ICT in the Context of Public Sector Service Delivery: A Malaysian Perpective

MANIAM KALIANNAN,
Faculty of Administrative Science & Policy Studies
Universiti Teknologi MARA
40450 Shah Alam, Selangor
MALAYSIA
maniam@salam.uitm.edu.my   http://www.uitm.edu.my

MURALI RAMAN,
Faculty of Management
Multimedia University
Persiaran Multimedia, 63100 Cyberjaya, Selangor
MALAYSIA
murali.raman@mmu.edu.my   http://www.mmu.edu.my

MAGISWARY DORASAMY
Faculty of Management
Multimedia University
Persiaran Multimedia, 63100 Cyberjaya, Selangor
MALAYSIA
magiswary.dorasamy@mmu.edu.my   http://www.mmu.edu.my

Abstract: **-** This paper examines the implementation of various e-Government projects in Malaysia since it was launched in 1996. The paper will discusses the challenges and issues related to these projects and suggest some recommendations as improvement tool to uplift the e-Government program to greater heights. Essentially our findings suggests that apart from technical considerations, the true value potential of ICT utilization in the context of public sector delivery in Malaysia is contingent upon several factor spanning across legislative, procedural, managerial and organizational imperatives.

Key-Words: - ICT, e-Government, MSC Malaysia.

1 Introduction

The introduction and adoption of ICT in the private sector businesses such as e-Commerce and e-Banking and the diffusion of the Internet among the general population have resulted in a rising level of comfort and familiarity with the technologies in many contexts [3]. As a result, many governments have invested huge amount of money in developing IT infrastructure and deploying the use of IT ICT to serve their stakeholders in an efficient and effective way. The initialization of e-government presents a way for governments across the world to provide citizens, businesses and other governments with convenient access to government services and opportunities of collaboration as well as political participation via internet and wireless communication technology [17][18]. The government's focus on the electronic delivery of public services comes at a time when consumers of commercial services are now familiar and comfortable with the

widespread benefits of information revolution [1][5][7][20]. Expectations are high and citizens now expect their public services to be equally accessible and convenient.

In last decade (2000-2010), concerted efforts were undertaken to provide a stronger platform for Malaysia's transition towards a knowledge-based society. Increasingly central of this effort was the promotion of ICT as a strategic driver to support and contribute directly to the growth of the economy as well as enhance the quality of life of the population. Investment by both the public and private sectors was directed at building the essential ICT infrastructure. This was part of the efforts to establish speedy and efficient network of facilities and services in order to encourage greater diffusion of ICT in the economy [6][19].

This paper presents overall ICT development initiatives in Malaysia with a special focus on the e-Government Flagship project implementation as part of the Multimedia Super Corridor (MSC) Malaysia. The next section presents the ICT landscape in Malaysia which includes the implementation of MSC Malaysia and e-Government initiative. Section three presents the e-Government projects and current updates of each project. Section four highlights some of the pertinent challenges and issues within the implementation of e-Government and ICT in general in the Malaysian public sector. Section five presents recommendations and concludes the core issues discussed in the paper.

2 ICT Landscape in Malaysia

The public sector in Malaysia is going through period of rapid change. The government's leading role in spearheading the surge forward into the information rich digital age has compelled the public sector to lead the way [4][8][9][11][15]. In the last several years, the public sector has become a major investor and user of information technology. The e-Government initiative requires the extensive reliance and use of IT. The allocation for and expenditure of public monies for the purchase of IT has steadily increased over the years [22][24]. During the Eight Malaysian Plan period, a total of RM 7.885 billion was allocated for ICT related programmes and projects and the amount allocated under the recent Ninth Malaysian Plan for ICT development is RM 12.889 billion. This will enable Malaysians to take advantage of advances in ICT to improve efficiency and productivity, thus contributing to the increased overall competitiveness of the economy [8][10][13][14]. Table 1 summarizes the total allocations for ICT development projects in Malaysia for ten years under the 8th Malaysian Plan [22] and the 9th Malaysian Plan [24].

Table 1: Development Expenditure and Allocation for ICT related Programmes, 2001-2010

Programmes	8 MP Expenditure (RM million)	9 MP Allocation (RM million)
▪ Computerization of Government Agencies	2 125	5 734.2
▪ Bridging the Digital Divide	2 433.1	3 710.2
- School	2 145.1	3 279.2
- Communications Infrastructure	254	150
- Telecentres	18.1	101
- ICT Training/ Services	15.9	180
▪ ICT Funding	1 125.6	1 493
▪ MSC Multimedia applications	1 153.1	1 100.5
- e-Government	537.7	572.7
- Smart School	363.9	169.8
- Telehealth	91.8	60
- Government Multipurpose Card	159.7	296
▪ MSC Development	320.8	377
▪ ICT Research & Development	727.5	474

Source: 9 MP (2006-2010).

2.1 Malaysian Public Sector ICT Strategic Plan

The Government of Malaysia has launched the Public Sector ICT Strategic Plan in 2003 to ensure that the various ICT initiatives undertaken by the Government agencies will be in line with the Public Sector ICT vision. In addition it is also aimed at providing efficient and quality service to its customers i.e. the citizens and businesses. In achieving this vision, the ICT Strategic Plan will be the blueprint that defines the vision, strategic direction and framework for the usage of ICT in the Public Sector; the objectives and strategic thrust areas of ICT development for the Public Sector; as well as the implementation strategies and action plans to be taken to realize the objectives of the plan.

ICT Strategic Plan Vision is:

- Towards Quality Public Service Delivery through use of ICT and Multimedia

ICT Strategic Plan Objectives are:
- Efficient and Effective Online Service
- Streamlining internal process and change work habit's
- Connect agencies through secured communication network

The Public Sector has a key role to play in supporting the Government's aspirations. In particular, the Public Sector has a pivotal role:

- To enable a conducive and vibrant economic environment;
- To facilitate growth and competitiveness of the industry and the Private Sector
- To support the country's manpower needs
- To enhance the quality of life of Malaysian citizens

In order to achieve the stated objectives, ICT is recognized as a key enabler for the Public Sector to carry out its role efficiently and effectively. The Government thus needs to define ways to leverage on ICT to transform the Public Sector's internal operations and provision of Government services to the public. This transformation involves providing the services and information via electronic means on an 'anywhere and anytime' basis. It also requires the creation of a conducive environment, effective back-office processes and seamless front-end integration across the Public Sector to encourage citizens and businesses to adopt the new practices. Table 2 summarizes some of the reasons for strong ICT agenda in Malaysia:

Table 2: Pushing factors for ICT development in Malaysia

No	Reasons	Descriptions
1	Political Will	• Political commitment • Visionary leadership • Government policies and strategies • Strategic programs • Explicit funding commitment • Legal and Regulatory
2	National ICT Policy Strategies	• Enhancing Position as a Global ICT and Multimedia Hub • Towards Ubiquitous Communications Network • Bridging Digital Divide • Rollout Designated Cyber-cities and MSC Flagship Applications • Fostering New Sources of Growth • Increasing Development of the ICT Workforce • Accelerating e-Learning Acculturation; and • Enhancing Information Security
3	ICT Strategic Programs	• National strategic ICT roadmap • Development of local content & industry • Shared services outsourcing • New sources of growth • DAGS roll-out • e-Learning implementation • ICT for All • MSC multimedia applications
4	MSC Malaysia – ICT Successes	• Computerisation of Government Agencies • Bridging the Digital Divide • Communications Infrastructure Service Provision Program • Telecentres • ICT Training/Services • ICT Funding • MSC Multimedia Applications • ICT Research and Development
5	Infrastructure	• Accessibility • Availability • Affordability
6	Human Capital	• Programs to Bridge the Digital Divide – Digital Dividends • Affordable Devices • Skills development • Knowledge workers • Certification

7	Content	• Development of local content
		• Content Focus Areas
		  - Mobile / 3G
		  - E-Learning
		  - E-Commerce
		  - Broadband Content
		  - Creative Multimedia – Animation, Games
		• Translation engines
		• Digitization of content

8	R&D and Technology	• New technology • Standards and Certification • Funding mechanisms
9	Environment of Trust and Confidence	• Sustainability – globalization / competitive environment • Human capital/capacity building – the need to align with new requirement/needs of the industry / new economy • Harnessing MSP in meeting global and national goals • Adequate indigenous content for meeting needs of local

2.2 Multimedia Super Corridor Malaysia

The MSC story begins with the "Vision 2020" statement and its commitment to making Malaysia a fully developed country by the year 2020. The Vision 2020 statement was created in 1991 by consultants at the Institute for Strategic and International Studies and later fully embraced by the former Prime Minister, Dato' Seri Dr. Mahathir Mohammed. It was realized soon thereafter that bringing Malaysian average income up to that of a "fully developed" state by 2020. Consultants and advisers to the Prime Minister proposed that the incipient of new ICT revolution, then becoming apparent, was giving birth to a new economy, the "Information Age" of the global economy.

The MSC is considered a long-term strategic initiative (1996-2020) which involves the partnership between the Government (as the chief architect of its vision) and the private sector (as the main drivers for its implementation). This reflects that the creation of MSC is a necessity, as the new engine of growth for the economy as well as to ensure Malaysia is moving in tandem with the rest of the world in embracing the IT revolution. Basically, the MSC is a dedicated corridor (15 kilometers wide and 50 kilometers long) which stretches from the Kuala Lumpur City Center in the north to the new Kuala Lumpur International Airport (KLIA) in the south. Besides offering the ICT initiatives, the corridor aims to attract the world's leading ICT companies to locate their multimedia industries, undertake R&D, develop new products and technologies and export from this corridor as their base. The corridor is also providing the ideal growth environment for the local entrepreneurs to transform themselves into world-class companies. The flagship applications are a necessity to drive the successful implementation of the MSC towards becoming knowledge society. There are three main objectives of the flagship applications:

1. To jump start and increase the momentum of the MSC
2. To make the MSC a global test bed for innovative solutions
3. To increase Malaysian productivity and competitiveness

This corridor houses core MSC initiatives (also called Flagship Applications), which include high-technology projects such as e-Government, Telemedicine, Smart School, Multipurpose Smart Card System, Research and Development Cluster, e-Business and Technopreneur Development. By the year 2020, the MSC will be extended to the whole country, transforming Malaysia to a knowledge-based economy and society, as envisaged in Vision 2020. The Government recognizes local and international companies that undertake ICT activities in the MSC by awarding them with a MSC Status. MSC-status companies enjoy a host of incentives and benefits from the Malaysian Government that is backed by the ten-point Bill of Guarantees. The MSC master-plan envisions a 20 year time frame for the full implementation and execution of the entire programme. This time frame is broadly divided into three phases, as shown in Table 3 below:

Table 3: Phases on MSC Implementation

Phase of MSC Implementation	Description
Phase I (1996-2002) Successfully create the MSC	• One super corridor • Core of 50 world class companies • Launch 7 flagship application • Introduce leading framework of cyber laws • Cyberjaya and Putrajaya as intelligent cities
Phase II (2003 – 2009)	• Create web of corridors • 250 world class companies • Set global standards in flagship

Link MSC to other cybercities in Malaysia and worldwide	applications • Harmonized global framework of cyber laws • 4 intelligent cities linked to other global cybercities
Phase III (2010 – 2020)	• All across Malaysia • 500 world class companies • Global test-bed for new multimedia applications • International Cyber Court of Justice in the MSC • 12 intelligent cities linked to global information highway

Source: www.mdc.com (2007)

2.3   E-Government Initiative in Malaysia

As Malaysia develops, government must keep pace with changes that are accruing. E-government presents a golden opportunity to update all elements of government to ensure that the public sector continues to meet the evolving needs of the public and the private sectors as the nation strives towards the goals of Vision 2020. The dual objectives of E-government are to reinvent the government in terms of service delivery through the use of IT and to catalyze the successful development of the Multimedia Super Corridor (MSC) with IT as one of the leading sectors of the economy [16]. While computerization programmes in both the public and private sectors had been going for several decades, it was with the MSC that Malaysia caught the attention of the world with this unique initiative to create an entire 'cyber-region' and a base for a world class technology, multimedia and content industry.

The vision of e-Government is a vision for people in government, business and citizenry working together for the benefit of Malaysia and all of its citizens [16]. The vision calls for reinventing government using multimedia and IT to improve productivity. It also seeks to create a collaborative environment that fosters the ongoing development of Malaysia's multimedia industry.

Electronic Government simply means government services to be conducted electronically via Internet. This strategy will lead to paperless management to cater product and services. The vision for Malaysia's E-government is one of government, business and citizenry working together for the benefit of the country and its people as a whole. It envisions a future where all components of society can communicate and transact their operations in an effective and efficient manner. The vision of electronic government is to transform service delivery through the use of IT and multimedia.   The core elements needed to achieve the electronic government vision are standards, security and legislation. The new electronic government administrative center in Malaysia is Putrajaya.

Successfully realizing the vision for E-government means fundamentally changing how government operates and implies a new set of responsibilities for public servants, businesses and citizens. The new services, information and channel for government to interact with the different constituencies will require all parties to become familiar with new technologies and develop new skills. The landscape of the E-government applications as follows (Figure 1):

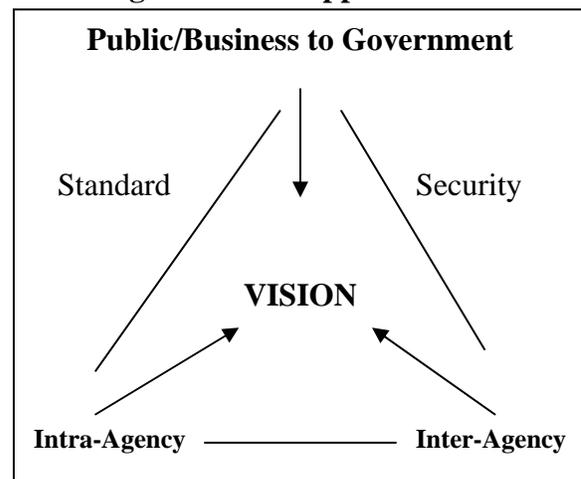**Figure 1: The Landscape of E-government Applications**

Figure 2 shows the overall model of e-Government development framework, i.e. from the agenda setting for the national ICT plan till the achievement of the Vision 2020

in making Malaysia a fully developed nation by transforming the country and its people into a knowledge based economy and society.

Figure 2: The Malaysia Model of e-Government Development
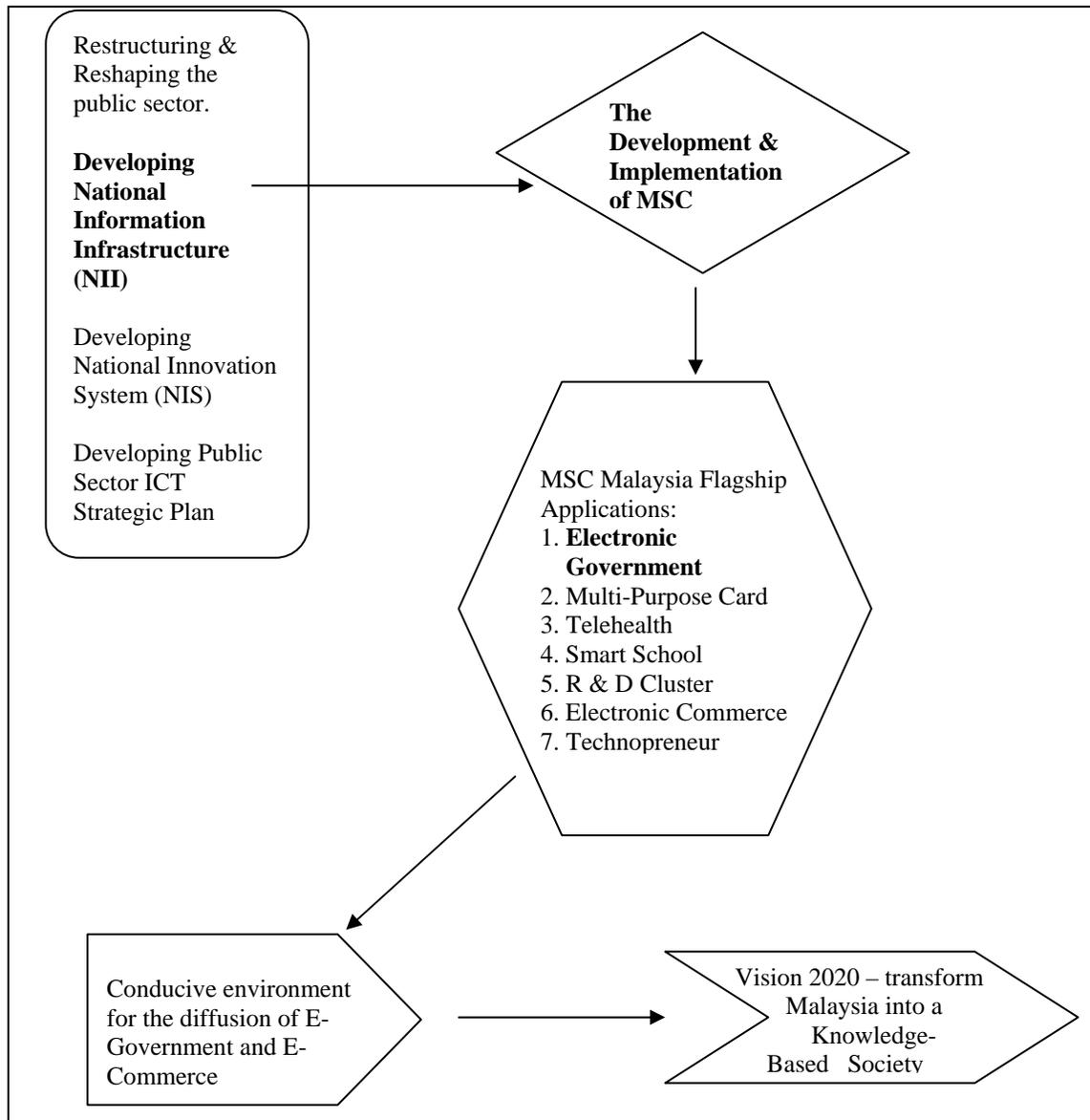
Source: Vision 2020 Blueprint (1996) [21][22]

2.3.1 Objectives of e-Government

The e-government stresses ICT development in government agencies. But more than that it involves transforming the new way the

government operates internally as well as how it delivers services to the people of Malaysia. It seeks to improve the convenience, accessibility and quality of

interactions with citizens and businesses. The objectives of electronic government are to reinvent government and to catalyze MSC. Reinventing government would address the following areas:

- Improving connectivity between all parties that deals with government be it public, inter-government agencies, private companies, and foreign country interrelationship. This gives better access to government.
- High quality services are expected to be assured.
- Better processes or systems are also crucial in terms of improving the government services.
- Create greater transparency and governance.
- Empowering government officers in the administration as well as the implementation level.

On the other hand, electronic government is a bridge to catalyze the MSC by attracting world-class companies to establish their regional operations and R&D activities in this country with the right environment and comprehensive packages offered. The good environment will in turn create opportunities for continuous innovation. Furthermore, to catalyze MSC, electronic government will also be a platform for collaboration between local and foreigners as well as government and private companies.

2.3.2 Benefits
The benefits to be yielded from the electronic government can be divided into three categories. Firstly, we will focus on the benefits from government to citizens or businesses. The electronic government will ensure easy access between the government, citizens and private companies. Government information, services and products will be easily available electronically. There will be no unnecessary delay to acquire any services. We probably just need to access the websites of related services or products needed. In addition, a new class of quality services will materialize, as the government system will be less complicated and therefore, better quality services are assured. Besides that, it will also be a multi-channel service delivery. This is to say that the people of this country will just need to choose the right channel, e.g. online or physical channels that suit them in order to conduct transactions with the government.

Secondly, the benefits created in terms of intra agency. Intra agency in this context simply means the communication between government departments or agencies. Business processes will be improved as the electronic government contributes to the sustainable implementation in handling the vast number of agencies that are part of the government engine. Indeed, this effort will also contribute to the human resource development. The business process improvements will help to equip government staff with skills for information age.

Thirdly, we will see the benefit for inter agency. There will be smooth information flow between agencies, best practice database and enhanced capability for information analysis through the use of ICT and multimedia tools.

2.4 Key Organizational Structures
The following are some of the important organizations involved in spearheading the ICT programmes in Malaysia:

- **E-government Steering Committee (EGSC)**

This is the highest level of the E-government implementation structure. The

Steering Committee is chaired by the Chief Secretary to the Government. Members of EGSC include representatives fro various government agencies such as the Economic Planning Unit (EPU), Implementation Coordination Unit (ICU), National Institute of Public Administration Malaysia (INTAN), Treasury, Ministry of Energy ,Communications and Multimedia, Malaysian Administrative Modernization and Management Planning Unit (MAMPU), Office of Auditor General, Public Service Division and Multimedia Development Corporation (MDC). MAMPU acts as the Secretariat to the EGSC. The key roles of the EGSC are to provide the policy direction and approve the E-government programme and activities. In addition, the committee also monitors the implementation progress of each pilot project under the responsibility of the lead agencies.

- **The Multimedia Development Corporation (MDeC)**

Established in 1996, the MDeC leads the development and implementation of the MSC. A government -backed organization, it acts as champion and international promoter of the MSC. Its stated mission is "to shape a world leading environment, attract and nurture leading-edge and world class companies, facilitate knowledge transfer and wealth creation, and build a value-based, highly effective institution".

MDeC acts as a "one-stop shop" facilitating applications from companies to re-locate to the MSC Malaysia. It shapes MSC-specific laws, policies and practices by advising the government and standardizes MSC's information infrastructure and urban development. In facilitating the establishment of company operations within the MSC, the MDeC serves as champion, facilitator and partner. As a performance oriented, client focused agency, it endeavors

to cut through bureaucratic red tape to provide timely information and good advice, expedite permit and license approvals and introduce companies to potential local partners and financiers. One division of the MDeC is the MSC Venture Corporation, created to provide venture capital to innovative and emerging ICT enterprises and multimedia companies at the start-up, growth and pre-IPO stages.

- **Malaysian Administrative Modernization and Management Planning (MAMPU)**

MAMPU was set up in 1977 as a central agency within the Prime Minister's Department. It was entrusted with the task of introducing administrative reforms in the public sector to upgrade the quality, efficiency and effectiveness of the Malaysian public service in accordance with national goals. MAMPU advises the Government in the area of organizational management and acts as consultant to various agencies for organizational development. It also provides technical and management expertise as the central agency for ICT development and office automation in the public sector. MAMPU has been intimately involved in the implementation of two key programmes, namely the ISO 9000 (also known as ISO 9001:2000) quality standard and the Electronic Government flagship of the MSC project [25][26][27].

3 E-Government Projects Update

There are eight projects launched to date under the e-Government Flagship since it was started in 1996. All this projects will use ICT and multimedia technologies to transform the way the government operates, coordination and enforcement. Figure 3 shows the e-Government website and Table 3 summarizes the projects and its characteristics.

Figure 3: e-Government in Malaysia (mygov)

900 websites across Federal, State and Local Authorities

www.gov.my

MyGovernment Portal :
- Citizen-Centric & Business Community Portal
- Single access to multiple communities
- 3,075 forms and 913 online services

Table 3: Main Projects under the E-Government Flagship

Projects	Characteristics	Current Status / Progress Report (Dec 2007)
Generic Office Environment (GOE)	Provides a new paradigm of working in a collaborative environment where government agencies communicate, interact and share information.	-New version of GOE-EGDMS has been introduced with a more user friendly features. - GOE is to be upgraded to 22 agencies.
Electronic Procurement (EP)	Links the government and suppliers in an online environment. Government agencies as buyers procure goods/services by browsing catalogues advertised by suppliers. Aimed at best value for money, timely and accurate payment.	- All 28 Ministries are using EP system - Since year 2001 until 31st October 2007, a total of 1,556 PTJs have been EP enabled. - In year 2007, 5,152 suppliers are minimum EP enabled
Project Monitoring System (PMS)	Provides a new mechanism for monitoring implementation of development projects, incorporating operational and managerial functions, and knowledge repository.	- SPP II has introduced web-based application. implementation of RMK-9 projects - Integration of SPP II system with e-SPKB has been rolled out to 3 pilot agencies and roll out to other agencies will be implemented in staggered manner commencing early 2008
Human Resource Management Information System (HRMIS)	Provides a single interface for government employees to perform HRD functions effectively and efficiently in an integrated environment.	-As of Nov 2007, rollout activities on base data preparation completed for 600 agencies. - 10 modules implemented in pilot agencies -ED and PR modules implemented in all Ministries and 12 State Secretariat Offices (SUK)
Electronic Services (e-Services)	Enables direct, online transactions between the public, the government and large service providers via electronic means.	-Renewal of Competency Driving License (Class D) can now be done online via JPJ portal or myEG (www.myeg.com.my). -Public has a choice to make payment via credit card, FPX or myEG prepaid. Renewal slip can be delivered to individual home/office with minimal charges. Updated of the new driving license expiry date in myKad can be done via myEG outlets or National Registration Department.
Electronic Labour Exchange (ELX)	A one-stop-centre for labor market information, accessible to government agencies, the business sector and the citizens.	-Fully rolled out for Ministry of Human Resources & all states & district offices of Manpower & Labor Department at 105 sites. - As of 31 October 2007, 106,285 active job-seekers were captured and 717,405 vacancies reported by employers with 18,562 job seekers hired.
E-Syariah	Introduces administrative reforms that upgrade the quality of services in Syariah courts. To enhance the Islamic Affairs Department's effectiveness- better monitoring and coordination of its agencies and 102 Syariah courts.	-Operation/Case Registration via MyKad at the front office counter. -Public can access E-Syariah Portal by visiting to www.esyariah.gov.my to get the information such as Syariah court procedures and regulations, online case pre-registration and online Faraid calculation.
E-Land	To achieve an updated, effective, efficient and accurate National Land Administration System via utilization of Information Communication and Technology (ICT), the e-Tanah project of Ministry of Natural Resources and Environment encompasses 24 main areas in land administration.	-The ministry had launched the e-Land programme in 2005. -The system was aimed at improving the Government's delivery services to the public pertaining to online land matters without the need to deal with many counters.

Source : MAMPU (**www.mampu.gov.my/** 2008)

4 Challenges

The implementation of e-Government project will bring benefits to the citizens, businesses and the government itself. However, implementing a successful e-Government project is not without any barriers in the process of planning, implementing, monitoring and evaluating the project.   Some of the barriers and challenges that could affect the e-Government implementation are:

- Legislative and regulatory barriers
- Budgetary framework
- Lag behind technological change
- Digital divide
- Work culture
- Various customer community expectation
- Grassroots level service
- Collaboration & integration among agency
- Country ' competitiveness
- Standardization and consistency
- Service delivery system

5 Conclusion

In order to ensure a successful planning and implementation of e-Government project, a proactive strategic planning is needed from the beginning of the project itself. Some of the improvement highlights are as follows:

- Determine optimum work processes to meet customer needs
- Enhance delivery mechanism at district level administration

- Provide efficient and various Customer-Government channel
- Enhance infrastructure capacity to support Interoperability, horizontal, services
- Review licensing and regulatory needs
- Draft standard and effective guidelines
- Institute work culture that is responsive to change

In summary, the success of E-Government rides heavily on a comprehensive development and implementation programme that touches all aspects of government. It requires new processes, systems, structures, training to develop new skills and shared values. Following the principle of "Think Big, Start Small and Scale Fast", once pilot projects have been undertaken, expanding with time to a wide ranging rollout programme embracing all government departments and services at the federal, state and local levels. In short:

- Major trends in E-Government indicate a strong shift towards customer and citizen centric
- E-Governance is beyond E-Government. E-Government looks at services delivery whereas E-Governance focuses on the results or the outcomes of the services delivered.
- E-Governance involves greater involvement of constituents, more transparent processes and higher accountability.
- Increasing adoption and usage of ICT remains a challenge and a priority.
- Malaysia and MSC initiatives have learned from Phase I experiences and are now moving to the next level of maturity, including E-Governance.

- Still plenty of opportunities fro smart governments, smart businesses and smart citizens.

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