# Keeping ahead of the game: Innovations and challenges in e-government in Malaysia

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## Abstract
This article examines the development and usage of e-government in Malaysia. The history of public administration reform in Malaysia demonstrates the government's willingness to experiment with innovations seen as improving the efficiency, effectiveness and responsiveness of public services. Thus, e-government has been enthusiastically promoted by the Malaysian government and has spread across most government organisations at central and subnational levels. The article provides details of a range of services both within government and for society that are available in e-government modes. However, there are challenges to the development of e-government including adherence to traditional models of service delivery, resistance to organisational culture change by officials, preference for counter services by clients and constraints on the availability of information technology training. Mobile phones are now seen as a new way to encourage citizens to use e-government on a regular basis.

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## Introduction

The growth of access to broadband internet services and the proliferation of mobile telecommunications have fostered the promotion of e-government applications by governments across Southeast Asia. E-government is thought to represent a means for effective governance and citizen participation, both at national and local levels. It has the potential to improve public management, and to increase efficiency, transparency and accountability. Governments are increasingly using the popularity of interactive information and communication technology (ICT), particularly the internet and mobile phone technologies to improve interaction with citizens. Benefits are seen as including cost efficiency for governments and greater convenience for citizens when paying bills and applying for permits and licences online. The e-government model of public service delivery is also seen as enhancing governance by improving the quality and responsiveness of services, by expanding the reach and accessibility of public infrastructure, and by allowing citizens to experience a faster and more transparent interface with government services (Gil-Garcia and Pardo, 2005; McClure, 1997).

Many countries have recognised the importance of citizen feedback via the internet and are taking advantage of social networking tools to create better websites and web portals. Mobile telephones are increasingly being targeted by governments to provide services in the form of alert messages sent by way of short 'text' or SMS messages. Malaysia's mySMS system enables users to receive information and documents on demand, and to receive broadcast information from government agencies, including emergency information. The system also allows users to lodge complaints about government agencies.

When governments upgrade their websites to incorporate interactive tools, citizen e-participation seems to be strengthened. Citizens are no longer passive consumers of government-provided information but active participants in the decision-making process relating to government service delivery. To date, many applications have been developed as part of the Malaysian federal government's focus on e-government initiatives. This has resulted in the introduction of a range of internet services discussed below.

The introduction of e-government is reported to have resulted in substantial savings across government agencies in Malaysia. The public sector ICT framework that was launched in 2004 is estimated to have accumulated RM370 million savings by 921 government agencies, or 99.6% of the public sector (Azim Idris, 2013). In addition, patent-free computer applications have generated RM595 million in revenue, with exports valued at an additional RM234 million. This article traces the development of e-government services in Malaysia to improve public service delivery and provides details of some of the major e-government services. It also highlights challenges including resistance by public officials to this mode of service delivery, the digital divide and limited access to the internet among poorer sections of the population, and concerns over the level of security and privacy of information retained on government databases.

## The Malaysian system of public administration

Malaysia is a federal constitutional monarchy and a parliamentary democracy. The country is headed by a king (*Yang DiPertuan Agong*) who is elected once every 5 years from among the nine rulers. The head of government is the prime minister, representing the

leader of the party, or coalition of political parties, that secures a simple majority of support in the lower House of Representatives (*Dewan Rakyat*). The prime minister also heads the cabinet, the decision-making body that also performs the executive functions of the government. While the division of power between the federal government and the 13 states is clearly spelt out in the federal Constitution, the federal government has overarching powers over the states. Matters relating to external affairs, defence, internal security, law, citizenship, finance, education, health, commerce, transportation, machinery of government (except that assigned to the states) and many other matters with the exception of Islamic religion, land, agriculture, forestry and local government all reside with the federal government. The nation's revenue is largely collected by the federal government which has been instrumental in directing the successful socioeconomic development of the country.

Like its Asian counterparts such as Japan, Korea and Singapore, Malaysia has a tradition of strong public sector involvement in economic development (Wan Abdullah and Maniam, 2012). The federal government has implemented successive economic plans since independence in 1957 and has achieved an impressive record of development for Malaysia due to sound macroeconomic management and political stability. Malaysia has advanced from a low-income nation in the 1970s to become an upper-middle income country by the early 1990s (World Bank, 2013). The Malaysian economic structure has changed and moved from being commodity-based to manufacturing-based within three decades, largely through foreign direct investments (FDI) in manufacturing for export markets. Policies have been designed to attract foreign capital, including the provision of infrastructure and education: of particular note is the heavy government investment in education through the New Economic Policy (NEP 1970–1990). However, in the early 1990s, a focus on knowledge-based industries was viewed by the government as the way for Malaysia to realise its aspiration to become a high-income country. A focus on ICT and knowledge creation as the path to sustained growth was first introduced in the Seventh Malaysian Economic Plan (1996–2000). To achieve that end, Prime Minister Mahathir (1982–2002) invited multinational ICT companies to invest in Malaysia.

The centralised nature of the federal government has allowed the country aggressively to pursue policies set out by the political leadership (Abdullah Sansui et al., 2003). The public sector plays the crucial role of implementing the policies designed by the prime minister and the cabinet. While the country has responded successfully to growing competition from other emerging economies in attracting foreign direct investment, the public service has faced rising customer expectations and mounting criticisms from citizens and civil society that the bureaucracy is overly hierarchical and inefficient (Siddiquee, 2006b). Business has also added its voice to the criticism, indicating that inefficiency in public management could impede investment and hold back economic growth.

This prompted former Prime Minister Mahathir to embark on a massive program of public sector reforms. Heavily influenced by the neoliberal thinking of the New Public Management (NPM), Mahathir commenced the reforms with the objective of a lean, efficient and effective government, starting with addressing the work ethic of public service employees (Siddiquee, 2006b). Together with the privatisation of many government and public utility companies, a sweeping range of administrative improvements

was introduced by Mahathir in the 1980s. They were further consolidated under the banner of the Excellent Work Culture Movement, launched in November 1989, to inculcate a culture of excellence in public sector agencies based on the core values of quality, productivity, innovation, integrity, discipline, accountability and professionalism (Siddiquee, 2006b). This was followed by a focus on quality, with the adoption of the internationally recognised ISO 9000 series, Total Quality Management (TQM), the Client Charter and various other customer-oriented counter services.

The pursuit of quality management began in 1993 with the introduction of client charters (Rahman, 1995). All government organisations were instructed to issue these charters containing the service standards that customers should expect. However, at least in the early years, citizens had little or no input into determining what these standards should be despite the apparent existence of feedback mechanisms. In 1996, Malaysia introduced the ISO 9000 series and became the first country to employ this mode of quality assurance across all government agencies, both federal and subnational (Abdullah et al., 2012). A further quality management initiative occurred in 1999 with a benchmarking program, 'a systematic and continuous process to identify, learn, adapt and improve best practices' (Siddiquee, 2006b: 348). TQM completed the Malaysian government's embrace of quality management and was seen in such things as quality control circles and quality assurance units (Sarji, 1996). While the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) was entrusted with responsibility for monitoring the progress of quality initiatives, the National Institute of Administration (INTAN) was instructed to provide necessary training to public officials in implementing quality management programmes.

Numerous awards were introduced to further reinforce the notion of an excellent work culture. These included the Prime Minister's Quality Award and the Public Service Quality Awards, as well as a number of other awards for specific achievements such as the Client's Charter Award, the QCC Award, and the District Office and Local Authority Quality Award. A Public and Private Sector Joint Research Innovation Award was also introduced. Satisfying customer requirements was seen as the main objective of all quality initiatives, but it was evident that the desired improvements in bureaucratic performance were not forthcoming and the 'public sector in Malaysia continues to suffer from low level of efficiency and organizational competence' (Siddiquee, 2006b: 353).

Despite the bureaucratic shortcomings, economic growth was still strong in 1996 at 10% (Bank Negara Malaysia, 1999; World Bank, 2013). There was a fiscal surplus and external debt was only 40% of gross national product (GNP). The current account deficit decreased from 10% to 5% of GNP with the positive trend expected to continue. Inflation was also low at 2.1%. The banking system was judged to be in good order according to standard international measures, while the core principles for effective banking as recommended by the Bank for International Settlements had been adopted by Malaysia.

These favourable economic indicators notwithstanding, in mid-1997, the region was struck by the Asian Financial Crisis plunging the Malaysian economy into severe negative growth of −7.4% in 1998. The National Economic Action Council (NEAC) issued ten strategies to provide short and mid-term directions for the economy (Wee, 1998). Objectives included the following: to attract and retain foreign direct investment; to promote domestic investment; to boost agriculture and the rural economy; to seek new

sources of growth, with a special focus on the service sector; to enhance the capital market and employee provident fund; to enhance the government delivery system; to revitalise national competitiveness; to enhance the efficiency of revenue collections; to revise macroeconomic policies; and to promote investment in tourism and education from Islamic countries.

Further reforms in the civil service were thus triggered. In line with the NEAC's recommendations, the public service in Malaysia embarked on a three-pronged strategy: strengthen government delivery systems at all levels and institute fast track approval for business licences, certificates of fitness and building plans; redesign the government interface with the public based on clear rules and transparent procedures; and improve the quality of information available to government and policy-makers for monitoring and planning purposes by extending the breadth and depth of statistical coverage (Wee, 1998). The three-pronged strategy for public service reform clearly indicated the necessity of the serious promotion of e-government.

## The emergence of e-government in Malaysia

By the mid-1990s, although the economy was growing at a healthy rate, there were signs that a new strategy was needed to maintain the momentum. E-government was conceptualised as one of seven flagships under the development of Malaysia's Multimedia Super Corridor (MSC) framework. The MSC project was established in 1996 as a primary vehicle for the infusion of ideas and research in ICT and multimedia. The government began to focus on developing a knowledge-driven economy by leveraging on ICT as a key enabler to accelerate the country's competitiveness. Moreover, economic recovery after the 1997 Asian Financial Crisis was slow-paced for Malaysia and the economy was not able to regain its pre-crisis momentum. The government thus decided to take systematic steps to reinvent itself by embracing the digital economy. Beginning in the year 2000, its aim to create a seamless system for service delivery required the establishment of an interconnected network between public sector agencies for effective interaction, coordination and information-sharing. This was implemented through cross-cutting policies and programs under the No Wrong Door Policy and the use of a single reference number in dealings between individuals and government agencies through the national birth registration. This was the MyID initiative.

The federal government started to redefine the relationships of government to citizens and business, and within itself. The notion of 24/7 service delivery began to take hold, allowing citizens and businesses to obtain around the clock access to government services. Internally, government procedures were automated replacing paper-based manual transactions. The advancement of ICT in the Malaysian public sector had evolved from the use of computers at government service counters in the 1970s to the use of web portals in the early 2000s. Among the goals of the e-government initiative were development of a knowledge-based society; increasing efficiency; improving service convenience, accessibility and reliability; providing faster turn-around, improved information flow and multi-channel delivery (Salmah, 2003).

The expansion of ICT services among the general public and into rural areas was given priority under the Eighth Malaysia Plan (2001–2005). Under the Ninth Malaysia

**Table 1.** Malaysian government development expenditure and allocation for ICT-related programs, 2001–2010.

| Program | Eighth Malaysia Plan 2001–2005 RM million | Ninth Malaysia Plan 2006–2010 RM million |
|---|---|---|
| Computerisation of government agencies | 2125.0 | 5727.5 |
| Bridging the digital divide | 2433.1 | 3710.2 |
| School | 2145.1 | 3279.2 |
| Communications infrastructure | 245.0 | 150.0 |
| Telecentres | 18.1 | 101.0 |
| ICT training/services | 15.9 | 180.0 |
| ICT funding | 1125.6 | 1493.0 |
| MSC multimedia applications | 1153.1 | 1100.5 |
| E-Government | 537.7 | 572.7 |
| Smart school | 363.9 | 169.8 |
| Tele-health | 91.8 | 60.0 |
| Government multipurpose card | 159.7 | 296.0 |
| MSC development | 320.8 | 377.0 |
| ICT Research & Development | 727.5 | 474.0 |
| Total | 7885.1 | 12888.9 |

Source: EPU, 2006: 154 (Table 5.4).
ICT: information and communication technology.

Plan (2006–2010), ICT development was seen as an important driver for positioning Malaysia as a knowledge-intensive economy. The Ninth Malaysia Plan aimed to expand the existing communications network across the country. The Tenth Malaysia Plan (2011–2015) has reinforced the government's focus on improving public service delivery for citizens and the business community through ICT by adopting a whole-of-government approach for developing the government's ICT infrastructure to enhance the productivity and efficiency of the Malaysian public sector.

During the Eighth Malaysia Plan period, a total of RM7.885 billion was allocated for ICT-related programs and projects, and the amount allocated under the Ninth Malaysia Plan for ICT development was RM12.889 billion. Table 1 summarises the total allocations for ICT development projects in Malaysia over 10 years under the Eighth and Ninth Malaysia Plans. The picture is one of investment growth in most areas of ICT and e-government.

## E-Government Steering Committee

To provide an oversight of e-government development in the federal public sector, the E-Government Steering Committee (EGSC) was established. The purpose of the EGSC was to ensure high-level direction and monitoring for e-government policy and initiatives and to approve e-government proposals from different organisations. The Committee's membership clearly reflected the importance attached to e-government in official circles. The EGSC is chaired by the Chief Secretary to the Government and

draws members from leading government agencies at the centre of government including the Economic Planning Unit (EPU), Implementation Coordination Unit (ICU), National Institute of Public Administration Malaysia (INTAN), Treasury, the Ministry of Energy, the Ministry of Communications and Multimedia, the MAMPU, and the Office of the Auditor General. MAMPU acts as the secretariat for the EGSC. It is responsible for the day-to-day planning, implementation and monitoring of e-government initiatives. Eight major projects were implemented by MAMPU as core e-government applications: each of these is described in the next section.

The E-Services application enables the public to transact more easily with government and utility companies through multiple delivery channels such as kiosks and other internet services. Four government bodies are involved in this e-service, including the Road and Transport Department (JPJ), the Ministry of Health, the National Utility Company (TNB) and the Malaysian Telecommunications Company (TMB). The public has a choice to make payments via credit card or through myEG prepaid. Renewal slips can also be delivered to individual homes or offices at minimal charges. One of the benefits derived from the E-Services application includes a choice of multiple delivery channels that is available 24 hours a day, 7 days a week.

JPJ provides driver and vehicle registration, licensing and summons services electronically, including test-scheduling and test-taking. The Ministry of Health records patients' health data, makes public announcements regarding particular diseases or medications and provides medical information to the public.

## Types of e-services

### Electronic procurement (e-procurement)

One of the main pillars of e-government in Malaysia is electronic procurement. E-procurement was introduced in 2000. The prevailing hierarchical and opaque nature of decision-making involving government purchases of goods and services had been linked to inefficiency, corruption and kick-backs (Hui et al., 2011). It caused leakages of public funds and abuses of power by public servants. Hence, e-procurement was introduced to ensure that the purchasing process was more transparent. E-procurement represents an online government procurement process for goods and services linking more than 150,000 suppliers to all 28 ministries and government agencies. Just after launching e-procurement in 2002, the Malaysian government was already spending approximately RM35 billion annually on procurement of goods and services (Muhammad Rais and Nazariah, 2003). The system begins with product requisition and supplier selection, and is followed by electronic approval and issuance of purchase order. The order fulfilment process includes order tracking, delivery acknowledgement and invoicing. The final process is order payment where payment matching, ledger linkage and electronic payment are undertaken. All these processes occur electronically. The benefits of e-procurement are improved turn-around time in processing procurement transactions, enhanced government ability to operate as a 'smart buyer', and cost saving for the government and its suppliers.

Since its inception, more than 1.4 million transactions have been carried out, valued at RM15.485 billion (National IT Council of Malaysia (NITC), 2013). While

implementation has been gradual, in the first quarter of 2013, the system was used to perform 474,000 transactions totalling RM4.454 billion. As of 2012, 70% of government suppliers were registered in the e-procurement system. Additionally, since the system is gaining traction, the Ministry of Finance in 2013 has stipulated that at least 75% of all procurements are to be done through e-procurement.

### Human resource management information system

Human resource management information system (HRMIS) was introduced to enable effective staffing, automation of human resource management (HRM) processes, consolidation of HRM data, better communication, movement towards the paperless office and increased flexibility and openness. It is a system that provides a comprehensive range of HRM functions and processes for managing and developing public sector personnel (Maniam et al., 2012). According to an interview with a MAMPU official, the 'HRMIS provides a single interface for government personnel to perform human resource management functions in an integrated environment'. HRM data are gathered in a centralised repository so that government organisations can undertake more informed planning and management of staff. HRMIS assists with manpower planning, recruitment and placement of government employees and confirmation of appointment, pension status, training, salary management, promotion and retirement. The HRMIS is aimed to facilitate effective HRM and assist with the integration and streamlining of human resource functions across the Malaysian federal government. It is used in at least 724 government agencies.

### Project monitoring system

The project monitoring system (PMS) provides a mechanism for planning, controlling and monitoring development projects in an integrated manner (Maniam et al., 2012). It allows accurate and timely capture of project information, and also ensures that up-to-date information is available in a variety of formats to enable management at all levels to analyse, forecast and prepare reports for development projects. PMS provides an online monitoring system throughout each project's duration so that better management can be facilitated at each stage of the project cycle. It has been implemented nationwide across 24 ministries. Under the PMS, information can be retrieved by agencies at any time. It also provides the capability to conduct social impact analysis and simulation, and forecasting in the second phase of the project, and has the flexibility to produce reports according to requirements.

### Electronic Labour Exchange

In May 1999, the government launched the Electronic Labour Exchange (ELX) 'as the nation's single source of labour information for the government agencies, businesses and members of the public' (Siddiquee, 2006a: 4). The purpose of ELX is to improve the mobilisation of the nation's human resources, and to ensure that they are utilised for the greatest benefit to the economy through systematically matching job

seekers with job vacancies (United Nations Public Administration Network (UNPAN), 2010). The three primary applications of the ELX are the Job Clearing System (JCS), the Labour Market Database (LMD) and the Office Productivity System (OPS). Together, these applications form a one-stop centre for labour market information that is accessible to the public, both locally and overseas. This includes Malaysian students abroad, the domestic private sector and potential foreign investors. The major benefits of the ELX are that it provides the facility for systematic pairing of job seekers with appropriate job vacancies, accurate real-time labour market data and improved job counselling services.

## E-Syariah

This e-government initiative is concerned with the Syariah courts that deal with matters involving only Muslims. The court system was characterised as inefficient and outmoded leading to considerable delays in addressing and resolving cases (Ramli, 2012). Thus, in 2007, steps were taken to enhance the efficiency, effectiveness and responsiveness of the Syariah courts through the application of ICT. A number of initiatives have been introduced including the Syariah Court Case Management System, Syariah Lawyers registration System, e-Portal, Library Management System and Office Automation System. Despite early difficulties, the impact of E-Syariah has been judged as 'a remarkable success' although problems can still arise, such as in online payments (Ramli, 2012: 367).

## E-land

E-land was introduced by the Ministry of Natural Resources and Environment as a government flagship project largely in response to complaints about the poor quality of the ministry's service delivery resulting from inefficient bureaucratic processes. This was particularly worrying for government as land administration was proving to be a disincentive for both domestic and foreign investors. Thus, the aim of E-land was 'to develop an integrated, comprehensive and user-friendly land management and administration system to enhance the speed and quality of service delivery' (Ramli, 2012: 367–368). A survey in the state of Penang found that the introduction of E-land had brought about significant improvements in land management (Ramli, 2012).

## E-courts

The court system in Malaysia was criticised because of its 'dilatoriness' in resolving cases thus leading to long delays in legal process and a backlog of cases (Hassan and Mokhtar, 2011: 240; Salmah, 2003). Thus, in 2004, pilot projects involving the application of ICT were introduced culminating in the unveiling of the complete E-courts system in 2011. The system consists of four components: a video-conferencing system; a case management system that comprises a queue management system that arranges the attendance of lawyers and e-Filing that enables the filing of cases online; a community and advocacy portal that facilitates communication between the courts and the public;

and case recording and transcribing using electronic means that relieves judges of the necessity of making detailed notes.

## Business Licensing Electronic Support System

In order to support private sector businesses, MAMPU initiated a business process re-engineering (BPR) program. When the concept of BPR was first introduced in 1993, it fundamentally shifted the structure of public sector work processes. Each work procedure was scrutinised under the BPR initiative to reduce overlap and increase efficiency. This was conceptualised as part of an incremental approach to business process improvement and TQM across government ministries and agencies to increase innovation and flexibility. Based on such BPR initiatives, 82 public agencies, in consultation with MAMPU, reduced the number of work processes from 932 to 545 (MAMPU, 2013). This led to the development of the Business Licensing Electronic Support System (BLESS) to expedite business licensing processes.

BLESS was specifically established to automate the newly revised processes following the completion of BPR initiatives. As a result, the number of applications, approvals and licenses could be simplified and condensed into simple guidebooks such as *Getting Started – Private Higher Education Institution Businesses in Malaysia* and *Getting Started – Hotel Businesses in Malaysia*. Through BLESS, businesses can access 8 ministries and apply for 39 business licenses (ICU, Malaysian Government, 2011). To date, this portal has been visited by more than 265,000 visitors. Since its inception, BLESS has assisted almost 7000 users. In 2011, 599 businesses were registered using BLESS and this number has doubled to 1201 in 2012. In 2013, 5112 businesses were registered in the first half of the year alone. Prior to BLESS, this would have involved an exhaustive process for new businesses to obtain information on facilities and to undergo an onerous application process to gain the necessary licences and permits to operate in Malaysia.

These initiatives have led to major improvements in the business environment and the nation's competitiveness and are reflected in many international surveys. According to the World Bank's annual index on the ease of doing business, Malaysia has recorded remarkable progress in its international standing, moving up from 21 in 2006 to 12 among 185 countries in 2013 (see Figure 1). The World Bank has acknowledged Malaysia as one of the top ten reformers within the Asia Pacific Economic Cooperation (APEC) region that has made the most progress in regulatory practices (World Bank, 2013).

The World Economic Forum's *Global Competitiveness Report 2012–2013* ranked Malaysia at 25 out of 144 countries (see Figure 2). The country's most notable advantages were found to be Malaysia's efficient and competitive market for goods and services (11th) and its supportive financial sector (6th), as well as its business-friendly institutional framework.

*The Global Innovation Index* for 2012 notes that Malaysia comes first among upper-middle income economies in Asia, ranking 32nd (31st in 2011) with major strengths in market and business sophistication (ranked 14th and 11th, respectively) (see Figure 3). Malaysia is cited for having been a leader in adopting the latest technologies, as shown by its 6th rank for knowledge-absorption and its first place for high-technology imports.
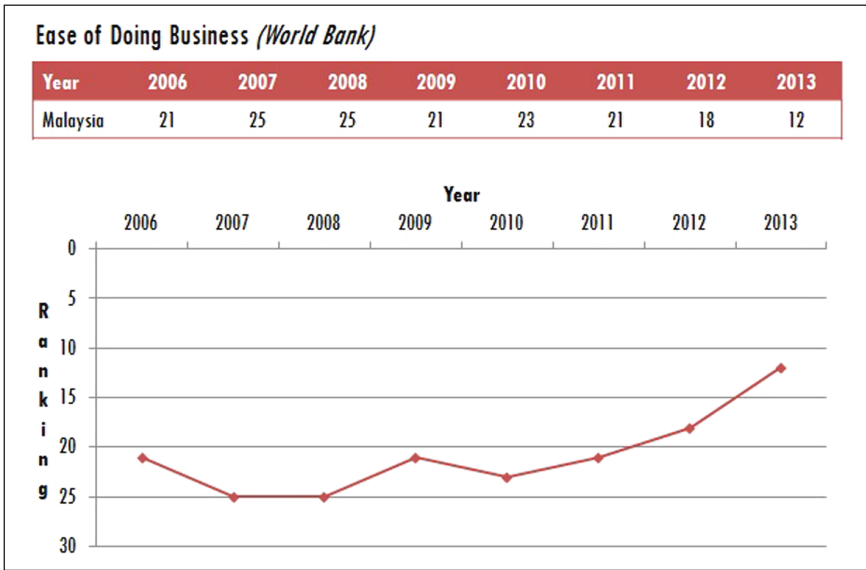
**Ease of Doing Business** *(World Bank)*

| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|------|------|------|------|------|------|------|------|------|
| Malaysia | 21 | 25 | 25 | 21 | 23 | 21 | 18 | 12 |



**Figure 1.** Malaysia – ease of doing business indicators.
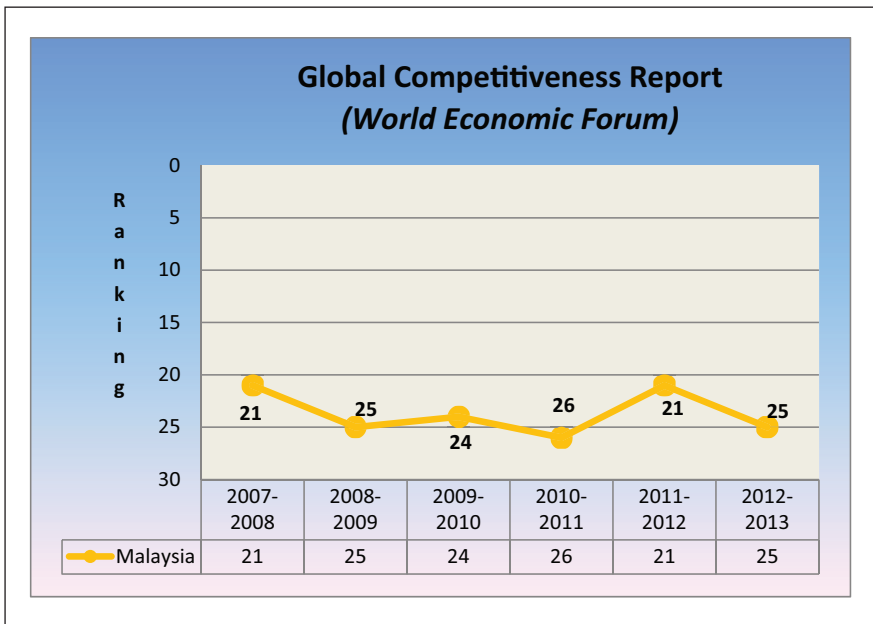Source: World Bank (various years) *Doing Business*.



**Figure 2.** Malaysia and global competitiveness.
Source: World Economic Forum (various years) *Global Competitiveness Report*.
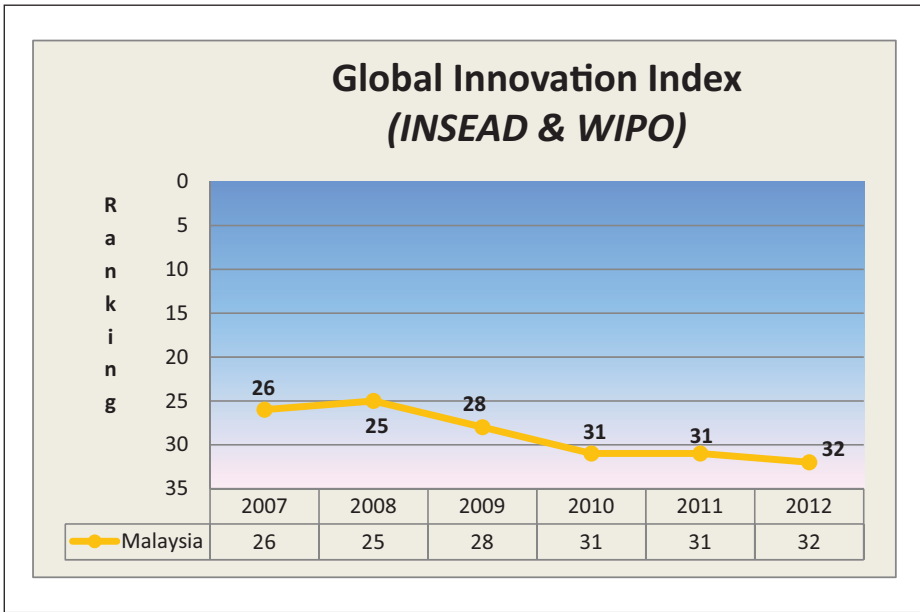
**Figure 3.** Malaysia and global innovation.
Source: Cornell University, INSEAD and WIPO (various years) *Global Innovation Index.*

## Database on poor and low-income people (e-Kasih)

E-Kasih is the National Poverty Databank that was developed following a cabinet decision in 2007. A meeting of cabinet ministers and the state chief ministers decided on a more vigorous effort to address extreme poverty. In the 1970s, 49% of Malaysians were considered poor. Today, the poverty level has been reduced to 1.7%, although extreme poverty remains entrenched. The issue of extreme poverty was highlighted in the Ninth Malaysia Plan and to help address this, e-Kasih was designed to provide a single database holding all relevant information including citizens' profiles, the level of assistance rendered to a household and the number of new applications for assistance received. E-Kasih provides a single database for recording the level of assistance provided to low-income citizens in Malaysia and has reduced the level of overlap and waste between government agencies. Social workers also have increased tools available to monitor the distribution of government aid. E-Kasih has also allowed the government to have more reliable statistics, analysis and reports and has enabled more accurate mapping of poverty. Moreover, welfare agencies are able to guide businesses' corporate social responsibility (CSR) efforts to those who are truly in need. As of mid-2013, 442,000 entries are on e-Kasih. In the state of Sarawak, following the registration of citizens facing extreme poverty, aid distribution was increasingly targeted, and 95% of 25,000 persons classified as living in extreme poverty received government assistance.

**Table 2.** Malaysia's performance in the United Nations e-government survey.

| Year | Rank | Index |
|------|------|-------|
| 2003 | 43 | 0.5240 |
| 2004 | 42 | 0.5409 |
| 2005 | 43 | 0.5706 |
| 2008 | 34 | 0.6063 |
| 2010 | 32 | 0.6101 |
| 2012 | 40 | 0.6703 |

Source: Adapted from *United Nations E-Government Survey*, UN (various years).

## E-government growth and challenges

Table 2 demonstrates the performance of e-government in Malaysia based on an annual global survey conducted by the United Nations. The index shows sustained improvement over the years although a fall in 2012 to 40th from 32nd in 2011. The latter is more a reflection of strong advances made by other countries than a decline in Malaysia's e-government provision as can be seen from the consistent rise of Malaysia's index score.

Apart from the eight main e-government projects, several government agencies have taken initiatives to commence online services to increase the ease and efficiency of public service provision to citizens (Mohamed et al., 2009). These services include e-Tanah to improve land administration services; the Training Information System (e-SILA); the Public Services Portal (myGovernment); e-Consent in land administration; e-Local Government (e-*Pihak Berkuasa Tempatan*; e-PBT) for local government authorities' service delivery; Pensions Online Workflow Environment (POWER); e-Kehakiman to upgrade the quality of court services; e-Filing for filing court cases online; and the Custom Information System (SMK).

In 2009, Malaysia's mySMS system won the Asia Pacific Information and Communication Technology Awards (APICTA) award for the best project demonstrating creativity and excellence in ICT. The system enables users to receive information and documents on demand, and to broadcast information from government agencies, including emergency information and basic notifications. The mySMS system also allows users to place complaints with government agencies.

One of the main challenges faced by the government is the issue of the 'digital divide'. All e-government projects require users to have basic IT knowledge and access. However 2010 statistics from the Malaysian Communications and Multimedia Commission (MCMC) indicate that, whilst broadband penetration in Malaysia rose dramatically between 2007 and 2010 from 15.2 per 100 households to 55.6 per 100 households, access remained unevenly distributed. In 2008, 85% of household internet use was in urban areas, and community centre access, whilst increasing, remained sparse. Whilst 23.7 people per 100 in Singapore in 2009 had broadband access, in Malaysia the figure was 9.2%. Nevertheless, the percentage of households reporting in 2008 that their main use of the internet was for e-government transactions was 19.8 per cent (MCMC, 2010). Nevertheless, many e-government services have received poor responses from citizens who still prefer to line up in government offices rather than engage online. In the case of

government officials, agencies also need to organise enhanced IT training and to equip their staff with the appropriate IT knowledge to enable them to become more effective users of the e-government systems.

Another major challenge to the adoption of e-government is the need to once again reengineer and streamline current business processes. The majority of government officials are comfortable with the traditional counter services and resist the move to e-government services. Although such attitudes are slowly changing, it will take some time and effort to change the mindsets of government employees from their traditional thinking and work practices to accepting the use of e-government services. Many government officials consider e-government services as complementary to, and not substitutes for, traditional over-the-counter services.

The work culture within government is seen as being resistant to change and this contributes significantly to e-government failures (Hazman and Maniam, 2006; West, 2004). Staff are comfortable with the traditional methods and some have negative perceptions about IT, viewing its use as adding more job responsibilities. Even though the government has spent a lot of money purchasing and upgrading IT-related infrastructure under the National IT Policy of 2005, the acceptance and use of these services is often limited to e-mails, internet and intranet and has not necessarily extended to active support for online participation or online services. Other issues, such as lack of funding, human resource implications and legislative barriers, also limit the successful implementation of Malaysian e-government projects.

A further threat to the successful implementation of e-government in Malaysia comprises the flagship applications and legacy systems that are attached to specific government organisations. There are complications and problems managing the integration of various government services across agencies at all levels of government administration. In addition, the existing e-government legislation is frequently perceived as lacking adequate safeguards over confidentiality of information and protocols relating to digital signatures (Maizatul et al., 2011).

Education, training and accessibility are among the main challenges in implementing e-government in Malaysia. Even though the level of education is improving, budget constraints and the availability of competent IT trainers limit the opportunities available to government employees to keep themselves updated with IT developments. Furthermore, accessibility is another issue. Not all parts of the country have infrastructure like electricity and internet access, which are basic prerequisites for e-government. Therefore, these missing 'e-factors' need to be resolved so as to ensure more users have the opportunity, knowledge and skills to access and use e-government services.

## Local authorities and e-government

The Ministry of Local Government and Housing targeted all 144 local authorities to offer e-government services (Sani, 2005). There has been strong interest in reducing the financial burden of smaller local authorities by enabling these often less financially able entities to leverage common government IT systems to manage their affairs. For example, the e-PBT provides help to local authority officers and users on a wide range of matters.

Similarly, the Perak Local Authority Integrated Accounting System was also implemented in Kedah under the smart partnership plan. However, the state authorities wield direct control over the local authorities in their respective states. Federal influence over local authorities has always been carefully measured.

The 10 city halls/councils and 36 municipalities have made some progress in local e-government services. E-submission of forms, e-payments of taxes, fees and fines, e-permit applications and e-complaints are available to citizens online (Maniam and Hazman, 2004; Sani, 2005). The uptake of these e-services has not been overwhelming because of fundamental problems of access and a perceived lack of security and privacy. Citizens remain reluctant to trust websites with their credit card details in an environment where the fraudulent use of credit cards is on the rise (Accenture, 2004; Mellor et al., 2002). This reluctance is compounded by the fact that most online payment for services is executed via third-party companies. The level of control over the integrity of these systems is unknown to the public. The lack of legal protection of private data provided by citizens to public agencies continues to have a restraining effect on the willingness of citizens to make use of e-government services (Ninth Malaysia Plan, 2006–2010). Another key issue relating to e-government implementation at local government level is a perceived lack of security and privacy (Hazman et al., 2006).

In 2007, the Malaysian government introduced an e-government application called eKL, whose purpose was to integrate service delivery across government organisations in order to provide more effective and efficient services for citizens and businesses within the Klang Valley, an urban area incorporating Kuala Lumpur, Selangor state and its vicinity. The eKL initiative was based on the principle of 'one government, many agencies' to create a digitally connected Klang Valley in which services from all government agencies are linked.

## M-government

Mobile phones for m-government are now seen as a major future element of electronic government in Malaysia. MySMS is an m-government initiative that utilises SMS mobile technology to enable citizens to remain connected to government news and services. MySMS aims to standardise the use of a single number, 15888, to access government news and services such as traffic violations summons, payments and renewal of driving licenses (Ahmad et al., 2011). By 2010, there were 158 SMS services provided by 50 agencies. While some e-government experiments have not met the expectations of citizens and have made them cautious when encountering new ones, mobile government initiatives are aimed to rebuild trust through faster interaction of government with citizens and more effective and efficient service delivery (Ahmad et al., 2011).

Market penetration of mobile devices in Malaysia has grown considerably from 5.1 million (21.8% of the population) in 2000 to 21.8 million in 2013. This has placed significant strain on m-government implementation. It is inevitable that mobile phone users will want government services which are compatible with mobile technologies and are accessible anywhere and at any time. Government will thus have to ensure that m-

government applications reach a large and increasing number of citizens in a more convenient manner (Kushchu and Kuscu, 2003). However, according to Ahmad et al. (2011), until now the m-government services in Malaysia have been limited and their usage has been low. Unfortunately, the design of the e-government official portal does not allow citizens to navigate easily or access the services offered using their mobile devices (Thunibat et al., 2011).

## Conclusion

The Malaysian government has always been open to public service reform and has a long record of introducing innovations to improve the operations of its many organisations. The latest of these innovations has been e-government. There has been much effort and expenditure over more than 10 years to introduce e-government modes of delivering services within and between government organisations, and between government organisations and the public and business. The reforms have affected large numbers of activities and processes of government at the national and local levels. These concerted attempts to improve service delivery have gradually given rise to increased cooperation between government agencies, and service delivery silos are slowly beginning to break down. Furthermore, Malaysian citizens can direct feedback to government agencies and ministries that are consulting the public through their websites. From these consultations and the desire for greater efficiency, effectiveness, accessibility and responsiveness, government services have undergone some streamlining and attempts to make them more user-friendly.

While there has been a considerable amount of experimentation and innovation in e-government, the utilisation of e-government modes within government, and between government, citizens and business, has not been as high as expected. Malaysia still ranks only 40th in the world on the United Nations e-government annual survey despite all its investment in e-government. There are challenges that have been encountered and for which solutions are required. Among government officials there is some resistance to using e-government modes as the main forms of service delivery. Traditional attitudes to service delivery as being over-the-counter are deeply entrenched in many officials' and citizens' minds. Furthermore, some officials view the IT solutions of e-government as adding to their work responsibilities rather than simply being another aspect of them. There are shortcomings in training and skills among officials which limit the possibilities for operating e-government despite the enormous investment in infrastructure and software. Among citizens there is evidence of a digital divide and inequality between regions and populations that work against higher uptake of e-government, while the level of confidentiality in e-government has been questioned. Despite these challenges, Malaysia has been advancing in its United Nations e-government index score (although not advancing up the league table). It is, however, second in ranking only to Singapore in Southeast Asia and well ahead of all other South Asian nations (United Nations (UN), 2012). The government has maintained consistent commitment to e-government and has ambitious targets for the future. With 37% of services available online in 2011, it was planned that the figure would rise to 50% by 2012 and 90% by 2020 (Azman, 2012). By 2015, the government aims to have 70% of

intra-government correspondence online and 50% of total transactions online. Malaysia is certainly trying to 'keep ahead of the game' in e-government.

## Funding

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