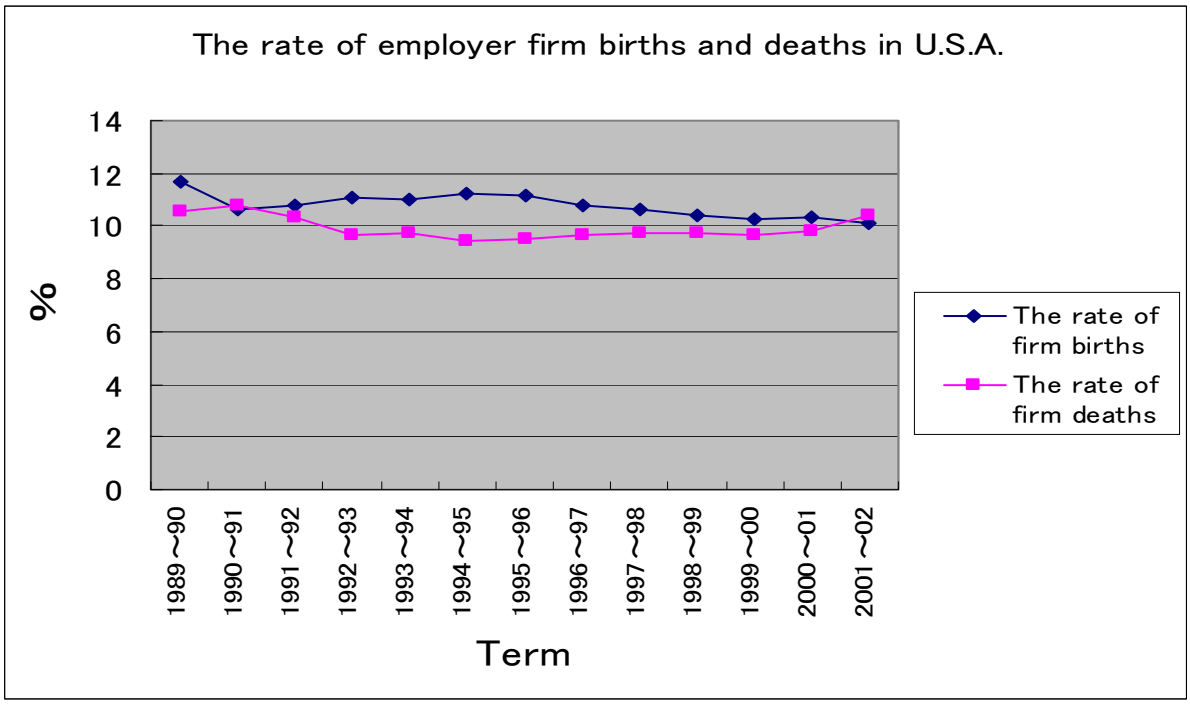
Source:METI research in 2005

Figure 5. The Rate of Firm Births and Deaths in Japan



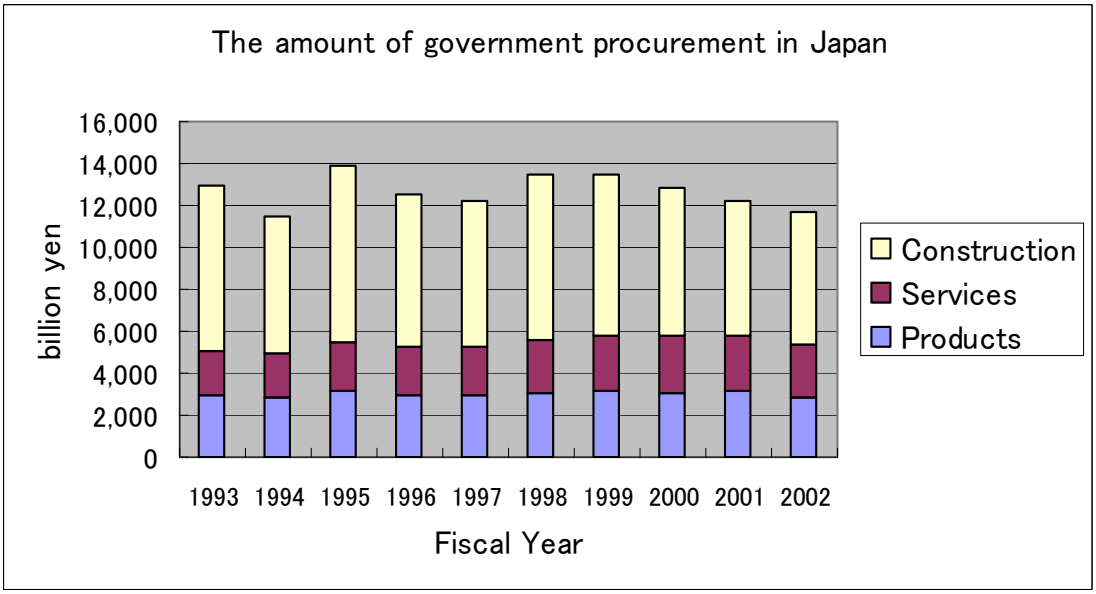
Sources: Small and Medium Enterprise Agency, "2003 White Paper on Small and Medium Enterprises in Japan": Part II, Chapter 2, Section 1, Figure 2-2-2.

Figure 6. The Rate of Employer Firm Births and Deaths in the United States



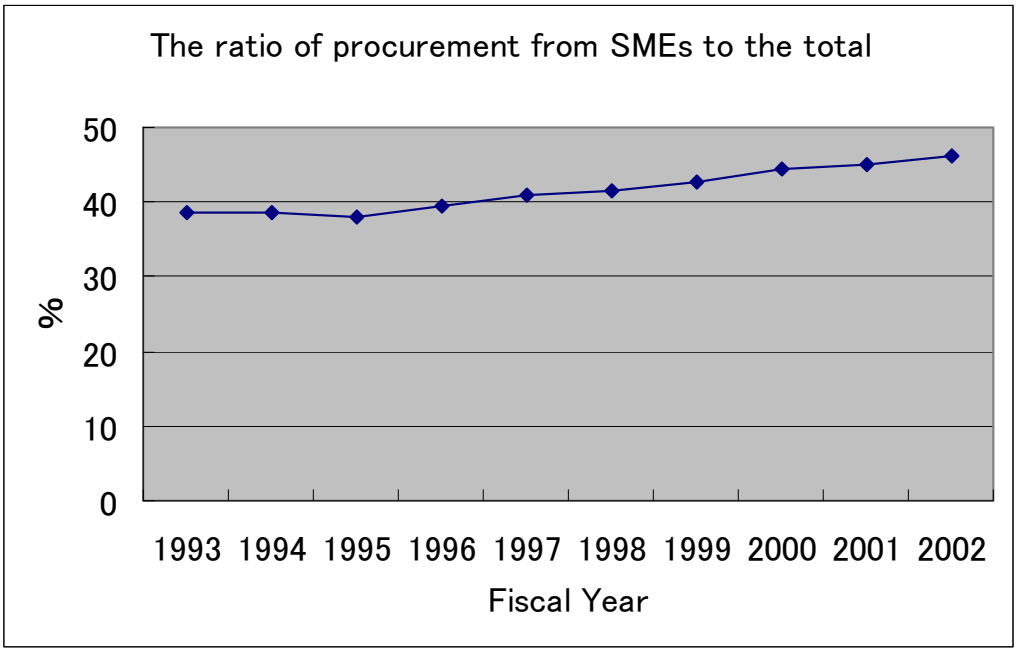
Sources: Processing the data of the United States Small Business Administration's *The Small Business Economy: A Report to the President 1998* and *The Small Business Economy: A Report to the President 2005*.

Figure 7. The Amount of Government Procurement in Japan



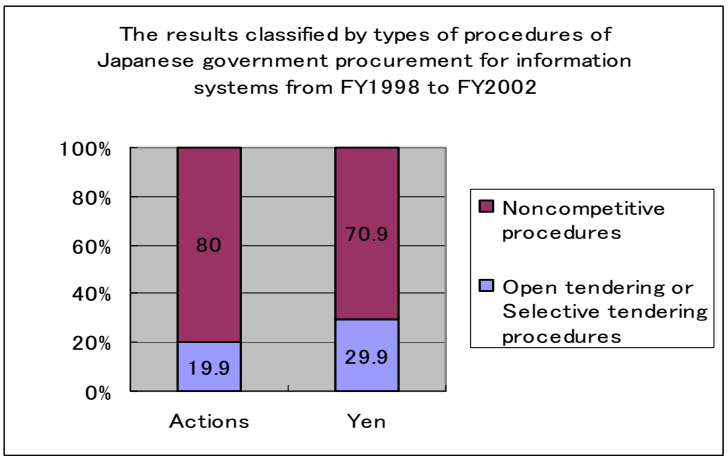
Source: Processing the data of Materials for Reference No. 12 in "An Interim Report of the Sectional Meeting on the Basic Policy in The Small and Medium Enterprise Policy-Making Council and the Sectional Meeting on Dealings in the Subcommittee on Business Support of Small and Medium Enterprises, Consideration of the Future Status of the Government Procurement Policy," June 2004.

Figure 8. The Ratio of Procurement from SMEs to the Total

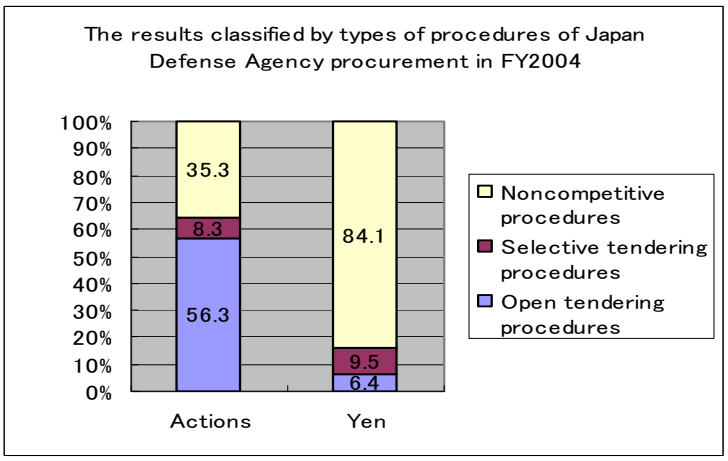


Source: Processing the data of Materials for Reference No. 1 in "An Interim Report of the Sectional Meeting on the Basic Policy in The Small and Medium Enterprise Policy-Making Council and the Sectional Meeting on Dealings in the Subcommittee on Business Support of Small and Medium Enterprises, Consideration of the Future Status of the Government Procurement Policy," June 2004.

Figure 9. Actual Results Classified by Types



Source: Processing the data of the Board of Audit of Japan's "*Kuni no Joho Shisutemu no Chotatsu ni Kansuru Keiyaku to Gyosei no Johoka no Suishintaisei ni Tsuite* [Report on Contracts of the Procurement of Government Information Systems and the Structure of Promotion of Electric Government]." **Date**



Source: Processing the data of Japan Defense Agency's "*Chuochotatsu no Gaikyo Heisei 17-nendo-ban* [The General Condition of Central Procurement: Version of FY2005]": Chapter 6.

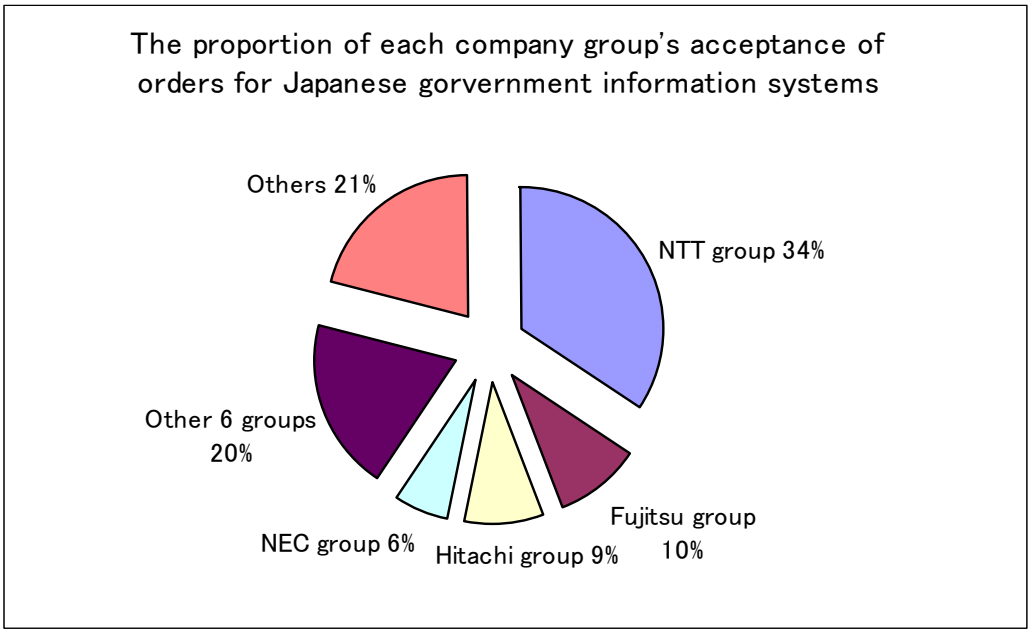
Figure 10. The Classification by Contract Types of the JDA's Principal Aircraft in FY2005

Domesitic production (including joint R&D with U.S.A.)	JGSDF	LR-1、OH-1
	JMSDF	-
	JASDF	F-1、F-2A/B、C-1
Domestic production licensed by foreign companies	JGSDF	AH-1S、OH-6D、UH-1H/J、CH-47J/A、UH-60JA
	JMSDF	P-3C、SH-60J、SH-60K、
	JASDF	F-15J/D J、F-4EJ、CH-47J
Import by Foreign Military Sales	JGSDF	-
	JMSDF	-
	JASDF	C-130H、E-2C、E-767
General import	JGSDF	LR-2
	JMSDF	MH-53E
	JASDF	-

JGSDF=Japan Ground Self Defense Force, JMSDF=Japan Maritime Self Defense Force, JASDF=Japan Air Self Defense Force

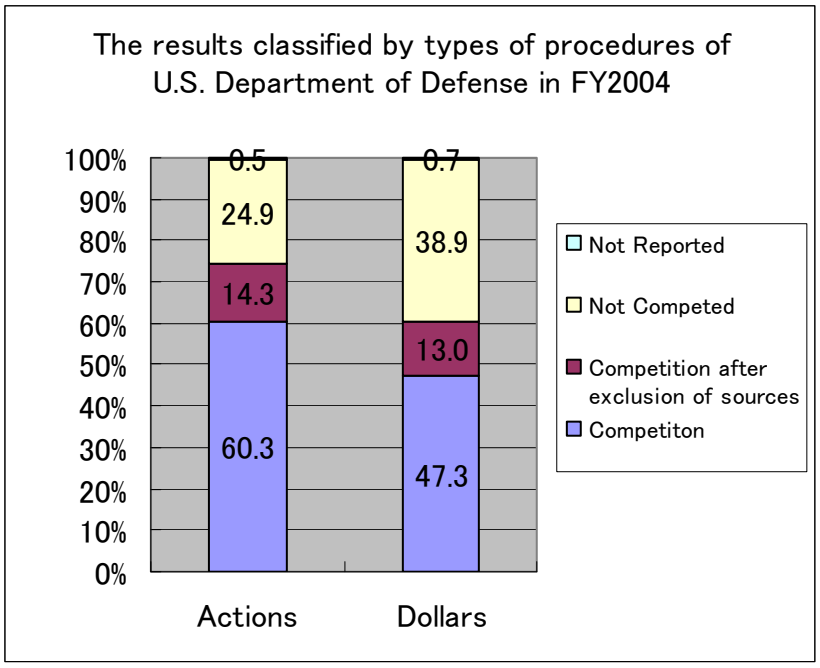
Source: Japan Defense Agency, "*Heisei 17 nen ban Bouei Hakusyo* [Defense of Japan 2005 White Paper]" Material No. 21

Figure 11. The Proportion of Each Company Group's Acceptance of Orders for Japanese Government Information Systems



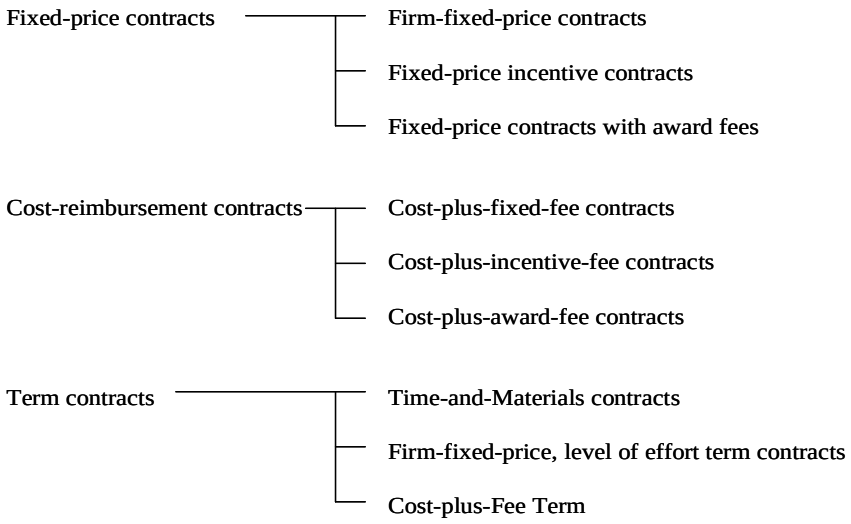
Source: The Conference of IT Associates, "*IT Asoshieito Kyogikai Chuukan Hokokusho* [An Interim Report of The Conference of IT Associates]," 9.

Figure 12. The Results Classified by Types of Procedures of the U.S. Department of Defense in FY2004



Source: Processing of the data of the Federal Procurement Data Center's *Federal Procurement Report, FY2004.*

Figure 13. Types of Contracts in Federal Acquisition Regulation (FAR)

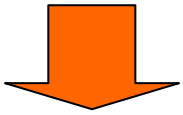


Source: FAR

Figure 14. Comparison and Analysis of the Growth of SBIR Phase II Awardees and Matching Firms, by Location, 1985-1995

Firms Located in areas with an Early-Stage Venture Financing, 1983-1985	Change in Employment	Change in Sales (million $)
SBIR Phase II Awardees	47.43	9.03
Matching Firms	-4.61	1.23

Firms Located in areas without an Early-Stage Venture Financing, 1983-1985	Change in Employment	Change in Sales (million $)
SBIR Phase II Awardees	13.14	2.58
Matching Firms	9.9	2.02



SBIR awards had a strongly positive impact on firms that were in areas simultaneously receiving venture financing.

Source: Josh Lerner, "The government as venture capitalist : The long-run impact of the SBIR program." (Boston, Division of Research, Harvard Business School, 1996)

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