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LEVERAGING TECHNOLOGY TO ENHANCE AUDIT QUALITY AND EFFECTIVENESS

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1. Introduction

For decades, the Government of Japan has implemented a series of policies to improve its administrative efficiencies as well as proliferate IT in Japan with a large amount of IT related budget allocated each fiscal year. Therefore, it has been an important challenge and continues to be so for the Board of Audit (the Board) to conduct audits on expenses for IT mainly from the viewpoints of economy, efficiency, and effectiveness in appropriate manner in line with the development of the use of IT. This paper illustrates the current situation of the Board by answering major questions posed by the principal paper.

2. Usage of Technology In Public Sectors in Japan

Q1. Discuss the status of e-Government/ ICT carried out in your country.

More than half a century has been passed since the Government of Japan introduced the very first computer in 1959, and now IT is used in every aspect of social activities. Based on the “Master Plan for Promoting Government-wide Use of IT” (Cabinet Decision, December 1994, Revised December 1997), the Government of Japan had engaged with preparing infrastructure to promote e-Government, which included providing administrative information by the internet; enabling e-services such as submission of documents through the internet in line with the progress of information and communication society; developing Kasumigaseki-WAN, i.e. communication network among the central and local governments during 1995-2002.

“IT Basic Law: Basic Law on the Formation of an Advanced Information and Telecommunications Network Society,” was enacted in December 2000, effective January 2001. “Program for Building e-Government” in 2003, and “Program for

Promoting e-Government" in 2006, and other programs were intended to realize e-government and to provide one-stop services for convenience of users as well as to achieve simple and efficient government.

In May 2010, the government further addressed the use of ICT in public service, reformed its works and systems accordingly to "A New Strategy in Information and Communications Technology" and "The New Strategy in Information and Communications Technology Roadmaps".

In 2013, "Declaration to be the World's Most Advanced IT Nation" and also "Road Maps to be the World's Most Advanced IT Nation" were decided. The Declaration stated to promote the use of open data, introduce "my number system" which provides an identification number to every citizen for the sake of efficient, fair and accurate public service including social security and tax, and reform government information system etc.

Q2. Explain on the governance, risk and control framework/structure which govern and regulate the e-Government/ICT implementation.

The CIO Council (established in 2002) which is composed with Chief Information Officer of every Ministry and Agency of the Government, with Deputy Chief Cabinet Secretary for Information Technology Policy (so called government CIO) as a head, the IT Strategic Headquarter in the Prime Ministers Office, and the Information Security Policy Council, those three constitute the overall framework of the IT governance of the Government of Japan as a whole.

Since the Government IT investment had been implemented by each government agency, duplication as well as lack of coordination caused inefficiency

and lowered the quality of government services. Therefore, the government CIO was established in the Cabinet Office in 2013 to integrate IT policies and exercise leadership to tackle with those problems. The Act to Amend a Part of Cabinet Law (promulgated and enacted May 2013, so called Government CIO Act) stipulates that based on the delegation of authority from the Chairman of the CIO Council (Prime Minister), the mandate of Government CIO includes: designing cross-government agencies plan; drawing policy of cost estimation; making policy implementation guidelines, evaluating policies, requesting top management of the government agencies to submit necessary information and other cooperative measures.

As for the framework to promote use of IT in the government, “Guidelines for Development and Management Standards for Central Government Information Systems (December 3, 2014)” is in effect.

For the sake of governance and risk management framework, the following are currently effective: “Guidelines for Development and Management Standards for Central Government Information Systems (December 3, 2014)”; “Guidelines for Formulating Standard Information Security Measures for Central Government Agency Computer System (first established in 2005, updated every year, current version effective from April 2014 in each government agency)”; Guidelines for Central Government Agency Information System Operational Continuity Plan (March, 2012 ver.2 May 2012)”

“Guidelines for Development and Management Standards for Central Government Information Systems (December 3, 2014)” requires each government agency to set up a progress review at each milestone of the project, and to assess risks not only by self-check but also by the third party for the sake of objectivity. The

progress review implementation guidelines are currently discussed in the government.

The Board has been participating in the Government CIO Coordination Conference which is the decision making body of the framework, as an observer, therefore, the Board does not directly involved in the decision making of the framework.

Q3. How has your SAI approached the capacity development of specialist ICT auditors? Has your SAI engaged external experts in specialised ICT areas?

IT procurements in government agencies are still considered as something special, therefore, IT procurement skill in the auditees is not sufficient.

Since 1968, although the Board has been engaged with IT Audit and accumulated the institutional know-how on IT audit, the Board recognizes that more advanced technique should be provided to auditors and other staff.

As for the IT audit, Technical Counsellor has been seconded to the Board from a government agency as technical experts, and audit divisions involved in the IT related audit employ several IT specialists as fixed-term officials or Senior Specialists in order to utilize knowledge and experience of the private companies. The Board also has a contract with an outside specialist to serve as Assistant to Chief Information Officer (CIO).

In addition to the IT training programs for the officials, which have been conducted for years, the Board try to recruit IT specialist with experience. Further explanation will be presented later in 4. Capacity Building.

3. Audit on e-Government and ICT environment

Q1. Elaborate on the usage of IT tools by auditors in performing their financial and attestation audits.

The Board utilizes IT for the calculation, analysis, sampling and simulation of the various audit related data, thus allowing auditors to identify focusing points and sites to be further investigated. Also, the Board introduces tools for data collection, analysis and communication at the field audit sites to ensure rapid processing of audit related data. With these measures, the Board conducts field audits efficiently and effectively. In addition, in order to enhance and strengthen the audit work, the Board has developed the Audit Information System with high security level, which is used for verification of the final accounts of the States and management of all kinds of data and materials related to the audit.

The account statements in electric data submitted by auditees are compared automatically with the State's final accounts submitted by the Cabinet and the statements of the State's revenues and expenditures submitted by the Bank of Japan, by the system developed by the Board, named "CEFIAN" (Certification of the final account computer system) thus ensuring efficient performance of verification of numerical accuracy of the national final accounts. CEFIAN does not confirm whether transactions actually occurred.

Q2. In respect of IT projects and system development, discuss how IT audit team perform their audit.

The Board conducts its audits from broad and diverse aspects such as accuracy, regularity, economy, efficiency, effectiveness and others. And the Board

considers specific audit viewpoints such as i) appropriateness of system procurement plan described by auditees, and whether the procurement has been economically implemented according to the schedule determined by the plan, ii) whether systems developed have been used sufficiently, etc. at the stage of implementation of IT audit.

Audit on IT projects and system development is not only conducted by Information and Communication Audit Division which has been established for cross-section auditing of governmental agencies' IT projects and system development. Each audit division makes an audit plan based on their analysis of expenditures and risks of auditees, and conduct audits on IT related contracts etc. The Information and Communication Technology Division provides support to the said audit divisions when necessary.

Q3. Elaborate on the SAI's findings on IT project failures in your country, if any.

Every year, the Board reported IT audit cases. Here, two cases will be presented in this paper.

Case 1: FY2011 Audit Report, Impropriety

"Regarding the establishment of basic management computer system in Japan Patent Agency, because the ordering party failed in managing the project sufficiently, there has been difficulty in attaining the expected purpose."

(1) Outline of the case

In October 2004, in order to improve applicant friendliness Japan Patent Agency (hereafter JPA) had decided to update the former systems and develop

basic management computer system. JPA contracted with Toshiba Solutions Corporation (hereafter TSOL) for the design and development work, and with Accenture Japan Ltd (hereafter Accenture) for management assisting work, and paid TSOL total JPY 2,487,020,238 from 2006 to 2009, paid Accenture total JPY 2,964,073,875 from 2006 to 2011, grand total JPY 5,451,094,113.

(2) Audit findings

The Board found the following inappropriateness.

JPA originally planned that system design and development required 85 months and it would start the operation of the system in January 2014. However, the project had been delayed as basic design had not been even completed by January 2012, which meant that the project was more than two years behind the schedule. TSOL draw common basic system design for commonly used function for the development of the program, however, due to the delay of basic system design, common basic system design has not been realized. Therefore, the system design and development was requiring further more work process. JPA, TSOL and Accenture had not taken effective measures to improve this situation. The Board considered that the chance to overcome the delay of design and development work in the near future was very slim, and it was unable to predict when the project would be completed and start its operation.

The Board concluded that the amount of money paid to TSOL as well as Accenture, JPY 5,451,094,113 in total, was improprer.

Case 2: FY2011 Audit Report Presented Opinion to the Cabinet Secretariat and Personnel Authority

"Regarding the Personnel and Salaries Operations Supporting System the Board presented opinions that the Cabinet Office and the Cabinet Secretariat should continue efforts to improve and manage stably through promoting coordination with the participating government offices and realize the effect of optimization through fully sharing information with the participating government offices and supporting the transition to the new systems."

(1) Outline of the "Personnel and Salaries Operations Supporting System"

Personnel Authority and Ministry of Home Affairs were in charge of system planning, design and development of the "Personnel and Salaries Operation Supporting System" based on the Optimization Plan. Cabinet Secretariat is responsible for advising government agencies to enhance progress of system design and development according to the optimization plan. Cabinet Secretariat, together with Personnel Authority, joined the secretariat of the "Liaison Council of Government Agencies Personnel and Salaries Operations Supporting System" set up in September 2006.

The start of the operation of "Personnel and Salaries Operations Supporting System" in the participating government agencies, however, has been delayed from the original plan, because the optimization plan has been revised four times since the first optimization plan was decided in February 2004 till January 2012.

(2) Audit findings

Personnel Authority and Ministry of Home Affairs had spent JPY 8,927,340,000 for development and operation to optimize "Personnel and Salaries Operations Supporting System" from FY2003 to FY2011. However, it was decided that the

"Personnel and Salaries Operations Supporting Systems" should be converted from so called "distributed system", i.e., each participating government agency was responsible for procurement of devices such as server, maintenance and operation, to so called "centralized controlling system", i.e., procurement of devices, maintenance and operation should be solely managed by Personnel Authority. Therefore, Personnel Authority has been in charge of system design and development since 2008. In the process of transition starting from 2010, when Personnel Authority recorded data of participating agencies, huge inconsistency occurred and greatly delayed the transition process. Most of participating government agencies greatly delayed the start of the operation, thus realization of optimization effect has been delayed.

The Board analyzed factors preventing realization of optimization effect and found that the following problems. These problems are not considered appropriate and need improvement.

(i) Design and development process

Because Personnel Authority did not confirm properly the amount of data maintained by the participating government agencies, performance requirement for the system was not fully defined. Consequently, actual amount of data maintained by the participating government agencies was not correctly reflected to the design and development of the systems, nor tested sufficiently in the integration tests.

(ii) Transition process

Due to the impartial communication from Personnel Authority to the participating government agencies regarding transition tools and Excel sheet for

record, they did not understand that they had to assure the quality of data in advance or what should be exactly filled in the Excel sheet for record. Therefore, huge amount of inconsistency of recorded data occurred in the transition process. Furthermore, from 2010, Personnel Authority set up help desk to meet the inquiries, however, only one thirds of the inquiries could be answered by the help desk because most of the inquiries arose from data problems and it was not estimated that huge data inconsistency would occur.

(iii) Project management assisting work

Because project management assisting work was concluded within the system design and repair contracting period, only mid-term assessment was reported but complete assessment of the system design and repair work was never done. Therefore, the contract period of project management assisting work was not well coordinated with the contract period of design and repair work.

(iv) Organization by Personnel Authority etc.

“Liaison Council of Government Agencies for Personnel and Salaries Operations Supporting System” organized by Personnel Authority and Cabinet Secretariat did not work well because transition tools as well as Excel sheet for record were not fully explained in the Council, and information on the progress of government agencies which were ahead of other agencies and problems they had faced were not shared in the meaningful way.

(v) Calculating cost for transition process in implementing optimization plan

It is important to measure cost for transition process of “Personnel and Salaries Operations Supporting System” to assess optimization effect from the view point of investment effectiveness. Moreover, the cost of transition process of the participating government agencies accounted for JPY 1,808,110,000 in total in FY2008-FY2012. Such huge amount of investment for optimization should be properly recorded, however, Personnel Authority failed to record transition cost in the investment account in the optimization plan.

(3) Opinion of the Board

The Board presents its opinion so that Personnel Authority and Cabinet Secretariat would coordinate further with participating government agencies, optimize “Personnel and Salaries Operations Supporting Systems”, so that effect of optimization would be realized as earliest possible.

(i) Personnel Authority should: work out repair priority with participating government agencies and continue repair programs; study test process and working period to assure quality of system repair work with due care, and ; consider carefully the contract period and specification regarding project management assisting work so that its contractor can effectively provide technical assistance.

(ii) Personnel Authority should: share information with participating government agencies concerning “Personnel and Salaries Operations Supporting System” and assist their smooth transition, and; study and prepare with due care the expected amount and content of the help desk work.

(iii) Personnel Authority should: grasp details of the transition work of participating government agencies so as to calculate their cost of transition for recording

them in investment account of the optimization plan, and; study rational calculation method for transition cost.

(iv) Cabinet Secretariat should conduct integrated adjustment and coordination including giving advice to Personnel Authority when it implements the above mentioned work.

4. Capacity Building

Q1. Discuss on development of staff skills in technologies. Explain your capacity building programme. If not, what is the available support? Q2. Discuss the techniques that could be employed to maximise the acceptance of technologies.

The Board decided "Strategy to Nurture and Utilize Human Resources for IT Audit" in 2014, which consisted of Analysis of the Status Quo, Needed Human Resources and Capability, Implementation Method, Report and Evaluation. Needed Human Resources and Capability stated as follows;

IT Assisted Audit Capability: The Board should study and cope with the auditees' computer system update, and train auditors to utilize Computer Assisted Audit Techniques (CAATs).

IT Procurement Capability: The Board should develop knowledge and skills necessary to further improve efficiency, transparency in IT procurement.

IT Security Capability: The Board should maintain confidentiality, integrity and availability (CIA), in the level sufficient enough as an organization.

IT Planning Ability: The Board should have ability to plan and propose its IT plan, based on the insight with five to ten years mid-term technical trend, social trend, etc.

In order to realize those abilities, in addition to the IT training programs for the officials which has been conducted for years, the Board tries to recruit IT specialist with experience, carefully plan placing personnel so that IT audit and IT research could be appropriately experienced, provide continual OJT education, send personnel to academic institutions outside of the Board for further IT training even more often and with attentiveness for development effect.

The Board conducts training and seminars for its staff bringing specialists from outside of the Board. It sends its staff to specialized institutions to make them learn technical skills in IT system architecture.

5. Conclusion

The Board has conducted audits on government and other entities' expenses for IT mainly from the viewpoints of economy, efficiency and effectiveness in appropriate manner in line with the development of the use of IT. The Board is tackling with the challenges of further promotion of IT-assisted Audit by storing audit techniques, nurturing auditors knowledge and skills.