

Information and Communication Technologies and Local Governance Trend – A Case Study of a Smart City in Malaysia

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Abstract — This paper intends to examine the influence of information and communication technologies on the local governance trend in one of the smart cities in Malaysia. Three trends of local governance namely development, strategic and promotional are selected. The research finds that these trends exist in the local authority of the smart city. The incorporation of ICT in the administration of the city enhanced these trends further.

Keywords- local governance; development; strategic; promotional; ICT; smart city; Malaysia

I. INTRODUCTION

The government administration in Malaysia generally can be divided into three levels – Federal Government, State Government and Local Government. Arguably, local government, or popularly known as the local authority is closer to the heart of the community because this administrator is directly responsible for the daily life of the community. In addition, they also play an important role of planning, coordinating, managing and controlling the development process at the lowest level of the country [1].

Due to its significance, it is important to understand and explore certain features or characteristics of the local authority that may give implications to the district community. The examples of characteristics that currently become an interest of the scholars include the trend of local governance. [2] for example, posit that some of the local governance trend that emerges in the recent years is developmental, strategic and promotional. Her study of these trends in two smart cities in Brisbane, Australian and Durban, South Africa finds that all these trends exist in both cities and improve the city governance.

Thus, it is interesting to examine whether these trends also emerge in local authorities in Malaysia. This study is important in order to explore and understand how government organizations generally and local authorities particularly construct and achieve better efficiency and effectiveness in achieving good governance.

II. LITERATURE REVIEW

Basically, local governance can be depicted as a process by which decisions taken at the local level by the local authority that reflects the need of local community. In contrast with the governance in a corporate sector, known as

corporate governance, that is benchmarked according to the various local and international code of corporate governance such as the Cadbury Report in the UK and Malaysian Code of Corporate Governance for public listed companies in Malaysia, there is no specified code or best practice developed for good governance of local authorities. In Malaysia, the framework that becomes the main reference for the local authorities is the Local Government Act 1976.

[3] And [4] define local governance as a process of providing directions to society, whereby the emphasis is on the relationships between the state and other role-players, including business. According to [5], local governance refers not only to the role and functions of a local government but also its manifold interactions between local government, local citizens and other groups. These interactions give rise to crucial aspects of sustainable or unsustainable development, such as service delivery, infrastructure development and spatial planning.

The United Nation Development Programme (UNDP), the arm of the most influential world organization, United Nation, gives a comprehensive concept and perspective of local governance, by which gave as follows:

“Local governance comprises of a set of institutions, mechanisms and processes, through which citizens and their groups can articulate their interests and needs, mediate their differences and exercise their rights and obligations at the local level. It requires partnership between local governmental institutions, civil society organizations and private sector for participatory, transparent, accountable and equitable service delivery and local development. It necessitates empowering local governments with authority and resources and building their capacity to function as participatory institutions that are responsive and accountable to the concerns and needs of all citizens.

[6]

Several definitions that are given above conclude that local governance is not only referred to as the local authority and its structure as one entity that serves the community, but it also includes all kinds of other relationships and its interactions with affected entities in the process of fulfilling its objectives. Affected entities here include but are not limited to the local community

(residents), business community (private sectors), non-governmental organizations (NGOs) and other stakeholders.

In fulfilling its objectives and discharging its accountability to the respective stakeholders above, the local authority currently is creating a trend or identical characteristics in response to the services required by them [2].

The first trend is the developmental trend. The local authority can use ICT to accelerate human and economic developments. Human development is achieved through better education and knowledge improvement that will create a knowledgeable community. In the case of economic development, ICT can create new working and business opportunities for the public to participate in the information technology industry [2]. ICT also can be used as a tool to strengthen business processing and transactions with the local authority.

The second trend is the strategic trend. ICT is the backbone of the city whereby it becomes a long-term strategic competitiveness of the city both nationally and globally. ICT has been used to manage the change and fluctuations more effectively, differentiate it from other cities and as a 'niche' to attract investors to come to the city. The local authorities nowadays are pressured to become more strategic in responding to the rapid changes in the economy and environment.

Finally, for the promotional trends, the local authority should provide a means by exploiting ICTs to promote a city, such as using a website that contains complete information about the city. Its content can be in terms of events, maps, visual materials, interactive feedback and enquiries. A good website that is used as a tool for promotion should have an element of atmospheric conditions. It should be able to provide opportunities for the visitors to experience an atmospheric or ambience feeling of the places without actually being there [7]. The website should stimulate interest to the visitors by creating an aura of excitement and the action of living in the environment of a city.

III. RESEARCH METHODOLOGY

This study used two types of data collection methods namely face-to-face interviews and content analysis as recommended by [8]. Some of the advantages of face-to-face interviews are rich data can be obtained, that are suitable for the objectives of the study to explore the issues of the local governance explained previously. Besides that, the interviewer can explain the questions to the interviewee. Thus, clear any doubts and increase the level of the accuracy of the data obtained. When necessary, new questions will be added spontaneously based on the answers. The Deputy Information System Director was selected for the face-to-face interview as he has a direct control and is fully responsible for the ICT operations in the local authority.

Content analysis was conducted on the website and annual report of the local authority and also their

unpublished documents such as plans, policies and guidelines. Most of the documents are qualitative in nature. Some of the advantages of the content analysis on this document are they are time savings, lower costs and more reliable.

The face-to-face interview with semi-structured technique was implemented first. This will give the advantage of exploring an in depth study on the central issues of interests of the study. Content analysis is conducted after the interview so that the data collected from the interview will be verified with the relevant documents. It was found that none of the information given by the interviewee contradicts with the information gathered from documents analyzed.

IV. FINDINGS AND DISCUSSION

The results of the analysis on the influence of ICT in local governance trends of the city are explained next.

A. Development

ICT offers unlimited potential as a tool to foster sustainable human and economic development. It can serve as a supportive element in broader institutional and socio-economic development efforts. Easy and cheaper access to information and infrastructure together with effective use of the resulting knowledge are the key to economic sustainability and improved social environment.

One of the important aspects of human development is education and knowledge improvement. The local authority of the smart city has taken significant steps to ensure all levels of community are able to benefit and are able to exploit the benefits offered by ICT. This is in line with the objective of the local authority to build an information-based community via continuous and consistent increasing information-based environment. For example, the local authority has provided facilities to enhance the knowledge and education of the public community. Known as ILMU or Integrated Library Management Utilities, this subsystem located under Neighborhood Learning Centre and operated under the Community Services system, provides interfacing information on education, health and other contents of the agencies. Currently there are two community libraries that are connected through ILMU; both located each in one section of the residents in the city. ILMU is also fully integrated under the City Management Centre and provides facilities such as a cyber room that is equipped with excellent computer facilities for the purpose of surfing the internet, playing CD and other ICT related applications.

This system also contains a library portal. Besides being linked to the main city portal, the library portal is also connected to the National Library and other State Libraries website throughout Malaysia.

The study evaluation however finds that this library portal does not provide so much information to enhance the knowledge of the community. It provides much information on the city itself in which some of the information can be

found and duplicated from the city's portal. This created a redundancy of similar information provided and a waste of development resources. The other features of this portal are generally similar to other library portals like web OPAC and online book searching. The study also finds that there are no outstanding features of a digital library like the electronic book, magazines, journals and resources, digital collections, links to knowledge-based websites such as to foreign newspaper, encyclopedia, discovery channel, economy, science and technology in this portal.

For literacy training, the local authority through its community development division has conducted a series of training and workshops for the committee members of the community association for every community section in the city. This training emphasize on how to use the facilities and application provided by the local authority through its community portal up to the maximum value that can benefit the local community. As the local authority does not have the capability to train all the residents due to a shortage of trainers, staff and resources, providing training to these committee members is a good strategy with a view that the committee members then will transfer the knowledge and skill learnt to its residents. In other words, the local authority used the "training the trainer" approach with the intention of saving costs and time on community training.

In addition, road shows are continuously conducted during the community carnival in the multipurpose hall to encourage residents' participation in the ICT facilities provided by the local authority. However, this effort has not received any warm welcome from the community. Not many residents attended the briefing and participated in the campaign activities.

Using ICT to stimulate the physical and economic developments is not crucial as compared to the human development as the vision of the city is not to become an industrial city but to be the Federal Government administration center. From the economic development perspective, ICT in this smart city is used much to help and support the business community to better serve the local community. In other words, ICT plays a more supportive role to facilitate commercial development rather than act as a leading role for development.

Using ICT to nurture the commercial activities mainly comes from the city's portal initiatives. Through the portal, the commercial link is designed specifically for the business community as a means of complementing the local authority current services by providing electronic services through its portal. This link provides e-procurement, bulletin board system, tender notices and quotations services. The e-procurement site facility enables business members to update their company profile, product as well as view requests for quotations online. The bulletin board system on the other hand is an electronic advertisement facility that allows any registered advertisers to submit their media files to be displayed at preferred locations in the city. Under the tender notice site, business members will find the most

recent information on the business opportunities of the local authority.

From the city e-services link, the business community may apply any city-related applications from the local authority through its online application. The applicant may find a location and vacant lot for business areas in the city. The list of vacant premises are provided together with the information on area (in square feet), layouts, image gallery and location maps to enable the users to view the location of business areas and make an initial and immediate assessment of potential business areas. If they are satisfied, the users can apply for the vacant premises online. The study however finds that for some of the vacant premises advertised, no information is given on the amount of rental per square feet and monthly rental. This is due to the fact that the local authority want to get a good value from the potential tenants.

If the business community wishes to start a new business or place a signage anywhere in the city, they will be able to find relevant licensing information such as laws and regulations, guidelines and rates of business license on this link. Similar to the above process, the users can also apply for the license online. In addition, the users can also track their application online. Starting 2007, the license application only takes 1-2 days to approve instead of 15 days through the manual process that had been practiced previously. The applicant can opt to receive the application status alert via sms or email. Finally, if successful, the users can pay their licensing fee online.

Under the billing and payment application, not only the business community but the local community can also obtain their city-related bills and make payments online through the portal. These bills include their rental bills, rating bills and quit rent. Through these facilities, the community can track the rating bill or multiple rating bills and choose to pay for the bills online.

The plan and building e-submission link is an electronic submission module that facilitates the submission of applications and plans that relate to planning and building electronically. With this service, the submission of the planning and building documentations can be done at the consultant's or applicants convenient time. At this portal, the consultant or applicant can perform a submission status enquiry on the planning and development control permission, search for any existing projects, register for new projects and update their profiles.

The community also can make reservations on various buildings and facilities such as the multipurpose hall and sport facilities via e-booking. Payment is required to use the sport building while for the multipurpose hall, it is free of charge for any social events but booking can only be made by individuals and associations or communities in the city only.

Finally, users can search and pay for any city council compound 24 hours a day, 7 days a week through the online compound payment facilities. The users can forward an

online enquiry through a compound number, identification card number, company registration number, or vehicle registration number.

B. Strategic

Clearly, the city is aspired to become an intelligent city based on the prosperity of its ICT. The concept of an “Intelligent Garden City” itself clearly spells out the importance and its aspirations to become a city that uses modern technology as part of its community daily life. It leads the creation of the information-based nation through an increasingly information-based environment. ICT as an outcome, in terms of the city’s development and community well being is evident in the long-term strategies of the city. In promoting itself as an intelligent garden city, it fosters the operation of the local authority to be a knowledge-based organization by using ICT as its strategic advantage. This aspiration is also clearly envisaged in its Vision 2015 – “*To be a well-managed, vibrant and prosperous federal administrative capital that fulfills the socio-economic, recreational and spiritual needs of its residents, workers and visitors*”

The ICT Master Plan states that as a modern municipality and innovative statutory authority, the local authority’s role is to address the development and management of the city through the improvement and development of pacing technologies to enable this federal government administrative center to be in advance of technology and applications. The objective of the Information System division of local authority is also explicitly stated whereby the division is responsible to manage, deploy, acquire and enhance the use of ICT as a strategic tool in its operation, management and development of all related activities carried out by the local authority apart from ensuring the development of quality systems and integrate quality principles into information and services.

However, the purpose of using ICT by the local authority to be more strategic in responding to rapid economic changes is less crucial and may be less relevant. The local authority strictly controls economic and commercial activities and these activities exist just merely to serve the local community and visitors. There is no factory or any type of manufacturing industry allowed here. In other words, the local authority is not in a situation to use ICT as a strategic tool to compete with other cities to attract investors and industry players to build any industries in the city.

The more relevant purpose of the local authority is in managing change perhaps in terms of managing social change. A good example for such change is the self-accustomed service. The public will be glad if they can carry out transactions related to financial matters with the government in a hassle-free condition. This will require the local government to have higher levels of processing capabilities, as well as payment gateways and security implementation. In this situation, complete transactions

could be done online without having to go to the office of the local authority.

The local authority of the city has successfully absorbed this change by using ICT strategically to bring about a whole new operation and delivery of services. Any type of transactions, either financial or non-financial and queries or complaints can be performed anytime at the convenience of the community. This transaction is provided through its city portal.

The local authority also uses ICT application as a strategic tool for its decision making process. Two main systems that have become the backbone of the local authority operations are SumberPutra System and City Centre Management System. The SumberPutra System was established purposely to help the local authority and other related government agencies to implement their task efficiently and effectively through a well integrated system. The City Centre Management System on the other hand was created specifically to administer and control the city operation.

Examples of other subsystem under SumberPutra system include Planning Permission System, Development Plan Expert System, Building Control System, Land Management System, Billing and Collection System, Property Valuation System – PRISMA, Enterprise Wide System and Database Administration Services and System Administration Services. The Planning Permission System for example is an expert system that is used to process planning approval applications and to chart related plans for the Geographical Information Systems (GIS) requirement. This system is capable of automatically checking plans, highlighting the non-compliance areas, generate reports and update the results to the database for easy viewing. Thus, it will help the work of the local authority in terms of a faster decision making process with minimum human errors.

C. Promotions

The local authority should use any tools and technology to promote its local administration for the purpose of not only attracting investors but also tourists from outside the area to visit the city. These groups of people will bring revenue to the city, such investors to open their business premises while from tourists, in terms of money spent during their visit in the city.

Since its development in 1996, the city has received a large number of visitors from both local and overseas. The number of visitors keep on increasing since 2001 largely comprising of a high number of foreign tourists (Table II). Many parts of the city have completed construction works, And added more attractive places to visit in the city. In addition to that, the establishment of the Tourism Action Council in 2007 is solely to plan, coordinate, develop, control and market the tourism products in the city effectively with the co-operation of the local authority and Tourism Ministry, the Federal Ministry which is responsible for tourism activities at the country level and

also acting as a contributing factor. The foreign tourists that visit the city are mainly from China, Korea, ASEAN countries, the US and Europe

TABLE II. NUMBER OF VISITORS THAT VISITED THE CITY FROM 2001 TO 2008

Year	Local	%	Foreign	%	Total
2001	353,896	75.4	115,257	24.6	469,153
2002	304,756	63.8	173,242	36.2	477,998
2003	273,573	34.9	509,164	65.1	782,737
2004	101,262	24.5%	312,696	75.5%	413,958
2005	Not available		172,929	-	-
2006			144,609	-	-
2007			161,060	-	-
2008			264,396	-	-

Source: Annual Report of the Local Authority from 2001 to 2008.

Besides actively participating in overseas tourism promotions, promoting road shows with the Tourism Malaysia Board, organizing attractive local and international events, the city’s website is considered one of the most effective promotional tool to market this city. It portrays the city’s outstanding characteristics and image of intelligent garden city for marketing and promotion purposes. Obviously, the intention is mostly for tourism i.e. to attract both local and foreign visitors.

The website also gives much information about the city, targeted mostly to the visitors and people who are not familiar with the city. The visitors will get a wealth of information complete with pictures of the interesting places in the city. This site also covers the information on spectacular designs of the government buildings, promenades, public amenities, boulevards and squares, bridge, parks, landscape, eateries and shopping complex. The visitors are also able to get more information regarding accommodation apart from the boating and recreational activities available. This will help the visitors plan and spend their valuable time to visit the city.

This portal also provides a transportation guide on the public transport in the city including its operation, routes, departure locations and contact persons. A clear guide to outside visitors on how to go to the city through road or rail is also given. Interestingly, the visitors can also view the complete map of rail services from the beginning of the route until it reaches the city. The road map is also available with recommendations for roads that can be used to reach the city and its interesting places.

There is an interactive map that helps people to locate places and gather information about the places they need to know. Using the Geographical Information System (GIS) technology, the map is designed to be interactive and to ease the users. This technology enable the user to create his or her own map by choosing to show or hide any groups of items such as public transport, public service, commercial and government buildings, parks and places of interests to

meet the self-required maps. These guides, recommendations and interactive map facilities given through the portal certainly bring added value for users.

V. CONCLUSIONS

This study intended to examine the influence of ICT on developmental, strategic and promotional trends of a smart city in Malaysia. The study finds that these entire three current local governance trends exist in the smart city of Malaysia, and the ICT enhanced these trends further.

In this city, ICT seems to be more useful in human development such as in knowledge improvement as compared to economic development due to the city’s aspiration to be an administrative center. It plays a supportive role to sustain commercial developments that exist to serve the local community better. Thus, the strategic advantages of ICT is manipulated in responding to social changes rather than economic changes of the community. There is no intention to use ICT as a strategic weapon to attract giant industry players to commence their business here.

As for promotions, the city uniqueness is successfully marketed to the outside world through the attractive website that gives a lot of information to attract the attention of potential tourists and enhance its network with excellent support and collaboration in exchanging, distributing and sharing of information with its various stakeholders

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