

Japan's Innovation of Public Organizations in the Research and Development Field

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Abstract The Japanese government implemented drastic restructuring of the central government in 2001. As a part of this reform, the incorporated administrative agency (IAA) system was newly introduced in view of carrying out certain public functions in a more flexible, business-like and autonomous way. Research and development activities in the public sector are now mostly conducted by the incorporated administrative agencies. In this article, the purpose of this reorganization is firstly described followed by the outline of this system and current accomplishments. In concluding, the Japanese undertaking of a new public organization is analyzed in comparison with the European and “Anglo-Saxon” countries.

Keywords Ex post facto evaluation · Incorporated administrative agency · Public corporation · Research and development activities · Third party evaluation

Introduction—Objective of this Article

Roles and functions of the government of state and ways of performing these functions vary from country to country and from time to time, depending largely upon the degree or stage of economic and social development of the country. In the outset of the 21st century, Japan introduced a new system, the incorporated administrative agency (IAA) system with a view to institutionalizing more flexible and autonomous management of certain public activities including research and development. By now, nearly 5 years have passed since the introduction of the IAA system and the first round of overall review of the IAAs has been almost over. This article briefly reviews the evolution of public organizations in Japan with a focus on

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research and development, describes the outline of the IAA system and analyzes the current accomplishments based on the available financial data. By doing this, I would like to deliver the substantial information about the IAA system and show how successful the current outcomes are. In concluding, I would like to locate the Japanese undertaking among the current public reform undertakings of the European and 'Anglo-Saxon' countries.

Evolution of Public Organizations: Overview

In the mid-19th century (1868) when the Meiji government was organized and started modernization of the country after more than 200 years of seclusions, the Japanese economy and society was not yet free from the elements of the feudal age. In contrast to it, advanced western countries had already been through with industrial revolutions and developed new markets around the world, especially in Asia.

Under such circumstances, the Meiji government of Japan set its goal of joining these most developed nations in the world, getting along with them and catching up with them. In order to realize this goal, it began to take initiatives of modernizing the economy and society. Thus, various activities from national goal setting and policy making to education and research and development (R&D), and even operations of factories and works using advanced western technologies began to be carried out by the government itself. While almost all the state-owned factories and works were sold out and privatized long before World War II, the central government realized the importance of education and continued to establish national universities and other kinds of advanced education institutions before and after World War II. Japanese government-led economy with relatively high standard of education and diligence of people achieved a miraculous recovery and development from the mid-1950s to the 1970s.

In the government, there are wide ranging activities besides core governmental activities such as policy planning and decision-making. Public facilities such as universities, hospitals, museums, R&D institutions and others have been established as a part of ministry organization and their employees have been regarded as civil service.

During the post war period and years of high economic growth, a number of public corporations were also established to effectively and efficiently carry out public projects, programs and measures by the way of management of independent corporation or enterprise. They are separate from ministries but have close working relationship with their supervising ministries. Their employees are not employees of ministries and not civil service, either. Projects, programs and measures carried out by public corporations included constructing highways, airports and other infrastructures, providing loans and other financial assistances, promoting science and technologies such as R&D for space development, atomic energy exploitation and other physical, chemical and biological sciences, etc.¹

After two oil crises in the 1970s, the financial conditions of the government got bad with huge accumulating deficits. Stimulated by the stringent financial conditions

¹ The basic information concerning the public corporation in Japan is given by Administrative Inspection Bureau, Management and Coordination Agency (1991, 1997).

and the necessity of reform of the government, Mr. Nakasone, first as a minister of state for administrative management and then as the prime minister, launched a government-wide administrative reform program in 1981 and examined systems and operations of ministries and public corporations.² Privatization of National Railways and Telephone and Telegraph were two successful examples of his reform undertakings. Public corporations engaged in R&D activities were also required to be efficient and to limit their activities only where they were regarded necessary, considering the nature of R&D and the capabilities of the private sector. But most of R&D public corporations could avoid a fatal treatment, namely the abolition of corporation.

In 1996, Prime Minister Hashimoto started a government-wide drastic reform undertaking of the central government. This undertaking resulted in the drastic reorganization and streamlining of ministries and agencies in January 2001.³ As a part of this reform undertaking, an incorporated administrative agency system was introduced in order to streamline organizations of ministries and agencies and also to institutionalize more flexible and autonomous management of certain public activities, which are not core policy-making activities of the government. Most of the research institutions, which had been established as a part of ministry organization, were separated and transformed into incorporated administrative agencies in April 2001. The reform undertaking has been extended to public corporations. After the close examination, many R&D public corporations were also transformed into incorporated administrative agencies, mostly in October 2003.

Research Institutions in the Government

As mentioned above, the government carries out various kinds of activities such as policy making, defense, diplomacy, law enforcement, R&D, administering pension and insurance systems, managing museums, hospitals and universities and so on. While the central units of ministries are in charge of core activities such as policy making under the direction of minister, the auxiliary units of ministries were established usually to conduct R&D, and to manage museums, hospitals, universities and so on to support policy making functions or to implement public programs and measures.

As to science and technology area, government research institutions have been in charge of R&D activities, which are so basic and long-term or highly risky that the private sector could not or would not engage in. Government research institutions covered such research areas as material science, earth science and disaster prevention research, aerospace research, radiological science, health and nutrition research, occupational health research, agricultural and agro-biological sciences, industrial

² The outline of the reform launched by Mr. Nakasone is given in Masujima (2003) and Masujima and O'uchi (1995).

³ There are a few works concerning the reform undertaking by Mr. Hashimoto. See Former Staff Organization of the Executive Office to the Administrative Reform Council (1998), Imamura (1999), Nakamura (1999) and Tanaka and Okada (2000).

sciences and technologies, electronic navigation research, public works research, environmental studies and so on.

Public Corporations for R&D

Public corporation is a kind of organization established by a specific law primarily when particular activities are better managed with corporate management systems and techniques, or when efficient performance is more likely to be achieved than it would be under direct operation by a national government ministry, or when more flexibility in financial or personnel management is required than is normally possible under the laws and regulations pertaining to government ministries. It is a corporate body established outside a ministry and supervised by a minister.

Many public corporations were established after World War II, particularly in the period of rapid economic growth from the late 1950s to the early 1970s. They covered the various areas such as construction and maintenance of social infrastructures, providing loans, R&D, international cooperation and development assistance, management of hospitals, vocational training centers and lodging facilities, price stabilization of specific commodities, supporting industries and cultural activities, management of pension fund, publicly-managed gambling and so on. As for R&D, public corporations typically have been in charge of basic or large-scale R&D activities that need a large amount of highly risky expenditures, which private organizations cannot afford to. Space development, atomic energy, physics and chemistry, nuclear cycle, natural resources survey and industrial technologies were major fields of R&D conducted by public corporations.

Needs for Change

In Japan, the development of science and technologies are recognized as contributing to the development of economy and society and the improvement of the living standard of the people. The Basic Law on Science and Technologies, which aims at promoting comprehensive and systematic implementation of science and technology measures, stipulates that government research institutions, universities and private institutions should cooperate in a coordinated way to develop science and technologies. It is the commonly accepted view that with scarce natural resources, Japan's future largely depends on the development of science and technologies.

With increasing globalization and economic and social changes, rapidly developing science and technologies and changing research environments, R&D institutions in the public sector were confronted with difficult problems such as rigid personnel and financial management, difficulties of getting various funding, continuous and sometimes inconsistent intervention from the policy-planning units or from the supervising ministries in the case of public corporations. To advance the R&D activities and produce the most prominent technologies in the world, in the late 1990s it was recognized that the fundamental review of organizational structures and management principles were indispensable.

As for the research institutions inside the government ministries, they were established as parts of ministry organizations and as a matter of course they are to be managed based on the governmental rules concerning personnel management, organizational structures, budgeting and accounting, fund raising etc., which are the same as those applied to policy-making units. These rules have been made, presumably to apply to typical administrative organization such as policy-making unit. They do not usually permit special or exceptional treatment. The pay systems are regulated specifically by laws so that they are rather uniform and rigid. The number of employees and organizational structures are strictly controlled. One-year budget system is adopted and the government units in principle cannot carry over the account to the next year.

As for the public corporations, with social and economic changes and stringent financial conditions of the government, they have come to be criticized for their inefficient operation, out-of-date projects, and the lack of severe evaluation etc. These maladies may be resulted from the ambiguous responsibilities of the top management, frequent and too much intervention by the supervising ministries, insufficient disclosure of financial and related information and the lack of effective evaluation system.⁴ R&D public corporations are not free from these defects and maladies. They have been limited in swiftly changing systems and organizations in view of social, economic and other changes, in improving morale and performance of the researchers by flexibly adjustable pay schemes, and in speedily changing research programs and launching a new project to cope with immediate necessities.

Basic Idea of a New Institution

Institutional reform was conducted in April 2001 to create new public organizations, incorporated administrative agencies (IAAs). This institutional change was resulted from the government-wide drastic reform undertaking initiated by Prime Minister Hashimoto. This reform undertaking is called as "Hashimoto Reform," in which drastic restructuring of central government organizations was realized in January 2001.⁵ Restructuring of central ministries and agencies was accomplished by merging ministries and agencies as well as creating new IAAs outside ministries and agencies. Merging ministries and agencies would improve the policy coordination. By creating IAAs outside the government ministries, transferring the certain programs and personnel/financial resources out of the hierarchical control by the ministers would be possible.

Hashimoto Reform was initiated after he won the general election in 1996. Before the election campaign, the government party conducted in-depth research on "agencification" in the UK government and the campaign pledge of the government party included drastic reorganization of central ministries and agencies as well as agencification.

Prime Minister Hashimoto established the Administrative Reform Council, an advisory body to the prime minister, by the cabinet order to deliberate concrete

⁴ See Administrative Inspection Bureau, Management and Coordination Agency (1997).

⁵ For more information see Kaneko (1999, 2002) and Kaneko & Horie (2000).

reform measures.⁶ During its deliberation under the leadership of the prime minister, the council examined how to develop feasible institutions with reference to the experiences of the UK government in agencification.

Firstly, the idea of separating policy from administration was put on the agenda. The most radical view in the council was to separate policy and program implementation from core policy planning function and the former function was to be transferred to "agency". In the government ministries, policy planning function is usually combined with the policy and program implementing function. The maladies and defects observed during the policy implementation are fed back in the policy planning to eliminate such problems. It was commonly understood in the council that to divide these two functions would lower the quality and effectiveness of government policies and programs. Some policy implementing activities such as tax collection, social insurance management, weather forecast and coast guard were to be conducted by external bodies separated from the internal ministerial units inside the ministries. The organizations of these bodies are to be stipulated by the ministerial ordinances instead of cabinet orders in the case of internal ministerial units for more flexible organizational changes.

The focus of deliberation was shifted to the facilities attached to the ministries, most of which were R&D institutions, personnel training facilities and educational facilities such as museums. At the council, it was decided that such activities as were to be executed without failure to ensure the public interests and may not be executed if left to the private sector but need not be directly executed in the name of the national government were to be transferred to a new institution, IAA.

The underlying principle of IAA system is a shift from control by rationing inputs and regulating procedures to a greater emphasis on coordination by targets and output standards as is often observed in the current administrative reforms of the OECD countries. The institutional basics are rather similar to the UK executive agency system; the provision of medium-term (3- to 5-year period) objectives by the supervising ministers, preparation of medium-term plans by IAAs to realize the medium-term objectives, ensuring substantial managerial autonomy of the IAA executives, performance evaluation by the third party organs every fiscal year and at the end of the medium-term. The most crucial characteristics of IAA system are ex post facto evaluation at a fixed period and the public release of evaluation results.

Comparison Between the Japanese IAA and the UK Executive Agency⁷

The Japanese IAA system was developed by making use of the UK experiences while the differences between the Japanese system and the UK system can be identified as follows.

- An IAA has a status of corporate body independent from the government ministries and established outside the government ministries. On the other hand, each executive agency in the UK is an integral part of the national government organization.

⁶ The council reported its deliberation results in 1997. See Administrative Reform Council (1997).

⁷ See Juri (2002) and Greenwood, Pyper & Wilson (2002).

- There shall be two kinds of IAAs; one with civil service and the other with non civil service. All the employees of the UK executive agencies are civil service.
- To ensure the impartiality and objectivity of performance evaluation, IAAs are subject to independent and government-wide evaluations by the Evaluation Council of the Ministry of Internal Affairs and Communications, in addition to the evaluation by individual evaluation committees of the supervising ministries. The UK government has no such double-check organizations for executive agencies.
- IAAs have legal obligations to release to the public wide-ranging information concerning their business operations and financial conditions. The UK executive agencies do not have such legal obligations.

Adoption of the IAA System in R&D Institutions

At first 57 IAAs were established in April 2001, all of which were separated from the ministry organizations. Among 57 IAAs, R&D IAAs numbered 31. Former government research institutions, with managerial difficulties in personnel, organization, finance and accounting became free from the rigid and uniform regulation applied to the government organizations.

The IAA system was originally invented to transform specific government organizations into non-government entities. In parallel with the implementation of the IAA system, organizational reform measures of public corporations were deliberated. In Japan, public corporations were established by respective laws and there existed no framework law to stipulate organizational and managerial standards. They often lacked clear-cut responsibilities of the top management, sufficient disclosure of information and effective evaluation system. During the deliberation of public corporation reform, the idea of transforming them into the IAAs was recognized effective to eliminate various maladies and shortcomings of public corporations. The Program for Streamlining and Rationalization of Public Corporations, the most recent reform policy of the public corporations, decided by the cabinet in December 2001, includes specific organizational reform measures of transforming the specific public corporations into IAAs.⁸ Many R&D public corporations were dissolved to become IAAs in October 2003.

Outline of the IAA System⁹

Basic Framework of IAA System¹⁰

An incorporated administrative agency (IAA) is a corporate type public organization, separate and independent from the government ministry, to carry out certain public

⁸ See Government of Japan (2001) and The Nikkei (2001).

⁹ "Incorporated administrative agency" is the formal English translation decided by the Ministry of Internal Affairs and Communications in July 2003. It is the same entity as "independent administrative institution" described in Kaneko (1999, 2002) and Kaneko and Horie (2000, 2003).

¹⁰ See Matsuda (1999) and Research Group on the IAA System (2004).

functions. Under the IAA system, the chief executive of an IAA is appointed by the supervising minister, and the IAA is assigned medium-term objectives by the supervising minister. The medium-term usually means three-to-five year period. To achieve these objectives, the IAA makes the medium-term plan which is to be approved by the supervising minister. To implement the medium-term plan to achieve the medium-term objectives, the chief executive of the IAA is given substantial managerial autonomy, with intervening actions of the supervising minister limited to the least extent necessary. Instead of intervention during the process of implementation, ex post facto evaluation by the third party organizations of performance and achievements is most emphasized.

There are two kinds of laws concerning the IAA system. One is the IAA General Framework Law and the other is a group of establishment laws for respective IAAs. The General Framework Law stipulates the general and common rules to be applied to all IAAs, unless stipulated otherwise in a specific IAA establishment law, in respect to objectives of the IAA system, classification of IAAs, nature of services, appointment and dismissal of executives, medium-term objectives and medium-term plans, evaluation committee and evaluation of performance and achievements, financial and accounting systems, auditing system, appropriation of government budget, personnel management and so on. An establishment law for each IAA provides for the specific name of the specific IAA, specific missions and services, capital fund, matters concerning the chief executive and other executives and auditor, and other matters to be provided for by law.

Nature of Functions and Classification of IAAs¹¹

The IAA General Framework Law stipulates that an IAA shall be established to carry out projects and programs of the following nature.

- Projects and programs that should be implemented without failure, because of their necessities for the stability of people's life and social economy and other public purposes.
- Projects and programs that need not be directly implemented in the name of the national government.¹²
- Projects and programs that may not be implemented if they are left to the private sector.

Among IAAs, the law recognizes those whose projects and programs are highly indispensable for stabilizing society and economy and stipulates that the executives and employees of such bodies may have the status of civil service.

Before the IAA system was introduced, those projects and programs to be conducted by IAAs had been carried out either by ministry organizations or by

¹¹ See Kaneko (2002).

¹² Specific activities that come under one of the following conditions should not be transferred to incorporated administrative agencies.

- The exercise of public authority to directly and forcibly limit the rights of the people
- Unenforceable unless executed in the name of the national government
- Directly related to the management of national crises

public corporations. The status of employees of ministry organizations is civil service, while public corporation employees are not civil service.

One can roughly classify IAAs into two groups, namely former ministry organization group (Group A) and former public corporation group (Group B).

In Group A, IAAs are in charge of R&D, testing and certifying, training, motor vehicle inspection, export and import insurance, mint, printing and national museum/hospital operation and so on. The executives and employees of most of the IAAs in this group retain the status of civil service. Some IAAs have abandoned the status of civil service.

As to Group B, thirty IAAs were established in October 2003. The examples of R&D public corporations transformed into IAI were;

- National Space Development Agency of Japan
- Institute of Physical and Chemical Research
- Japan Society for the Promotion of Science
- Japan Nuclear Cycle Development Institute

In the area of R&D, Group A and Group B play similar roles in promoting research and development in Japan. The only difference may be the status of the executives and employees. Namely, among the organizations with similar functions, some of them employ civil service and the others do not employ civil service. Giving the status of civil service to the employees of IAAs was exceptional and transitive, because giving the status of civil service was considered as one of the incentives to facilitate the separation and transformation of R&D organizations from ministries. The overall review of organizations and programs of IAAs at the end of the first medium-term has been almost over by the end of 2005 and the government has already decided that the employees of the R&D IAAs will leave the status of civil service in the next medium-term.

Personnel and Financial Systems

The chief executive and auditors of IAAs are appointed by the supervising ministers. The chief executives may be recruited from the private sector. At present, however, in most of existing IAAs they are ex-officials of related administrative fields, apparently because it is just after the separation from ministries and top executives were picked up in the way to facilitate the smooth transition. The other executives and employees of the IAAs are appointed by the chief executives. The pay schedules of IAAs are to be decided by each IAA, taking account of pay level of the government and private employees and the business performance of IAAs. The pay schedules are to be notified to the supervising ministers and released to the public. The appointment of executives and salaries of individual employees can be decided based on the evaluation of the business achievements.

In most cases, financial resources are provided by the government. More flexible use of financial resources has become possible than is normally possible under the laws and regulations pertaining to government organizations. IAAs can also receive funds from the private sector for their activities, more flexibly and by simplified procedures. To ensure the fairness and appropriateness of accounting, IAAs shall comply with the corporate accounting principles and shall undergo an annual audit by certified public

accountants appointed by the supervising ministers. IAAs are to release the financial documents to the public after the approval by the supervising ministers.

Performance Evaluation

Under the IAA system, evaluation of achievements is regarded as an indispensable tool for improving the effectiveness and efficiency of IAA operations. In the Japanese system, third party organs comprising the learned and outside experts play prominent roles in reviewing the self-evaluation of IAAs.¹³ There are two kinds of such third party organizations. One is an evaluation committee established in the respective ministry that has supervising authority for the IAA. The other is the Evaluation Council established in the Ministry of Internal Affairs and Communications. The former is in charge of reviewing and examining self-evaluation reports compiled and submitted by the IAAs. The latter has authorities to conduct government-side review and examination of the reports prepared by the respective evaluation committees after their review and examination of IAA reports.

The procedures of IAA evaluation are as follows.

- An IAA submits its annual/medium-term report of business achievements and performance to the evaluation committee for evaluation.
- The medium-term report shall be released to the public.
- The committee examines and reviews the report by scrutinizing the progress of the medium-term plan and analyzing the results of this scrutiny. In the case of the medium-term report, the review and examination are conducted by scrutinizing how the medium-term objectives have been achieved, analyzing the results of this scrutiny and comprehensively evaluating these results of scrutiny and analysis.
- The committee submits its review report to the IAA and the Evaluation Council.
- The report of the committee shall be released to the public.
- The evaluation committee recommends measures to the IAA for improving operation and management when necessary.
- The Evaluation Council examines and reviews the report of the evaluation committee and submits its opinions to the evaluation committee concerning the report.

At the end of the medium-term, after receiving the medium-term report from the IAA, the supervising minister examines and reviews overall organizational and operational issues including the necessity of continuing the IAA's activities and the appropriateness of organizational arrangement and management by involving the evaluation committee. And the minister takes necessary actions based on this examination and review result. Moreover, the Evaluation Council recommends to the supervising minister necessary reform measures regarding changes or abolition of major programs/projects of the IAA.

¹³ The third party organs are to evaluate the performance of R&D IAAs based on the guidelines decided by the prime minister. See Government of Japan (2005b).

Table 1 Revenue and expenditure of 29 R&D IAAs

	2001	2002	2003	Change rate 2002/2001 (%)	Change rate 2002/2003 (%)
Revenue	280,284	378,088	387,071	34.89	2.38
Of which revenue from the government	207,932	207,637	210,219	-0.14	1.24
Of which revenue by private contract	57,575	73,984	72,372	28.50	-2.18
Of which revenue from patents, charges etc	7,412	7,617	11,133	2.77	46.16
Expenditure	262,299	375,183	384,828	43.04	2.57
Expenditure/Revenue	93.58%	99.23%	99.42%		

Year: fiscal year; unit: million yen.

Accomplishments of R&D Institutions Under the IAA System¹⁴

Nearly 5 years have passed since the introduction of the IAA System. There were 113 IAAs as of October 2005. Among them, R&D institutions numbered 41.

As for the IAAs established in 2001, the first medium-term is completing soon and the government is making necessary preparation for the second medium-term. Here, I would like to analyze the accomplishments of the R&D IAAs established in 2001 as their financial data for 3 years (2001, 2002 and 2003) have been available (Table 1).

The R&D IAAs analyzed here are those established in 2001 and have not been merged or consolidated with other institutions by October 2005. There are 29 such IAAs.

The total revenue has been increasing since 2001 while the revenue from the government has remained almost the same amount. Revenue by private contract and that from patent and charges have increased substantially. On the other hand, the expenditure has been corresponding to the revenue. It seems that from the financial viewpoint the increase of the revenue from the outside is one of the successful outcomes under the IAA system.

Next, the accomplishment of one of the 29 IAAs, the National Institute of Advanced Industrial Science and Technology (AIST) are described as a successful example.

AIST was newly formed in April 2001 by amalgamating 15 research institutes in the Ministry of Economy, Trade and Industry. It is the Japan's largest public research institution with many research facilities and around 3,200 employees in all. AIST is in charge of conducting advanced research to promote innovation in versatile fields that strengthen the competitiveness of Japan's industries in the world market and create new industries. As of April 2005, there are 1,995 tenured researchers and 513 fixed-term researchers.

As for AIST, financial data for four fiscal years are available now (Table 2). Total revenue has been increasing substantially while the revenue from the government has decreased slightly. Revenue by private contract and that from patent and charges

¹⁴ For the analysis of this section, relevant data were extracted from Evaluation Committee, Ministry of Economy, Trade and Industry (METI), Evaluation Council, Ministry of Internal Affairs and Communications (2005a), Evaluation Department, National Institute of Advanced Industrial Science and Technology (AIST) (2005) and National Institute of Advanced Industrial Science and Technology (AIST) (2005).

Table 2 Revenue and expenditure of AIST

	2001	2002	2003	2004	Change rate 2002/2001 (%)	Change rate 2002/2003 (%)	Change rate 2004/2003 (%)
Revenue	89,290	149,522	151,265	191,967	67.46	1.17	26.91
Of which revenue from the government	69,310	68,411	68,411	68,218	-1.30	0.00	-0.28
Of which revenue by private contract	18,297	21,416	20,965	22,696	17.05	-2.11	8.26
Of which revenue from patents, charges etc	1,161	2,579	7,742	5,781	122.14	200.19	-25.33
Expenditure	82,525	152,320	153,418	192,532	84.57	0.72	25.50
Expenditure/Revenue	92.42%	101.87%	101.42%	100.29%			

Year: fiscal year; unit: million yen.

have increased. It seems that AIST is expanding its research and development activities supported by the outside money.

According to the review report by the evaluation committee at the Ministry of Economy, Trade and Industry, AIST has produced excellent results by making use of the managerial autonomy under the IAA system as follows.

- AIST has changed its internal organizations and allocation of responsibilities among organizations more swiftly to cope with rapidly changing research needs.
- The research progress reports prepared by research units have been evaluated by the outside experts and the evaluation results have been converted into quantitative indicators. These quantitative indicators have been utilized in the next year's budget allocation.
- AIST recruited talented personnel as fixed-term researchers for promoting personnel exchange among universities, public research institutes and private companies.
- AIST invited substantial number of prominent researchers from universities, private companies and overseas.
- The number of patent licensing and transferring contracts has been increased rapidly.
- AIST has acquired various research funds from the outside.
- Substantial number of new ventures was established by making use of the innovations developed by AIST.

Moreover, in a report on R&D activities of IAAs, which was prepared by the executive office to the Minister of State for Science and Technology Policy in October 2005, AIST acquired high appraisal in quantitative indicators such as number of papers published and patents, revenue from the royalties, amounts of research funds acquired from outside, number of fixed-term/female/foreign researchers.¹⁵

Unlike the government institutions, R&D IAAs are forced to compete with the other IAAs and private institutions to get outside money necessary for their own

¹⁵ See Minister of State for Science and Technology Policy (2005a, b).

research projects and their research results are to be strictly evaluated by the third party evaluation committees. With the competition and evaluation, it is expected that the performance of R&D IAAs will be improved further.

Reform of National Universities

National universities have played major roles in research and development in Japan. According to the recent survey results, researchers employed by the national universities occupy seventeen percent of all the researchers in Japan. As for the science and technology field, the national universities employ more than half of the university researchers. However, they were under the extensive control of the Minister of Education so that there were limits of autonomous management. As they were auxiliary units of the government, part of the Ministry of Education, the same regulations as are applied to policy making units were applied to them concerning budget, organization, personnel management and so on.

At the early stage of designing the IAA system, the national university was one of the target areas where the IAA system would be introduced. While the IAA system allows more flexible and autonomous management of national universities under the leadership of university president with more authority and responsibility, there was a kind of feeling of "resistance" among university people against an idea of transforming universities as a part of administrative reform program.¹⁶ As the national universities have some special features resulting from the academic freedom or university autonomy, careful deliberations had been made concerning how to transform them into independent corporate bodies separate from the government. The National University Institution Law was enacted in July 2003 and each national university became a national university institution separated from the Ministry of Education in April 2004.

The underlying idea of the national university institution system is the same as that of the IAA system. However, in view of the nature of education and research activities at universities, special attention is paid in introducing an objective and trustworthy system of evaluation and an appropriate system of setting medium-term objectives.

The employees of the national university institutions are no longer civil service for adopting more flexible personnel management system based on the capability and performance.

Overall Review of IAAs in 2004 and 2005

By March 2006, almost all IAAs established in 2001 will complete the first medium-term. As mentioned above, at the end of the medium-term, after receiving the medium-term report from the IAA, the supervising minister is to examine and review overall organizational and operational issues including the necessity of continuing

¹⁶ See Labor Union of Nation-wide University Personnel (2001).

the IAA's activities and the appropriateness of organizational arrangement and management by involving the evaluation committee.¹⁷ The review at the end of the medium-term does not mean the review activity begins after the medium-term ends but it means that next medium-term business objectives and plans together with the budget should be made by the end of medium-term through the strict review of business results of past years. In the Japanese government, the budget process starts at the end of August, when every ministry submits its budget request to the Ministry of Finance.¹⁸ The overall review of the organizations and programs of IAAs at the end of medium-term is carried out in parallel with the budget process.

In preparing budget requests together with organizational and operational reform plans for IAAs, all the supervising ministries took account of the list of viewpoints in examining the programs and organizations submitted by the Evaluation Council. The supervising ministries made draft reform plans, and then the Evaluation Council examined the draft and suggested additional measures.¹⁹ This process was repeatedly conducted. After the final draft was completed, it was submitted to the Administrative Reform Headquarters (headed by the prime minister) for decision. Based on the decision, each supervising ministry and IAA are to prepare new medium-term business objectives and plans. In 2004 and 2005 such review at the end of the medium-term was carried out for the first time. The reform course had been prepared in November 2005 as follows.²⁰

- Current 56 IAAs are to be transformed into 42 IAAs by merging some of them for more comprehensive and coordinated implementation of programs.
- The employees of 38 IAAs are not to retain the status of civil service.
- Out-of-date programs are to be abolished.
- Resources are to be concentrated on high-priority programs.

The employees of the IAAs whose functions are education and R&D will not retain the status of civil service. The roles and functions of organizations in charge of education and R&D are quite similar to those of universities. Changing the status of employees of the national university institutions from the civil service to the non-civil service went smoothly. Rather the national university institutions are now carrying out various measures to upgrade the capacities of education and R&D. Therefore, it is a logical conclusion that the employees of the IAAs with education and R&D functions will leave the status of civil service.

The new medium-term will start in April 2006 and at the same time organizational and operational reform of 56 IAAs will be implemented.

¹⁷ The principles, methods and procedures of the review were stipulated in Government of Japan (2003).

¹⁸ The remaining budget process in the Japanese government is as follows.

After each ministry submits its budget request to the Ministry of Finance, the Ministry of Finance holds repeated hearing sessions with the requesting ministries and carries out the examination and adjustment of budget requests. Around December 20, the ministry presents its draft budget proposal to the cabinet. Then the revival negotiations begin between the Ministry of Finance and the other ministries and the draft budget is decided at the cabinet meeting around December 24. The draft budget is submitted to the Diet, Japanese parliament in January next year. In a usual case, the draft budget is passed through the Diet by the end of March at the latest. It is very rare that the draft budget is changed by the Diet.

¹⁹ See Evaluation Council, Ministry of Internal Affairs and Communications (2004, 2005b).

²⁰ See Government of Japan (2005a).

Conclusion: Theoretical Review of the IAA System

In the context of public administration in Japan, types of public organizations have been limited by law and establishment or abolition of organizations and their operations have been managed relatively rigorously under a set of uniform rules and principles. As a result, the size of Japanese government organizations has been kept smaller than other developed countries. However, activities and services of public organizations are so diversified in nature, uniform rules and principles are not necessarily effective, but rather detrimental to efficient and effective performance of those activities and services. There exist the necessity of flexible thinking of organization types and arrangements and the way of management.

In concluding, I would like to mention some analytical views about the Japanese undertaking of a new type of public organization, IAA. In classifying the restructuring of organizations in twelve Continental European and "Anglo-Saxon" countries, Pollitt and Bouckaert chosen the following fourfold scheme (Pollitt and Bouckaert, 2004).

- Specialization
- Coordination
- Decentralization/centralization
- Scale

Pollitt and Bouckaert cited that the recent trend of administrative reform in twelve European and 'Anglo-Saxon' countries were towards specialized organizations; towards coordination by means of market mechanisms and contractual and quasi-contractual relationships; towards decentralization of authority from the center towards the periphery and towards decreasing the size of public organizations by breaking up and downsizing large bureaucratic organizations. (Pollitt and Bouckaert 2004, p. 81).

The Japanese IAA system is analyzed by making use of this framework.

Specialization

In the Hashimoto Reform, ministries were merged while auxiliary units inside the ministries were put out of them to become independent legal entities, IAAs. Their missions are stipulated by the establishment laws and business objectives for medium-term are provided by the supervising ministers. Moreover, the chief executives of IAAs have been given the managerial autonomy. Thus, former government auxiliary units, now IAAs have become more specialized organizations. On the other hand, consolidated ministries have shifted their emphasis on policy development and coordination inside the ministries. In this regard, IAAs tend to be more specialized while the government ministries tend to become more broad-scope, multi-purpose organizations.

As of January 2005, IAAs employ 122,386 staff, of which 72,098 for former government organization and 50,288 for former public corporations.²¹ The national government employees numbers 332,843. IAAs are mainly in charge of R&D, educational activities and hospital management and their mission are very close-

²¹ See Evaluation Council, Ministry of Internal Affairs and Communications (2005a).

scoped and specialized. Since the introduction of the system, no fragmentation issues have been observed in Japan different from the case of the UK.

In Japan, we have not yet encountered the accountability issues concerning IAAs, but the supervising ministers are to be accountable to the parliament when disputes about the specific IAAs takes place at the parliament.

In all, in the Japanese case, preference to specialized organizations is limited to the very narrow scoped activities such as R&D and educational activities, on the other hand such core governmental activities as policy making and implementation are conducted by more broad-scoped ministries established by merging several ministries. In the specialization context, Japan has retained its central ministerial structure with limited downsizing.

Coordination

Between IAAs and their supervising ministries, there exist quasi-contractual relationships. That is supervising ministries providing medium-term objectives and IAAs preparing the medium-term plans to realize the objectives. Every year the evaluation of performance in the past year is conducted and at the end of the medium-term thorough review of organizational and operational issues is conducted.

Under the IAA system the supervising ministers retain substantial supervising authority, thus the coordination between IAAs and the ministries is in principle ensured by the exercise of authority from the ministers. However, in the process of performance evaluation and organizational and operational review, the third party organizations are involved. Ministers should pay their highest attention to the views and opinions of the third party organizations. The instruments of hierarchical coordination tended to change. That is from controlling inputs and regulating procedures to coordination by objectives and output standards. And involving the third party organizations can ensure the impartiality of coordination by the exercise of authority.

In the coordination context, the IAA system has some contractual elements but has no clear market mechanism feature. Instead of market mechanism, third party involvement in the evaluation and overall review of IAAs by the ministers is very notable characteristic in the Japanese case.

Decentralization/centralization

Pollitt and Bouckaert described three set of strategic choices in decentralization; political vs. administrative, competitive vs. noncompetitive and internal vs. external (Pollitt and Bouckaert, 2004). In the Japanese IAA system, external decentralization is observed. Former government units were separated from the government ministries and independent legal persons were newly created. The top executives of IAAs are appointed by the supervising ministers but they retain managerial autonomy to realize the medium-term objectives provided by the supervising ministers. The overall review of the IAAs is stipulated by law at the end of 3- to 5-year period. The review is to be made based on the evaluation of achievements involving third party organizations under the ministers.

In the decentralization context, authorities concerning the daily management and operation of IAAs are left to the IAAs, on the other hand the central control has been

strengthened in performance evaluation and the review of organizations based on the evaluation. Before the IAA system, there was no such law which imposed the overall review of public organizations at 3-5 year interval based on the evaluation of performance.

Scale

There are various discussions about the optimal size of public organizations but the general trend is downsizing. With a view to promoting R&D activities, substantial number of talented researchers is mostly needed. Under the IAA system, R&D IAAs can employ young and promising researchers regardless of fixed staff number that is applied to the government organizations. On the other hand, many R&D IAAs are now reducing the number of administrative staff by making use of information technologies and contracting-out. Moreover, if they get additional funding from the other public bodies or the private sector, they can employ enough number of researchers to carry out mostly needed research programs. Mechanism of competition has been introduced in the R&D field.

In the context of scale of public organization, the IAA system enabled the flexible approaches. IAAs may increase the number of staff with their own revenues from private contracts, patent royalties, profits from venture businesses and so on; may hire part-time/fixed-term researchers with less personnel expenses. The IAA system may or may not downsize public organizations. We should wait and see the progress IAAs will make.

Final remarks

The IAA is the newest type of public organization in Japan. The first round of organizational and operational review has been completed. From now on, we have to carefully follow up how the R&D IAAs will accomplish their mission and produce the valuable R&D outcomes for the development of economy and society. In this regard, the ministers should pay their highest attention to the managerial autonomy of the IAAs and should refrain from daily intervention. At the same time, effective and impartial evaluation system should be constructed to enable strict and objective evaluation of achievements by both try-and-error practices inside the government and R&D of evaluation techniques in the academic circle.

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