COUNTRY PAPER

LEVERAGING TECHNOLOGY TO ENHANCE AUDIT QUALITY AND EFFECTIVENESS

NATIONAL AUDIT DEPARTMENT OF MALAYSIA

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1. INTRODUCTION

The Government of Malaysia has continuously introduced new technology in developing government infrastructure and systems to ensure effectiveness of public service delivery. In 1997, under the 7th Malaysia Development Plan, the Malaysian Government introduced the e-government project. Under the 9th Malaysia Development Plan, the Government has further increased the allocation for ICT development from RM2.8 billion to RM5.17 billion. As at to date, more than 500 major systems have been developed and used in various ministries, departments and agencies at the federal government level to improve public service delivery.

The usage of ICT has remarkably changed the manner in which the Government operates where core systems, processes, procedures and rules are increasingly transformed and innovated for a more efficient and effective operation as well as service delivery. Nevertheless, new technology brings new organisational risks and this will ultimately bring new financial risks as well. The winds of change in the public sector are also creating major impact on the auditing profession in terms of the nature, timing and results of the audit work. Thus, auditors need to keep abreast with the client's advancement in technology usage with regards to audit methodology, tools and techniques.

2. OVERVIEW OF THE NATIONAL AUDIT DEPARTMENT MALAYSIA (NADM)

Established in the early 20th Century, NADM is responsible for carrying out audits on all Federal Government Ministries, Departments and Agencies and the State Governments which includes 27 Federal Ministries and 86 Departments, 13 State Governments, 112 Federal Government Agencies, 139 State Government Agencies, 144 Local Authorities and 15 Islamic Religious Councils. Besides this, government agencies or companies which received grant from the Government or where more than 51% of its share capital is owned by the Government are also subject to audit. As an independent institution, the Auditor General's Report on the financial position and the implementation of the government development programmes is tabled in Parliament and State Legislatures annually. The types of audit carried out include attestation, financial management and performance audit.

Supreme Audit Institutions (SAIs) are directly impacted where the audit approaches and methodologies in this environment has now transformed even though our audit objectives remain the same. Inevitably, SAIs will have to leverage on technology in order to increase audit efficiency and effectiveness which ultimately improve the overall quality of the audit. The use of technology by SAIs will allow for wider audit scope and coverage; improved timeliness in conducting the audit and collecting evidence; more in-depth data analysis and interrogation; and, better communication and reporting. Consequently, SAIs would be able to obtain better quality information for audit and helps improve the integrity of the overall audit. The changing environment of the government sector through the implementation of e-Government/ICT projects resulted in the increasing prevalence of technology and this will not only bring about significant impact to the way we deal with the government sector for social and economic services or as government employees in performing our day to day operations; but more importantly the technology-based environment brings together with it the issues of governance, security, risks management, legal mandate and internal controls. Therefore, it is crucial to identify and assess on how these issues are/have been addressed in this environment.

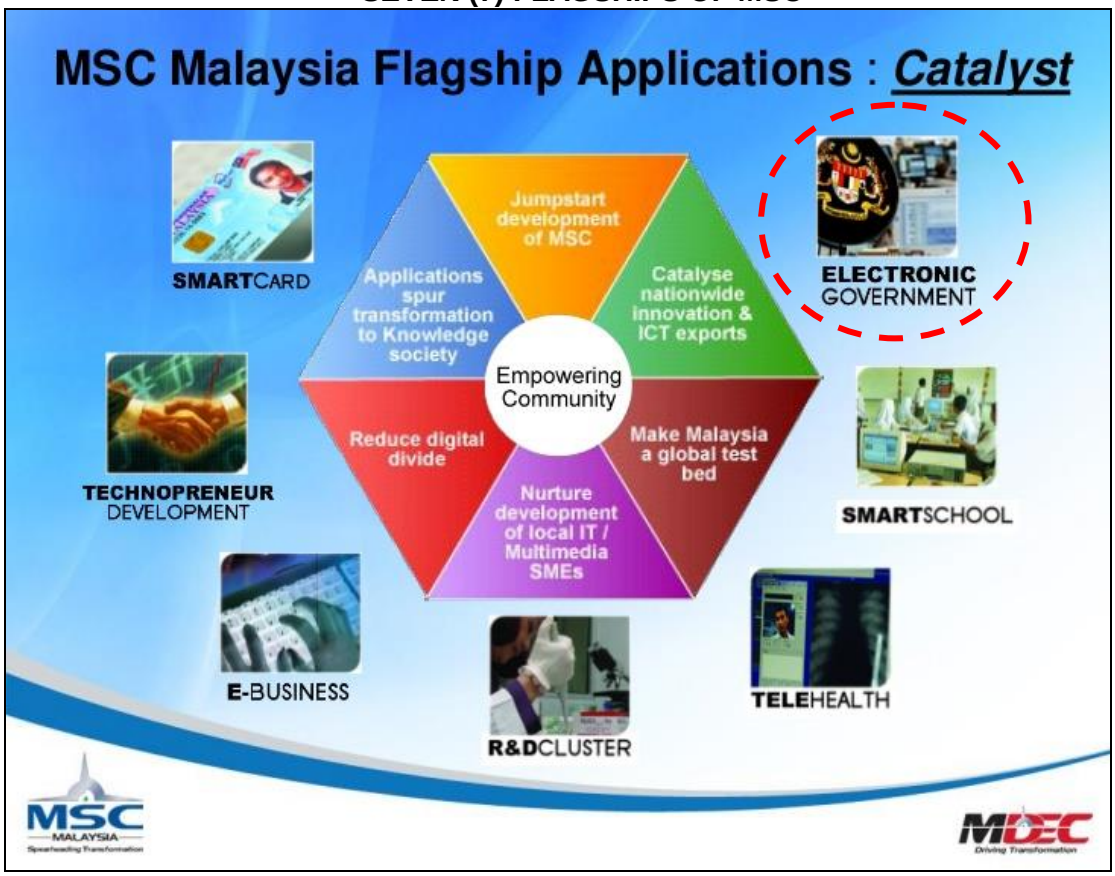
This paper aims to share our experience in leveraging technology to enhance audit quality and effectiveness.

3. MALAYSIA TRANSFORMATION THROUGH ICT

In 1997, the Malaysian Government launched the Electronic Government initiative, generally known as e-Government, with the introduction of the Multimedia Super Corridor (MSC) in 1996. The implementation of e-Government in Malaysia heralds the beginning of a journey of reinventing the government by transforming the way it operates, modernising and enhancing its service delivery. E-Government seeks to enhance the convenience, accessibility and quality of interactions with the public and businesses at large. Simultaneously, it will improve information flow and processes within the government, improve the speed and quality of policy development, improve coordination and enforcement more efficiently and seamless public service delivery as well as allows for prompt decision making. This would enable the government to be more responsive to the needs of its people.

E-Government is one of the 7 flagship applications introduced in MSC as in **Diagram 1** below. The objectives of these flagship applications are to instigate and accelerate the growth of MSC, to enhance national competitiveness, to create high value jobs and export growth, to help reduce digital divide, and to make MSC a regional hub and test bed. Under the e-government flagship, 7 main projects categories as government to government, government to people and government to business were identified. To date, a total of RM455 million has been spent to develop e-Government applications. To ensure the success implementation of e-Government, cooperation between Ministry of Energy, Water and Communications (MEWC), Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) and other agencies are being strengthened.

DIAGRAM 1:
SEVEN (7) FLAGSHIPS OF MSC



Source: http://www.slideshare.net/suhaimi2000/ictecommerce-in-malaysia

The 7 pilot projects of the e-Government Flagship Applications are as follows:

a. **Project Monitoring System (SPP II);**

It is an online system that monitors the entire lifecycle of national programs such as from project application to approval to implementation, mid-term review and completion.

b. **Human Resource Management Information System (HRMIS);**

HRMIS provides a single interface for government employees to perform human resource functions effectively and efficiently in an integrated environment. This is in line with the objective of HRMIS which is not only for record keeping but also providing transactional functions such as leave applications, loan processing, competency management, recruitment, and selection of employees. The HRMIS project is anchored by the Public Service Department (PSD).

c. **Generic Office Environment (GOE);**

It includes powerful document and office management solution that enables users to manage their office environment effectively and efficiently. It is fully web-based and has been customized based on local developed package, DRDok.

d. **Electronic Procurement (EP);**

The electronic procurement system, better known as e-Procurement, streamlines government procurement activities and improves the quality of service it provides. E-Procurement converts conventional procurement processes to electronic procurement on the Internet. It enables suppliers to obtain tender documents and submit bids through the Internet. The suppliers are equipped with smartcards that enable them to transact with the e-Procurement system. Modules in e-Procurement system include suppliers' registration, central contract, direct purchase, tenders and contract and have been fully functional and used by the government in its procurement exercise.

e. Electronic Services (E-Services);

E-Services enable the users to conduct transactions with government agencies, such as the Road Transport Department (RTD) and private utility companies such as *Tenaga Nasional Berhad* (TNB) and *Telekom Malaysia Berhad* (TM) through various convenient channels like the e-Services kiosks and internet. Users can now conduct transactions by themselves without queuing, traffic jams or bureaucratic hassles.

f. Electronic Labour Exchange (ELX); and

ELX is one stop-centre for labour market information, as supervised by the Ministry of Human Resource to enable employers and job seekers to communicate on the same platform. It provides an effective centre of labour market information and references and involves effective and integrated job matching process.

g. E-Syariah.

It is a case management system that integrates the processes related to management of cases for the Syariah Courts. It aims to improve the quality of services of the Syariah Courts and the productivity and efficiency of the management of the Syariah courts throughout the country.

Besides e-government, the other 6 flagship applications of MSC are;

a. Multipurpose Card;
b. Smart Card;
c. Tele Health;
d. R & D Cluster;
e. e-Business; and
f. Technopreneur

3. GOVERNANCE, RISK AND CONTROL FRAMEWORK WHICH GOVERNS AND REGULATES THE e-GOVERNMENT/ICT IMPLEMENTATION.

Public sector ICT in Malaysia is led by Malaysian Administrative Modernisation and Management Planning Unit (MAMPU). The roles of MAMPU are to provide advisory, guidance and consultation services by achieving at least the scale 5 (satisfactory) of 7 in the service delivery effectiveness assessment.

Each Ministry has their own IT Governance setup consisting of:

a. Chief Information Officer (CIO);
b. Steering Committee;
c. Technical Committee; and
d. Project Management Office

Public Sector ICT Strategic Plan had been made for a period of 5 year (2011 – 2015). The ICT strategic directions are as shown in the diagram below:

DIAGRAM 2:
PUBLIC SECTOR ICT STRATEGIC PLAN (2011 – 2015)
(5 PROGRAMS)

Source: Joint Working Group (JWG) - Public Administration and Governance Malaysia-India (New Delhi 26-29 Aug 2014) slides

DIAGRAM 3:
PUBLIC SECTOR ICT STRATEGIC PLAN (2011 – 2015)
(6 POLICY TARGETS)

Source: Joint Working Group (JWG) - Public Administration and Governance Malaysia-India (New Delhi 26-29 Aug 2014) slide

The effectiveness of the ICT framework structure which governs and regulates e-Government/ICT Projects implementation in meeting its overall goals still need to be improved especially on issues of governance and project management.

The challenges and areas for improvement on the e-Government/ICT framework are such as user requirements studies; technical expertise; budget constrains; systems interoperability/integration and interfaces with other systems; Change Management and communication between developer and project team, key user and management and etc.

NADM involves actively in ICT project development of the various ministries and agencies. Our involvement however is only to express our views on aspect of internal controls and also to ensure all our requirements are taken into accounts in the system specifications and development which will later facilitate our audit. To avoid conflict of interest, the basis of involvement is to ensure adequate internal

controls of system are in place and all rules, regulations and procedures are adhered to.

NADM plays advisory role in pre, during and post implementation phase of ICT system/project development. Besides the advisory role NADM also carry out the audit on ICT Projects during and post system implementation.

4. AUDITING e-GOVERNMENT/ICT ENVIRONMENT

In performing the financial and attestation audits, Computer Assisted Audit Techniques & Tools (CAATTs) approach is used for data analytics using auditing software such as Audit Command Language (ACL). In respect of IT projects and system development, IT audit team perform concurrent audit during development as well as at the pre and post implementation.

In ensuring that project implementation is carried out in accordance with the contracts, the government has developed various monitoring mechanisms for government projects including ICT projects such as Project Monitoring System where the various levels involved in the development and monitoring of project developments are required to update the status of development and all involved are informed and therefore immediate actions are taken.

5. TECHNOLOGY-BASED APPROACH THROUGH THE USE OF AUDIT TOOLS

The technology adoption Project in NADM commenced as early as 1980's where the technology enabled audit method begun with the purchase of audit software, ACL. Further, the phases continued in planned and structured environment. The phases concerned were Phase I (1996); Phase II (1997 -1998); Phase III (1999 -2000) and finally Phase IV (2001 – 2002). All these phases were drawn in preparation of infrastructure which associated to procurement of computer hardware, software and network across the country. In order to speed up the project, Phase V (in year 2003) was commenced for procurement of new hardware and software. By using the audit software, NADM auditors are able to conduct audit methodology driven by technology.

NADM initiated the usage of the software through CAATTs method. This was the aid tools to augment the effectiveness of audit work. Accordingly, through Phase V, deployment of ACL software was made both through network environment and standalone personal computer in order to enable more of NADM auditors to harness this software. Both the tools – ACL and Microsoft Excel were used in performing data analytics for financial data in performing financial statement auditing.
NADM use data analytics for one (1) Federal Government Financial Statement and eleven (11) State Governments Financial Statements. However, NADM does not used analytics on unstructured data in performing data mining and collecting of audit evidence due to limitation of technical expertise.

In carrying out the data analytic, NADM faces problem such as system complexities, data from different sources and platform, SAI's capacity and capabilities, liability and compatibility issues.

As mentioned earlier, NADM started to use CAATTs in 1980's. In 1992, NADM started doing interim audit using CAATTs tools. Initially, data were downloaded from AG office using round tape, then cartridge platform was used to download data. Nowadays remarkable progress in Information Technology (IT) and sophisticated communication infrastructure, data are downloaded from client office using the Infra Network.

NADM has used ACL's data analysis software to dramatically improve its government audit processes. The IT Audit team conducts monthly analysis of financial data from 23 branches and successfully verified transactions worth RM475 billion through concurrent audit processes in 2012. The team is also paving the way for other public sector organisations to improve their audit processes by sharing knowledge and data analysis best practices with various government departments, ministries, and agencies. As a result of this, the NADM was announced as the 16th Impact Award Winner at the ACL Annual Customer Celebration 2014 in Dallas, United State of America.

6. CAPACITY BUILDING

A knowledgeable and highly competent workforce is required especially in the current changing environment to enhance the quality of auditing. Capacity of NADM in term of human resource increase substantially in year 2008 compared to the years before. Availability of adequate human capital made it possible to widen the audit scope in the near future.

Preparation was made to overcome challenges due to proliferation of technology adoption specifically internal need and auditing tasks. Accordingly the role of Chief Information Officer is placed under the Director of Corporate Management Sector to execute the department ICT initiative. Information System Strategic Plan was released to outline our approach to strengthen ICT culture amongst the NADM staff. Restructuring was done in 2002 by introducing the Information and Communication Technology (ICT) Division under Corporate Management Sector. This division is responsible for planning, equipping, managing the computer system infrastructure, implement technology adoption programmes and also provide technical support to NADM auditor in computer based auditing

In approaching the capacity development of specialist ICT auditors, NADM conducted in-house training through the National Audit Academy(NAA) for the staff; international training provided by SAIs, ASEANSAI, ASOSAI and INTOSAI. The NAA formulates specific ICT training by modules to build up our ICT competency and expertise in audit work. Hands-on training program and workshop on IT controls, SDLC, and CAATTS are carried out to enhance staffs' skills by the School of IT of the NAA. In addition, NADM also issued IT Audit Manual for auditors to carry out IT audit. This will enable auditors with little knowledge of audit software to use and apply IT techniques in implementing their audit. To date, 18 specific guidelines were issued and used.

The NAA also carries out workshops to promote the leveraging of technologies amongst our auditors by harnessing skills and competency in their audit work.

7. IMPACT OF ANALYTICS

The findings of analytics are normally communicated to the NADM management through discussion and reports which are subsequently delivered to the auditees. It is through our audit analytics results and recommendations, auditees are able to take necessary actions such as data cleaning, improve the internal controls of system, system enhancement, conduct proper testing and strengthen project management and monitoring.

8. CONCLUSIONS

Leveraging on technology based solutions will enhance the quality of the auditing process as well as the audit quality and effectiveness. The NADM continue to commit the use of technology in carrying out the audit to increase audit efficiency and effectiveness, and therefore, the investment on technology based audit approach as well as capacity building in this area is our immediate priority to ensure our audit remains relevant and effective.