# E-Government Challenges and Possibilities by using Information and Communication Technologies in Malaysian Governance

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*Abstract:This study examines the case of Malaysian's e-government applications and the effectiveness and encouragement of this applications on the Malaysian people with how changes the way of offering their services especially in Ipoh and Penang states the study discusses e-governance policies and applications in Malaysia, critical success factors and challenges to e-governance. The study found that the use of Information and Communication Technologies (ICTs) to bring about changes in government has great potential for the processes of governance. Previously those process stages have been hindered by the absence of citizen participation, the poor functioning of government services, lack of accountability and transparency, and the introduction of electronic governance mechanisms, must be revitalized. Simultaneously, citizens must undergo a change of mind, overcoming the "culture of fear" or "culture of non-confrontation", shortage and suspicion of community participation in seeing the welfare of their communities. ICT governance can be through offering space by which government and citizens can connect to the virtual space created and strengthened through leadership that could supports the governance in a good way and stakeholder as well.*

*Index Terms: Electronic challenges, electronic governance, e-government, ICT, technology acceptance.*

## I. INTRODUCTION

E-governmentande-governance are two concepts that have been interchangeably employed. Accordingly, in some studies, the concepts are regarded as discrete, while in some, the concepts were treated as similar and fused together to form e-democracy [1]. Meanwhile, in this study, the concepts are treated deemed as different from one another, and in the context of Malaysia, the process of e-governance, especially e-local governance needs to be explored in order to gain better comprehension initiatives of the locale e-Government. Specifically, the concept of e-governance includes the use of ICTs to achieve government efficiency and improved accountability [2]. The concept of e-Governance is also dubbed the "digital governance," and it encompasses the application of ICT-induced changes in the delivery services from the governance and the changes that include the interaction and involvement of citizens in the domain of governance [3].

Accordingly, about the e-governance context "e" denotes the usage of electronic media, especially the computer-mediated communications network within the context ofgovernance practice [4]. There are many definitions of governance but in general, most definitions link the term to the interaction process which takes place among the government, business, and civil society for the purpose of managing their political, social, and economic atmosphere [5]. In regards to e-governance, it is essentially a form of governance within an electronic setting; it encompasses the governance of and within the environment with the use of electronic tools [6]. Hence, the definition is broad and it denotes the extensive ICT implications. The public sector ICT usage is increasingly common in various nations, at Malaysia as well [7]. Relevantly, in the governance context, technology is viewed as a tool or facilitator for change. Also, it can be considered as a tool that presents the democratization possibilities or democracy renaissance [8].

Outcomes of technology usage have been positive. Somehow, it is crucial that technology usage does not end up in the techno-centric analysis or fall into technological determinism, in addition to the undeserved optimism or pessimism. It is also crucial that the study is perceived in how the technology affects the social context [9]. As posited by Adaptive Structuration Theory, the processof changecaused by theapplicationofinnovative informationtechnologiescanbe generated by twovantagepoints as follows:

1) The types of structures provided by innovative technologies.
2) Structures that are physically realized in human work where individuals engage in interaction using these techniques [10].

In this regard, monitoring these processes effect can best reveal the intricate linkage between technology and organization [11]. However, ICT usage in governance does not assure the improvement of processes of governance or the increase in the overall efficiency and productivity, and neither does it denote the assurance of citizen involvement. Still, the burning issue is on how technology usage can motivate total government organizational change. At the same time, the impact of the service delivering to the Malaysian needs to be explored, while equity, privacy, security and universal access need to be guaranteed [12].

## II. PROBLEM STATEMENT

The homogeneity of technology is closely linked to the heterogeneity of the context, and the technology associated with the use of e-government is closely related to the social context during its invention, design and dissemination. Thus, it is important to visualize the invention and design of e-government technology from social, political and cultural contexts; during its application, interaction contexts that

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affect its users. In understanding the success or failure of an e-government project, it is important that this complex interrelationship between technology and context.

Accordingly, there are seven dimensions that can create a model applicable to a wide range of case studies as follows: information (data flow, data stores, etc.); technology (hardware and software); processes (user activities, etc.) Competencies); systems and management structures; and other resources (money and time).

## III. ANALYSIS AND DISCUSSION

Within Asia, the framework can be interpreted in measurable analysis, including vision and leadership of e-government, budget allocation, e-readiness of infrastructure, accessibility of telecommunications facilities, and extensive connectivity. Other key components of the analysis include e-citizen policies and programs, communication factors, infrastructure adoption, e-literacy and public confidence protection. Thus, the understanding of e-government should be studied in terms of its perceived importance and perceived value in terms of the expectations and preferences of both users and citizens. Accordingly, frameworks are emphasized by analyzing the views of users or citizens regarding the application of the overall use of e-government technologies to their needs and how this affects their lives.

Hence, with the application of the framework proposed in Heeks and Bhatnagar, among the analyzed aspects in this study are as follows:

- Information flow: vertical and horizontal integration.
- Technology: Connect infrastructure / electronic readiness.
- Operations: service and transactions, access and use by citizens and political / citizen participation.
- Objectives And Values: The implicit assumptions about the objectives and the value framework adopted by the local government
- Employment and Skills: E-literacy.
- Management systems and structures.
- Citizen's views towards e-government

There are two basic types of e-management applications: internal ICT applications and external / front-line ICT applications. Internal ICT applications for e-government include solutions to streamline internal processes, including data encryption, file retrieval, document processing, data transfer as well as other administrative functions in government agencies. For external / front-end ICT applications, it serves as an interface between government and citizens or companies. With regard to ICT applications on the front lines, they interact or interact with citizens using electronic media.

External/Front-line ICT applications are further classable into Government-to-Citizen (G2C) or Government-to-Business (G2B).However, for the purpose of this study, only G2C services will be covered. G2C services include all services involving citizen interaction with the government using ICTs. These include: information or transactions using websites, handling applications in kiosks, call centers or hotlines for agencies, online voting or board meetings, application status updates using mobile phones or landlines, government payments with commercial banks.

There are countless ways to use ICT tools. The present study will examine the nature of ICT use in the context of national governance. This use can range from technical management tasks only to facilitating or supporting the business interface, industry and government or creating other innovative mechanisms. In the context of Malaysia, e-governance is a fairly new concept compared to other Asian countries. The country's ICT infrastructure appears to replace its neighbor base (with the exception of Singapore) but there are still many disadvantages, especially with regard to the use of ICTs, especially for government purposes. These include: the weak record of the government's response to online inquiries (and telephone), ineffective interactive mechanisms in government websites, the scarcity of government bureaucrats interested in the Internet, and Malaysia's generally unstable attitude towards public dialogue. All these shortcomings have become major issues in building the basic e-government framework.

However, the ambition to achieve a knowledge-based economy by 2020 has kept the mechanism on track. Accordingly, this study will focus on how Malaysia can use its vision and the benefits of ICTs to establish a common communication platform that will enable the effective participation of citizens in local government activities and the establishment of an effective e-government program.

The interaction of information technology and the context and how it affects the use of the local e-government project should be analyzed. For this purpose, the policies and uses of e-governance are analyzed in the Government of Malaysia. The analysis tracks are then examined in the implementation of the designated local e-government project. IT use tests are based on:

1) The types of structures provided by the latest technologies; and;

2) Structures that truly occur in human interaction occur among people and these techniques.

Accordingly, a partial view of the local government environment allowed the researcher to examine the interlinkages between structures, both physical and human, as well as their impact on the use of e-government.

Hence, the study carried out the in-depth interviews with the key informants who comprise government officers responsible in the upkeep of the applications of e-government, and the MajlisBandaraya Ipoh, the local government of Ipoh. Apart from these officers, the interviews were also carried out with the citizen representatives and community volunteers from Ipoh. These people have assisted in the promotion of the e-government project. In addition, the researcher also performed the analysis of secondary data and review of websites.

### A. Vision of Malaysia Government and Governance Electronically

The Malaysian e-government vision necessitates the reinvention of government as well as the application of multimedia/IT, in order to effectively improve productivity, while also producing a cooperative environment which

nurtures the enduring establishment of Malaysia's industry of multi-media.

The link between the government and the business and the community denotes the intra- and inter-agency improvements towards service delivery via the IT and multimedia applications. However, such vision requires government operations to be extensively reengineered on a large scale.In essence, the vision for e-government denotes the transformation of government operations and a fresh set of accountabilities for public servants, businesses, and citizens.

The e-government vision of Malaysia is grounded upon Vision 2020 set up by the country. As stated, by the dawn of year 2020, Malaysia is already a cohesive nation comprising of a self-assured Malaysian society embracing the solid moral and ethical values, living in a democratic, liberal and tolerant, caring, economically fair, advanced and affluent society, and in complete ownership of a competitive, vibrant, vigorous and resilient economy.

Accordingly, in achieving the vision, 9 core strategic challenges are to be faced. Among these challenges is the accomplishment of a scientific and advanced society marked by its innovativeness and forward-looking. The society is both a technology consumer and a contributor to the future scientific and technological civilization.This challenge has contributed to the modernization agenda for the Malaysian society. The vision has also pushed the country's move from an agricultural to industrial, and later on to the information economy.

### B. E-Government Vision from Multimedia Super Corridor (MSC) Perspective

The Multimedia Super Corridor or MSC, which includes Cyberjaya, Technology Core and Putrajaya, includes a physical area in addition to the Vision 2020 visualization of the country. It refers to a paradigm shift towards the new information age. The MSC takes a 15x50 km long corridor, governed by Petronas Twin Towers (North) at Kuala Lumpur International Airport (South). There are three phases to MSC implementation, from 1996 to 2020. Accordingly, Phase I (1996-2015) included the establishment of MSC and was successfully completed. During the second phase, a network of equivalent corridors will be developed in the country. In addition, a global framework for cybercrime will be adopted, and four of the five smart cities will connect to other cities around the world. During Phase 3, Malaysia will become the Superimedia Super Corridor. Accordingly, there will be 12 smart cities connected to the Global Information Highway, and the International Cybercrime Court will also be established within the MSC.

The Government of Malaysia has made substantial amount of investment in its attempt to establish a world-class infrastructure. In this regard, MSC has been fashioned in a manner that allows the generation of conducive environment for ICT linked production while also making available the platform for an information superhighway, which encompasses a network containing a high-speed link (10 GB/s network) linking MSC to Japan, the ASEAN, Europe, as well as the USA. The network is also endowed with the capacity to support expansive public administration, education, and business functions. The superhighway makes available the quick and easy quality access to global information.Meanwhile, with the innovative ICT application, the Demonstrator Application Grant Scheme (DAGS) will ease the social and economic progress specifically through the provision of funds for citizens to allow them to gain access to the MSC-linked opportunities and partake in multimedia development.

### C. Information and Communication Technology for E-Government for the Implementation of E-Government, Readiness Indicators for Electronic Infrastructure

In Malaysia, users of internet accounted to 8,692,100 individuals as of 2015, with 107,971 Internet hosts all over the country. There were 4,571,600 land lines while users of mobile phone accounted to 11,124,100. The first quarter of 2016 reported 17.9% of fixed line rate of penetration for every 100 inhabitants while that for cellular phone penetration rate was 46.2%. Further, the rate of penetration for Internet dial-up was 12.4 %, while that for DSL broadband was only 5.6%.

### D. Ipoh and Penang States and the Initiatives of E-Governance

National e-Government initiatives are channeled to local governments via Smart Local Government's Governance Agenda (SLGGA), and accordingly, SLGGA is responsible for promoting e-government among local authorities. For this purpose, a web portal was created in all local authorities. This web portal will allow the public to obtain the most recent information concerning the activities of and the services offered by their local governments. With respect to the website, it needs to have at minimum 5 functions as follows: e-submission, e-tax, e-complaints, e-licensing, and e-collection. In this regard, nearly all the examined local governments were able to deliver more than what is commanded. Also, through the adaption of the needs of community into the digital domain of e-government, the local governance is invigorated.

In Penang, most of its regions have fiber optic coverage. In fact, this state is well connected to other major Malaysian towns, either through internal fiber, microwave or space stations. In this case, approximately 375,000 communication lines were used, with the penetration rate of the phone from 259.0 per 1000 people to the residential area and 128.2 per 1000 persons for the business area. In addition, data from the Department of Statistics for 1998 and NITC 2000 estimates that the number of telephone devices per 1,000 people (residential) in Penang appears to be higher than the national average of 172.7 per 1000 people, second only to Selangor (309.1 per 1000 people). In terms of business, Penang ranked second after Selangor (153 per 1,000 people). Penang has been named the second most industrialized country, a production and manufacturing site.

Thus, it is assumed that a large proportion of national investments in ICT in manufacturing amounted to 1.2 billion Malaysian Ringgit in 2000 were multinational companies and small and medium industries in Penang. Meanwhile,

there are 334 schools in Penang, and 83% of these schools have a multimedia angle. Moreover, 50% of these schools have a computer lab, while 30% of these schools have a website.

It was estimated that in Penang in 2000, the rate of penetration of Internet was at 51.9 subscribers for every 1000 population. This reported number was greater than the national average of 39.5 subscribers for every 1,000. Comparatively, Kuala Lumpur had the rate of penetration of Internet at 103.9 for every 1,000 people, while Selangor reported 84.9 for every 1,000 people, whereas Penang reported 51.9 subscribers for every 1000.

Accordingly, the Penang K-ICT scheme was presented to provide a roadmap for the development of economy k in support of the goal of a fully developed country by 2010. Part of the plan includes the Penang i-Land concept with e-learning component, e-business and electronic manufacturing, Along with e-government. According to the Minister of State for Education, Human Resources and Innovation at the time, by creating an enabling environment for innovative ICT investments, developing knowledge-enabling industries, and expanding ICT skills and knowledge, the state government is already an enabling, catalytic and facilitator.

At present, K-ICT initiatives in Penang are focused on identifying high-value-added services in information technology, as well as in establishing ICT connectivity to society, particularly non-governmental organizations and other civil society organizations. However, at the time of this research, it appears that they have been more focused on the Penang E-Community Volunteer Portal, which includes an interactive web site that provides the community with information on community services and volunteer opportunities.

The portal is in fact a creative, service-oriented, low-cost and high-level enterprise that will implement new communication technologies and connect e-communities in Penang with the United Nations Research Center, Social, Economic and Environmental Research (SERI) with the community. This corresponds to the community's needs with voluntary services. . Thus, it is a single portal for all NGOs and civil societies in Penang, but the portal was not launched during the implementation of this research. As such, the researcher was unable to determine the actual work of the e-governance scenario.

However, the government portal of Penang is already functioning. This requires a comprehensive portal that provides a variety of services, including tenders, real estate and home / land assessment, licensing status, parking fines, online inquiries about access to housing and online research on factories located in Penang Development Corporation (PDC) Online inquiries for the purchase of industrial land, and emphasis on unpaid rental / purchase amounts for PDC residential units. Other services are also provided by the portal, including student dormitories and the Penang GIS browser.

Nonetheless, considering that the Penang ICT Council is focusing mostly on the development of the base of its knowledge workers base, the portal's application is yet to be sufficiently studied. In fact, at current time, the council is more focused on training its people in the new media application and in developing the e- learning centers. Furthermore, the council is currently making the effort to

fully computerize its intra- and inter-networking systems, while also training its government workers, especially the councillorship with the utilization of ICT as replacement to paperwork in committee discussions and decision-making.

Meanwhile, the councilors are provided with laptops and Internet connectivity, and they are to employ these facilities for communication regarding the issues that are of the municipality's concerns. Additionally, a website called Pintas was formed for these councilors. It provides the platform that allows the councilors to establish a forum for communication purposes. According to Ms. Lee Whom was then an SP, the use of the mechanism allows MPSP to accelerate the decision-making in a lot of the council's committee meetings, while also allowing a paperless environment and improving the image of the entire K-worker of the municipal authority. Nonetheless, she admitted the presence of human-related problems, albeit the innovativeness of the tools used. These problems include the slow adaptableness to the new media, training demands and ICT capabilities of the councilors, as well as the compatibility of each other's goals. She further noted the need for the core values of teamwork, communication, as well as human relations.

Once known as the tin miners' town, and now the capital of Perak, Ipoh is now called a Virtual City owing to its projects that involve the Internet and computer-mediated communication application in the automation of government services to the citizens. Ipoh comprises 3,420 households, three quarter of which comprises Chinese while the Malays and the Indians each amounts to 10%. Considering that many of residents in Ipoh are either senior or adult, specifically 70% adults and 5% retiree, the city has been referred asa retirement city. As a Virtual City, Ipoh has high Internet penetration rate of 85%. As reported by the Ipoh Municipality (MajlisBandaran Ipoh), in 2015, there were 37 Internet cafes-shops in the city.

In an attempt to follow suit in the country's aspiration to achieve a knowledge economy, Ipoh launched the Smart City Project which encompasses the provision of services to its population grounded upon the principles of e-Government as follows: information distribution, information communication, and transaction of services to citizens,businesses, as well as within government departments. With the application of ICT usage framework in the promotion of productivity, Ipoh City has employed the channel of ICT in the delivery of its services to the public for the purpose of easing the achievement of better environment in order that business and development could be promoted. At the same time, the productivity of its employees can be improved as well. Ipoh aspires to become the first "Smart City" in Malaysia. For the purpose, the city has created a sophisticated networking system to turn itself into a Virtual City.

### E. IDEMMOS Project for E-Government to Citizen (G2C)

Integrated Decision Making Monitoring System (IDEMMOS) entails a virtual platform that enables the Ipoh

citizens to express ideas, concerns, recommendation and visions for their city. In other words, the platform allows the citizens to be part of the city development and decisions, together withtheirlocalcouncil,the NGOs,privatesectorandotherrelatedagencies of government. It obtaining the involvement from the citizens, the platform employs Information Communication Technology (ICT). In turn, the system will improve the life quality of the citizens while assuring the success of Ipoh in becoming model of a sustainable city and society in the country, and globally as well.

The platform involves the use of online moderators that are responsible in easing the process of contribution and also in assuring the proper channeling of each contribution to the correct authorities or departments who would address the issue. Furthermore, through the organization of regular discussions in virtual forum, the moderators also will partake in the regular dialogues with the community. This way, they could identify the issues that the citizens and the city are facing. Also, using a bulletin and the routine receipt of feedback on issues faced by the citizens, the community will consistently be well-informed regarding all the developments in the city.

Grounded upon on the initiative of Local Agenda 21 (LA21), IDEMMOS functions as an interactive webpage with the purpose of allowing the community to be part of the development of an environmentally prolific, an economic, flexible and sustainable neighborhood for present and future generations of Ipoh citizens. However, during the implementation of this study, the I-Demmos platform was not formally launched. However, a group of "community volunteers" has already been included among the main sectors in Ipoh to help promote the project. These volunteers serve as the "heroes" of the community in the use of ICT for government communication. In addition, a developer of the ICT programs prepared the trial version of the website, and during project orientation, it was presented to the public.

### F. Malaysian Governance ICT and Context of Social

Among Malaysians, especially the people of Ipoh, the use of innovative media technologies, especially computers and the Internet, is not unusual. In fact, the high prevalence of the Internet to Ipoh was reported by 85%. However, there are those who are not smart for the Internet, and not only that, many citizens do not use the Internet to communicate with their local government, especially MBI. In fact, MBI was seen as ineffective.

### G. A Proper Partnership and Guidance with Malaysians

The city's overall development must not be neglected. Meanwhile, the elected officials are the ones with the power. Hence, these officials are obliged to use their power to administer and listen. It should be understood that the administrator plays the role of a trustee while the people are the stakeholders. In this regard, transparency is important because the community has the desire to find out what these administers are doing. Relevantly, sustainable development is achievable via partnership. In the context of Ipoh, its citizens do not appear to be reactive as they have no chance of perceiving more. Ipoh has preserved its provincial mentality. Still, the government needs to exploit it. Indeed, the people dictate the success of project.

### H. Good Local Governance

For a large part of the respondents, the establishment of proper local governance is essential. Consequently, good local government must have the capacity to provide its community with rudimentary, good and accessible facilities. Additionally, there must be cooperation among departments including the welfare department, the police force, and NGOs. With respect to the local government, it is important that it is attentive to the public voice. Also, considering the increase in the role of women in the society, it would be beneficial if the local government takes advantage of the situation. In the context of Ipoh, the disadvantaged women should be given the opportunity to express their plight.

## IV. CONCLUSION

The participation and participation of ICTs among citizens is often influenced by their attitudes and thinking about performance and service delivery to their local governments. In the case of Malaysia, its domestic case law includes a strong mini-model of the national government. In a way, it shows the finer details of politics and culture in a more separatist way. Based on the scrutiny of Ipoh and Penang, there is much to be explained by the use, access and awareness of ICTs in relation to their government. As such, this dynamic should have the capacity to determine its effects in the larger context of national government. As such, the deductions presented in this study are as follows:

The local government with less credibility results in slower involvement and response of citizens towards any project, ICT-led or otherwise. On the other hand, the more receptive and sensitive government authority generates more positive involvement. It is important to have a common power relationship between government and citizens. For the government, it is important that there is respect for the potential of citizen participation in addition to their observations. Moreover, in order to establish confidence in the Government's programs, it is necessary to reach consensus with the main sector of society. In addition, the services of government agency should be integrated.

For ICT-based projects, the focus should be on creating an area where citizens have a link to the virtual space generated. Importantly, the space should be citizen-driven, not government-driven. In order to assure success of an e-governance project, it is important to have Community Champions and Institutional Champions, considering that they have faith in, and demonstrate passion and commitment in assuring the project success. ICT training should be integrated from the most basic educational level of the community. As a final note; in order to acclimatize the citizens to the technology, it should be coordinated with the educational system.

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