ERP System Implementation Readiness: The Case of Indonesia Government Organizations

by Efa Yonnedi

Submission date: 20-Dec-2019 10:43AM (UTC+0800)
Submission ID: 1237280607
File name: 2_ERP_System.pdf (255.04K)
Word count: 7313
Character count: 40990

Australian Journal of Sustainable Business and Society
Volume 01 No. 01 March 2015

ERP SYSTEM IMPLEMENTATION READINESS: THE CASE OF GOVERNMENT ORGANIZATIONS IN INDONESIA

Asniati Bahari
Efa Yonnedi
Amsal Djunid
Andalas University, Indonesia

ABSTRACT

This paper examines the level of government organization readiness to implement ERP systems. This study also identifies the importance of e-government functions needed by users to serve the communities in the city. The data was collected from information system users in City X, West Sumatera, Indonesia from March to April 2014. Based on the perception of the staff, City X is ready to implement ERP systems especially at strategic level. All the functions listed in the questionnaire are important to be implemented such as Informational uses, Transactional uses, and Operational uses. In addition, there is no significant barrier found to implement the integrated systems in the city. Findings of this research can serve as a guideline for government officers to improve or reassess their performance management system in line with ERP-systems framework. The findings also contribute to the knowledge and application of Accounting Information Systems and Management Information Systems.

JEL Classifications: M000, M480
Keywords: Enterprise Resource Planning Systems; E-governance; Accounting Information Systems; and Management Information Systems.
Corresponding Author's Email Address: asniati65@yahoo.com

INTRODUCTION

Governments around the world wish to provide service to their citizens as good as possible. Because of that, they provide their citizens with a digitized government by allowing them to access information, communicate with government agencies, and participate in transactions digitally. e-Government refers to the process of connecting citizens digitally to their government in order that they might access information and services offered by government agencies (Lau et al., 2008).There are four relationships in the e-government interactive processes: government-to-government, government-to-business, government-to-employees, and government-to-citizens (Balutis, 2001a and 2001b). The development of World Wide Web has drawn public attention towards government with new development such as government to business (G2B) and government to Citizen (G2C) (Davidson et al., 2005). Traditionally, government sector was perceived as bureaucracy, slow administrative process and unwilling to change. However, there has been a major reform taken places in the government organizations across the world which is then known as new public management, post-bureaucratic era, managerialism or reinventing government. E-Government is part of that movement. Therefore, e-government in its essence is about transforming relations with citizens, businesses, and other arms of government with the objective to enhance the overall efficiency and effectiveness of service delivery in the public sector (Hai, 2007; World Bank, 2012). E-government also allows the public service to be more efficient since the service should not be conducted by face-to-face communication (Rokhman, 2011). The government sector sought to transform to e-government in order to become more efficient and provide better services to citizen by implementing ERP (Raymond et al., 2005).

The objective of this research paper is to find out the level of a local government readiness to implement Enterprise Resource Planning (ERP) in Indonesia. The research was conducted in City X, West Sumatera, Indonesia. Implementation readiness was measured in term of strategic level, tactical level, and operational level. The research also tried to find the perceived importance of e-government functions in term of informational, transactional and operational usage of the information systems. E-government is more to do with enablement and facilitation. E-government facilitates and enables citizen relationships with the government as it takes the process of governance closer to the people. After all, governments are meant to improve the quality of

life of the citizens. Accordingly, e-government enables and facilitates this specific objective through the delivery of services to the citizens and residents at their personal convenience, allowing secure personal transactions with the government with a choice of channels and time, thereby bringing them closer to the government authorities (Al-Khouri, 2013).

Indonesian vision of 2025 is to become advanced knowledge-based society. Recognizing the benefits of e-government, the Republic of Indonesian government has issued several policies related to e-government (Harijadi, 2004). The government issued a policy on e-government implementation called the Presidential Instruction Number 3 in 2003 which outlines details about: (a) development of a reliable and trustworthy services and affordable by the public, (b) restructuring of management systems and work processes of central and regional governments holistically, (c) optimal utilization of information technology, (d) participation improvement of the business sectors and development of ICT industries, (e) development of human resources in the government offices and improving e-literacy of communities, (f) Development of e-government by systematic approach with realistic and measurable stages.

The Presidential Decree was completed by the Guideline for E-Government Development issued by the Department of Communication and Informatics in 2003. This guideline regulated all government agencies including local governments, regarding: (a) development of government portal infrastructures, (b) management of government electronic documents, (c) planning development of e-government, (d) ICT training for supporting e-government implementation, (e) implementation of the Local Government Websites. In 2004, the Department of Communication and Informatics also issued six guidelines that contain: (a) quality standards and service coverage, as well e-services application development, (b) institutionalization, authority, information, and business involvement in e-government development, (c) good governance development and change management, (d) e-government project implementation and budgeting, (e) competency standards of e-government managers, (f) blueprint of e-government application for central and local governments. To complement the policy regarding e-government, which has been issued earlier, in 2006 Indonesian government, issued a policy relating to the use of ICT, which indirectly strengthen policies in the development of e-government. The policy is the establishment of the Council of National Information and Communication Technology (Detiknas, 2010). The Presidential Decree Number 20/2006 established the council. It was mandated to formulate public policy and strategic direction of national development, through the use of ICT (Detiknas, 2010).

Various policies above showed that the government of Indonesia has a political will for successful implementation of e-government in Indonesia, even to the level of local government. Moreover, with implementation of the Act Number 11 in 2008 regarding Information and Electronic Transactions (ITE) the government will support public service transactions through e-government. However, Indonesia is still in an early stage in term of e-government readiness. It can be proved by E-Government Readiness Rank. According to the United Nation, Indonesia is still in low rank among other countries in Southeast Asia. In Global Rank of E-Government Readiness, Indonesia's position is 109 (United Nations, 2005). Among Southeast Asian countries, Indonesia's position is in the seventh rank, lower than Brunei and Vietnam, and only one rank higher than Cambodia. Based on research conducted by Rokhman (2011), there are 751 Indonesia Internet users who participated in the survey, where 93.9 percent of them have intention to adopt e-government. This figure indicated that very strong majority of Internet users have high expectation to get benefit from public services delivery thorough e-government.

City X is a city located in West Sumatera, Indonesia. It has around 128,000 citizens with 4,242 employees working in 37 units called "*SKPD*" or *Satuan Kerja Perangkat Daerah*. It has 5 District (called *Kecamatan*), 8 Departments (called *Bagian*), 10 Offices (called *Kantor*), 4 Bodies (called *Badan*) and 12 Service Jobs (called *Dinas*). Considering this is an on-going and voluntary practice, Indonesian Governments are still in debate about issue of e-government implementation. Thus, the subject of ERP system practices Indonesia to support e-government deserves a systematic study particularly in a city of Indonesia. The proposed research questions include: (i) what is the level of ERP implementation readiness of City X; (ii) what categories and levels of e-government functions are needed by employees of the city to serve the communities; and (iii) what are the barriers that the city faced in implementing ERP?

E-government is about changing how governments work, share information, and deliver services to external and internal clients. It harnesses information and communications technology to transform relationships with citizens and businesses, and between arms of government. Benefits can include reduced corruption, increased transparency, greater convenience, higher revenues, and lower costs (Bhatnagar and Deane, 2004). There are various reasons why there is increased impetus among countries in assessing their e-readiness status. Countries are striving to become inclusive global information societies where all persons without distinction are empowered to create, receive, share and utilise information for their economic, social, cultural and political development (Consulting and Audit Canada, 2004). Countries with high level of e-readiness can use the Internet to improve services and create new opportunities and have a competitive edge over those whose levels of e-readiness are low. For business enterprises ICTs are expected to enhance their operations and management, save time, improve quality, reduce manpower requirements, increase cost effectiveness, provide better presentations, share information, improve general skills of employees, and facilitate access to trade information (Maksoud and Youseff, 2003).

E-readiness assessments are also useful in understanding and identifying the most key and relevant ICT based development opportunities. For example, to put ICT to effective use, a country must be 'e-ready' in terms of infrastructure, the accessibility of ICT to the population at large and the effect of the legal and regulatory framework on ICT use, benchmarking progress, collaborations, determining vision, strategy, and priorities (Docktor, 2002). An e-readiness assessment should lead to the development of a strategy and the preparation of an action plan that would address the opportunities and constraints identified in order to further the objectives of a country in the area of ICTs. Furthermore, e-readiness assessment enables governments to set, measure and achieve realistic goals for an information society, information-based economy, or e-government. ERP system implementation readiness is positively associated with the ERP implementation Success (Bahari et al. 2013).

It is important to develop and conduct an e-readiness assessment so that the results can be leveraged to catalyze action, improve global competitiveness, and use limited resources wisely. In addition, a well-conceived assessment will map a country's regional and global position, improve competitive strengths and promote those areas where a country has an advantage over others. Understanding other countries' e-readiness strengths and weaknesses can also help a country to leapfrog technologies and policy decisions to position itself ahead of its neighbours. Moreover, e-readiness assessments can help stakeholders make difficult decisions on how to use scarce resources and how to turn existing strengths into new revenues. E-readiness assessments can also reveal which bottlenecks are worth the investment of time and money to be removed, and which can be worked around. Using a globally recognised e-readiness assessment methodology can be helpful in securing the necessary funding to develop an e-strategy and implement e-programs in City X. This research focused on finding out the level of City X readiness in implementing ERP system in supporting e-government initiative as mandated by The Presidential Decree Number 20/2006. It was mandated to all local and city government to formulate public policy and strategic direction of national development, through the use of ICT. The study will also try to identify categories of e-government functions needed by employees of the City X to serve the communities. In addition, we also examined the barriers exist in implementing ERP system in City X.

LITERATURE REVIEW

ERP system is a business management system that comprises integrated sets of comprehensive software and when successfully implemented, it can manage and integrate all the business functions within an organization (Shehab et al., 2004). This integration is accomplished through a database shared by all the application programs. Unlike MRP II system, ERP systems work in real-time, meaning that the exact status of everything is always available. Further, many of these systems are global. Since they can be deployed at sites around the world, they can work in multiple languages and currencies. The term ERP was coined by the Gartner Group and has become widely used in recent years (Hall, 2007). The system has played significant roles in Information Technology (IT) for several decades. While there is wide acceptance of ERP in developed countries such as USA, Canada, UK and Australia, developing countries lag far behind. At present, North America occupies 66 percent of the ERP market, Europe takes 22 percent, while the whole of Asia represents only 9 percent. However, due to economic growth, developing countries in Asia and Latin America are becoming major targets of large ERP vendors (Huang &P alvia, 2001). ERP systems include a set of modules for business applications and tools for financial and cost accounting, sales and distribution, materials management, human resource, production planning and computer integrated manufacturing, supply chain, and customer information (Shehab et al., 2004). All functional departments that are involved in operations or production are integrated into one system. Furthermore, an ERP system can be used as a tool to help improve the performance level of a supply chain network by helping to reduce cycle times (Adam & Sammon, 2004; Hsu & Chen, 2004). Hence, ERP

system can aid in the control of many business activities like sales, delivery, billing, production, inventory management and human resource management systems.

The benefits of ERP are claimed to include: significant improvements in quality and efficiency of customer service, production and distribution; costs reductions; improved decision-making; and enterprise agility (Kakouris & Polychronopoulos, 2005). ERP is an industry term for the broad set of activities supported by multi-module application software that helps a manufacturer or a service provider manages the important parts of its business. In addition, research findings shed new light on the productivity paradox associated with ERP systems and suggest that ERP adoption helps firms gain a competitive advantage over non-adopters (Hunton et al., 2003). ERP system is an important factor which enables a company to compete effectively in the global market (Rikhardson & Kraemmergaard, 2006).

Level of ERP System Adoption.

According to Tchokogué et al. (2005), there are some considerations inherent in an ERP implementation that are prerequisites to effective organizational transformation required by a system implementation. They are strategic, tactic and operational considerations. At the *strategic level*, top managers establish a clear vision of the role of the ERP project in the business model, along with strategic priorities. The managers should create a feeling of urgency, and precisely determine the scope and scale of the project. Top management then commit substantial resources by allocating sufficient human and financial resources and persevere in backing a structured and disciplined approach to implementation until the completion of the project.

At the tactical level, according to the author, managers should define the project as the capability of the organization to re-conceptualize its business processes. Consideration should be taken of the technological potential while preserving the integrity of value added processes that make up the organization's expertise. Processes were then redesigned in keeping with manager's vision and the target identified. At the operational level, appropriation was made by mastering human issues. The Change Leadership and Knowledge Transfer teams play a crucial role in this process. The change management strategy is mobilized by decentralizing change sessions within the business units where information can circulate between individuals.

In regards of using internet in government organizations, Koh and Prybutok (2003) proposed a simple, intuitive and yet comprehensive framework to organize an ever-increasing array of features. A Three-Ring Model captures all Internet applications in three categories of Internet use. The categories are informational use, transactional use and operational use. Informational use is in which organizations disseminate information to educate, entertain, influence, or reach their citizens. Transactional use is where they support a coordinated sequence of user and system activities to provide service and transfer value. Operational use is when an agency provides a new mechanism for conducting business operations by integrating IS, human intellect, and other resources into synergistic networks.

ERP System Functions

At a municipal level, Deshazo et al. (2001) identified 51 different e-government features and examined the extent to which small city governments utilize the Internet. They organized these features into 12 categories: online payments, registration, permits, customer service, communication, license, images, audio/video, documents, applications, procurement, and miscellaneous. Balutis (2001a) is representative of work that classifies the development of e-government into four phases. They include, in sequential order, information dissemination, forms-only, end-to-end electronic transactions, and transforming government. Information dissemination is the least-developed and basic phase, describing a stage in which information is provided online. In the forms-only phase, users can download forms electronically. End-to-end electronic transactions involve having the users begin their transaction digitally (such as filing taxes) and ultimately ending their transaction in the same way (e.g., having tax return money deposited electronically into their bank account); the transaction is hence characterized as being entirely executed digitally.

The last phase is the idealized goal of e-government, in which the government provides all services and information online. In this way, e-government acts as a stand-in for traditional forms of government services—which will no longer be necessary—as users can simply log onto the Internet to meet their needs. An afternoon-long trip to the DMV might, for instance, be replaced by a 10 min Internet session to pay for automobile registration renewals, title requests and the like. Balutis also describes this phase as a ''seamless e-government,'' where users will not have to understand the structures of government to be able to navigate through digital government websites. In addition to that, Howard (2001) divides e-government progress into

three phases. The first is to publish, in which e-government has only a basic electronic presence with limited published information. The second phase is to interact, where citizens can correspond with government via e-mail and chat rooms. The last phase is to transact, where the governments provide services to citizens to participate in transactions via digital government.

This last phase, according to Howard, involves the ''maximized service potential'' of e-government (Howard, 2001). On a wider scale, the World Bank (2001) has conducted a study of the e-governments in various countries worldwide. The World Bank attempts to identify two major factors in e-government, namely, communication and linkage type. Communication is divided into four categories, information publishing and dissemination, unidirectional (''contact us'') capabilities, bi-directional (''inquiry'') capabilities, and transaction capability. In the first category, users can access information and publications online. The second category encompasses communication capabilities on a multilateral level, with users contacting government workers and receiving responses digitally. The third category is characterized as users asking for certain publications such as public registry records, birth certificates, etc. and specific services, such as evaluation of property values, digitally. The last phase also consists of transactions such as paying taxes, purchasing land, etc. In this typology, the linkage types consist of two categories: vertical linkage between government levels (such as local, state and federal), and horizontal linkage between inter-level government agencies. The World Bank views vertical and horizontal linkage as crucial to the success and development of e-government (World Bank, 2001).

Classifying e-government applications using a concise framework allows e-government planners and administrators to take a broader view of an increasing and changing array of internet applications. The model serves as a tool that allows e-government managers to recognize and focus on a set of critical issues specific to each category of e-government functions and to consider the critical issues that should be addressed to reduce its cost and provide information and services more effectively and efficiently (Ferguson, 2005).

Barriers in Implementing ERP Systems

Through statistics and an analysis of questionnaires and interviews from Chinese respondents with 45 valid questionnaires, Yusuf et al. (2006), noted difficulties in ERP implementation in China. In order of importance, they are: (i) lack of top management support; (ii) significant cost and time recurred; (iii) cultural differences; (iv) technical complexity; (v) lack of professional personnel; and (vi) inner resistance. Inner resistance is the least serious in Chinese context. Some difficulties are affected by enterprise's ownership and size. According to them, to ensure that ERP implementation does not fail, there should be: a good ERP implementation team; suitable Business Process Reengineering (BPR); appropriate training; and a reliable Outsourcing-Application Service Provider.

In addition, Wu and Wang (2005) identify multidimensional constructs to evaluate key-user's satisfaction with ERP system (i.e. ERP product, contractor service, and knowledge and involvement). The three factors are interwoven, and one must not focus exclusively on any single factor in assessing overall ERP success. The results enhance our understanding of the nature and dimensionality of the key-user satisfaction of ERP system. The research further provides some implications for implementing and managing ERP systems. ERP vendors, consultants and IS managers should pay attention not only to improve the quality of ERP products, but also to improve users knowledge and involvement and to select suitable consultants and suppliers. The reason why ERP implementations fail can be placed into ten categories (Umble et al., 2003):

i. Strategic goals are not clearly defined;
ii. Top management is not committed to the system;
iii. Implementation project management is poor;
iv. The organization is not committed to change;
v. A great implementation team is not selected;
vi. Inadequate education and training results in users that are unable to satisfactorily run the system;
vii. Data accuracy is not ensured;
viii. Performance measures are not adopted to ensure that organization changes;
ix. Multi-site issues are not properly resolved; and
x. Technical difficulties can lead to implementation failures.

By conducting a survey of 48 IS professionals that had had experience in using ERP systems in Australia, Hawking and Stein (2004) noted some barriers to ERP implementation success. They are lack of discipline, lack of change management, inadequate training, poor reporting procedures, inadequate process reengineering, misplaced benefits ownership and inadequate internal staff. In addition, they have poor prioritization of resources, poor software functionality, inadequate ongoing support, poor business performance and

underperforming project teams. Hence, in order to be successful in implementing the ERP system, a company should avoid such barriers.

RESEARCH METHODOLOGY

This research was designed to use mixed methods research. Mixed methods research is the type of research in which a researcher combines elements of qualitative and quantitative research approaches in one study. There are some advantages that can be gained if a study applies the mixed methods research. At the design stage, qualitative data can assist the quantitative component of study by helping instrument development. At the data collection stage, quantitative data can play a role in providing base-line information and helping to avoid "elite bias" and qualitative data can help in facilitating in data collection process. During data analysis, qualitative data can play an important role by interpreting, clarifying, describing, and validating quantitative results. However, due to time constraint, the research was conducted through quantitative approach only.

Population and Sampling

This research was conducted in City X. City X is a city located in West Sumatera, Indonesia. It involved around 4,242 employees as the research population. It has 5 District (*called Kecamatan*), 8 Departments (*called Bagian*), 10 Offices (*called Kantor*), 4 Bodies (*called Badan*) and 12 Service Jobs (*called Dinas*). We used stratified sampling method to choose the respondents. However, the respondent was limited only to employees that use computer to conduct their job. There were 400 questionnaires distributed, however, only 96 respondents returned it to researchers, but 17 of the questionnaires returned were not complete. So, data from only 79 questionnaires were included in the analysis.

Data Collection Technique

Data were collected from employees through questionnaires. The questionnaire was divided into 4 major parts. Part one asked about E-governance readiness in term of strategic level, system level, and data level. The second part of the questionnaire was about the employee perceptions of different e-government functions. It included functions related to informational usage, transactional usage and operational usage. The third part asked about barriers experienced by the employees in the city in implementing ERP system such as lack of top management support; significant cost and time recurred; cultural differences; technical complexity; lack of professional personnel; and inner resistance. Part four addresses the profile and descriptive statistics of the respondents such as their age, educational level, tenure, role, and department. All items in part one, two and three were constructed using a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Instruments used in part one and two in this research was adopted from Koh et al. (2008) studies.

Prior to data analysis, the construct validity and reliability of each scale used in the research instrument were examined. Hair et al. (1998) state that validity is the extent to which the concept one wishes to measure is actually being measured by a particular scale or index and is concerned with how well the concept is defined by the measure(s). To assess the construct validity, the examination of factor analysis for each variable was performed. Factor analysis was done to validate the scale by demonstrating that its constituent items loaded on the same factor. Based on the analysis, it can be concluded that the items used in this research are valid because the KMO value are higher than .7. Table 1 shows the result of factor analysis conducted.

TABLE 1. TEST OF VALIDITY RESULTS

No.		Number of items	KMO
1.	**ERP implementation Readiness**	14	.869
2.	E-Government Functions Needed:		
	• Informational Uses	9	.760
	• Transactional Uses	7	.811
	• Public Services Uses	16	.879
3.	Barriers in Implementing ERP system	12	.880

Sample Profile of the Study

The descriptive statistics analysis of the sample was done and the results of the analyses are summarized in Table 2.

TABLE 2. SUMMARY OF THE SAMPLE PROFILE OF THE STUDY

No	Profile	Frequency	Percentage
1	Level of position:		
	• Operational Level	26	33%
	• Tactical Level	47	59%
	• Strategic Level	6	8%
2	Number of years worked for the company		
	• Less than 5 years	29	37%
	• 5 – 10 years	30	38%
	• More than 10 years	20	25%
3	Educational Level:		
	• Senior High School	10	13%
	• Diploma	18	23%
	• Degree/Professional Training	42	53%
	• Master Degree	9	11%
4	Gender		
	• Male	30	38%
	• Female	49	62%

Based on questionnaires returned, 26 (33%) respondents are in operational level (*called golongan II*), 47 (59%) respondents are in tactical level (*called golongan III*) and 6 (8%) of respondents are in strategic level (*called golongan IV*). In term of length of service, there are 29 (37%) of respondents have been working for less than 5 years, 30 (38%) of them have been working between 5 to 10 years and 20 (25%) of them have been working for more than 10 years. Education of the respondents shows that 10 (13%) of respondents in City X have a senior high school graduated, 18 (23%) graduated from Diploma, 42 (53%) hold Degree certificate and 9 (11%) hold a Master degree 30 (38%) of respondents are male and 49 (62%) are female.

RESEARCH FINDINGS

Level of ERP implementation Readiness in City X

The following is the result of staff perception about ERP implementation readiness in City X. Implementation readiness is measured in term of readiness at strategic level, system level and data level. City X is ready at all levels to implement ERP systems. The highest readiness level is at strategic level, followed by system level and data level. As shown in Table 3, at strategic level, City X is ready in general, especially at strategic level. It seems that City X is ready because the city has strategic plans that govern all Internet activities, clearly stated objectives of using the Internet and the internet is an integral part of the city business plans. At the system level, the city is ready because the city carefully coordinates development of all Internet applications; pays close attention to ensuring compatibility among Internet applications; has a centralized function that oversees the development of all. Internet applications: and the city's Internet applications are designed and developed to work with legacy systems. The city is also ready at the data level. This situation happens because all city's Internet applications can share data with other Internet applications; can share data with non-Internet applications; and share standardized data.

TABLE 3. ERP IMPLEMENTATION READINESS IN CITY X

No.	ERP Implementation Readiness in:	Minimum	Maximum	Mean	Std. Deviation
A.1	**Strategic level**				
1.1	The city has strategic plans that governs all Internet activities	1.00	5.00	3.7595	.98989
1.2	The city has clearly stated objectives of using the Internet	1.00	5.00	3.8861	.84713
1.3	The Internet is an integral part of the city business plans	2.00	5.00	4.0759	.72981
1.4	The city's Internet strategies are deliberately aligned with its strategic plans	2.00	5.00	3.7595	.85057
1.5	Overall	2.00	5.00	3.8481	.89283
A.2	**System level**				
2.1	The city carefully coordinates development of all Internet applications	2.00	5.00	3.7848	.74543
2.2	The city pays close attention to ensuring compatibility among Internet applications	2.00	5.00	3.8101	.76921
2.3	The city has a centralized function that oversees the development of all Internet applications	2.00	5.00	3.7215	.74999
2.4	The city's Internet applications are designed and developed to work with legacy systems	1.00	5.00	3.6456	.93422
2.5	Overall	2.00	5.00	3.7848	.88681
A.3	**Data level**				
3.1	All city's Internet applications can share data with other Internet applications	1.00	5.00	3.4937	.88973
3.2	All city's Internet applications can share data with non-Internet applications	2.00	5.00	3.3291	.85817
3.3	All city's Internet applications share standardized data	2.00	5.00	3.5316	.85987
3.4	Overall	2.00	5.00	3.6203	.85190

Integrated E-government Functions in City X

Integrated systems needed tested in City X is related to informational, transactional and public services. The respondents were asked about their perception about the function needed in City X. At informational uses, we tested the staff opinions about functions needed in City X relate to online publishing in term of city information, GIS data, city budget, employee manuals, online city tour and minutes of meetings. The respondents were also tested about their opinion about broadcasting in term of video broadcast of meetings, audio broadcast of meetings and live traffic cams. In average respondents agree that those information technology are important in City X. At the transaction uses, the respondents were asked about online procurement for calls for proposal and bidder applications. They were also asked about online payments for utility payments, collection fees, collection fines, tax collection and payments to service providers. At the operational uses, the respondents were asked about online customer services and operational support for employees. For online customer services, the functions needed are request for service, permit application and renewal, voter registration, request for records, property registration, survey and polls, and forum for discussions. At the operational support, the staff need e-mail access, online calendar, scheduling meeting online, online document management and video conferencing. Other applications needed are online job application, and emergency management.

TABLE 4. INTEGRATED E-GOVERNMENT FUNCTIONS NEEDED IN CITY X

INF	INFORMATIONAL USES	Minimum	Maximum	Mean	Std. Deviation
	Informational uses				
INF1.1	Online publishing	2.00	5.00	4.2785	.63924
INF1.2	City information	3.00	5.00	4.2405	.58211
INF1.3	GIS data	3.00	5.00	4.2152	.63389
INF1.4	City budget	1.00	5.00	4.1139	.73358
INF1.5	Employee manuals	2.00	5.00	4.2025	.64807
INF1.6	Online tour of city	1.00	5.00	3.7089	.96279
	Broadcasting				
INF2.1	Video broadcast of meetings	1.00	5.00	3.4304	.99593
INF2.2	Audio broadcast of meetings	1.00	5.00	3.4304	.98298
INF2.3	Live traffic cams	1.00	5.00	3.7975	.89700
TR	**TRANSACTIONAL USES**				
TR1	**Online procurement**				
TR.1.1	Calls for bids or proposals	2.00	5.00	4.1139	.76774
TR1.2	Bidder applications	2.00	5.00	4.0886	.73711
	Online payments				
TR2.1	Utility payments	2.00	5.00	4.0127	.72490
TR2.2	Collection of fees	1.00	5.00	3.9367	.85247
TR2.3	Collection of fines	1.00	5.00	3.9241	.87372
TR2.4	Tax collection	2.00	5.00	4.0380	.79167
TR2.5	Payments to service providers	2.00	5.00	4.0127	.75945
PUB	**PUBLIC SERVICES USE:**				
	Online customer service				
PUB1.1	Requests for service	3.00	5.00	4.1139	.64026
PUB1.2	Permit application and renewal	1.00	5.00	4.1139	.69775
PUB1.3	License application and renewal	2.00	5.00	4.0506	.71430
PUB1.4	Voter registration	2.00	5.00	4.0759	.72981
PUB1.5	Requests for records	1.00	5.00	3.9620	.88351
PUB1.6	Property registration	2.00	5.00	3.8861	.84713
PUB1.7	Surveys & polls	2.00	5.00	3.9367	.85247
PUB1.8	Forums & discussions	2.00	5.00	3.8861	.89137
	Operational support for employees				
PUB2.1	E-mail access	2.00	5.00	4.1772	.69355
PUB2.2	Online calendar	2.00	5.00	3.9114	.85019
PUB2.3	Scheduling meetings online	2.00	5.00	3.9241	.79698
PUB2.4	Online document management	2.00	5.00	3.9747	.80024
PUB2.5	Video conferencing	2.00	5.00	3.7089	.87928
	Miscellaneous				
PUB3.1	Online job applications	2.00	5.00	3.9872	.74718
PUB3.2	Emergency management	1.00	5.00	3.8101	.90690
PUB3.3	Overall operational uses	3.00	5.00	4.1013	.61174

Barriers in Implementing ERP system in City X

Based on the survey, it seems that all the functions are needed in City X. It is supported by the average score shown in Table 4. The average scores for each of the functions are more than 3. It means that the staff support the function to be implemented in City X. The highest score found is for online publishing information (4.2785), City Information (4.2405), GIS Data (4.2152), employee manuals (4.2025), and email access (4.1772).

TABLE 5. BARRIERS IN IMPLEMENTING ERP SYSTEM IN CITY X

No.		Minimum	Maximum	Mean	Std. Deviation
1	Strategic goals are not clearly defined	1.00	5.00	2.5823	1.06948
2	Top management is not committed to the system	1.00	5.00	2.5063	1.04848
3	Implementation project management is poor	1.00	4.00	2.4051	.91314
4	The organization is not committed to change	1.00	5.00	2.3544	1.07463
5	A great implementation team is not selected	1.00	5.00	2.5570	.93022
6	Inadequate education and training results in users that are unable to satisfactorily run the system	1.00	5.00	2.9873	1.05604
7	Data accuracy is not ensured	1.00	4.00	2.5570	1.00953
8	Performance measures are not adopted to ensure that organization changes	1.00	5.00	2.8608	1.03446
9	Multi-site issues are not properly resolved	1.00	4.00	2.6835	.87037
10	Technical difficulties lead to implementation failures	1.00	5.00	2.8228	.87354
11	No Project Control & Monitoring	1.00	5.00	2.8354	1.06735
12	No ongoing communication	1.00	5.00	2.7468	1.06781

In order to find out the barriers in implementing integrated systems in City X, t 12 questions were asked to the staff. It is found out that the staff agree that no barriers exist in implementing ERP in City X because all the barrier score averages are less than 3. The score for strategic goals are not clearly defined is 2.5823, followed by Top management is not committed to the system (2.5063); implementation project management is poor (2.4051); The organization is not committed to change (2.3544); A great implementation team is not selected (2.5570); Inadequate education and training results in users that are unable to satisfactorily run the system (2.9873); Data accuracy is not ensured (2.5570); Performance measures are not adopted to ensure that organization changes (2.8608); Multi-site issues are not properly resolved (2.6835); Technical difficulties lead to implementation failures (2.8228); No Project Control & Monitoring (2.8354); and No ongoing communication (2.7468).

Based on the result, it means that in City X , the score for strategic goals are clearly defined; top management is committed to the system; implementation project management is good; the organization is committed to change; the great implementation team is selected; adequate education and training results in users that are able to satisfactorily run the system; data accuracy is ensured; performance measures are adopted to ensure that organization changes; multi-site issues are properly resolved; technical expertise lead to implementation successful; there is Project Control & Monitoring; and there is ongoing communication.

CONCLUSIONS AND POLICY RECOMMENDATIONS

ERP system has grabbed a growing concern by organizations to adapt and respond towards complexity and rapid changes in business environment. On the other side, government organization, traditionally was perceived as bureaucracy, slow administrative process and unwilling to change. However, government sector sought to transform to an e-government in order to become more efficient and provide better services to citizen by implementing ERP. This research was conducted to find out the level of the government organization readiness to implement ERP systems. This study also identified the importance of e-government functions needed by users to serve the communities in the city. Based on the perception of the staff, City X is ready to implement ERP systems especially at strategic level. All the functions listed in the questionnaire are important to be implemented. In addition, there is no significant barrier found to implement the integrated systems in the city. Findings of this research can serve as a guideline for government officers to improve or reassess their performance management system in line with ERP-systems frameworks. The findings also contribute to the knowledge and application of Accounting Information Systems and Management Information Systems in the context of public sector organizations.

In the light of research findings, the local government needs not just make a world wide web (website) that contains information and announcements, but more than that the use of ERP for the purpose of the transaction and the driving force of local government services provision. For example, the local government can provide utilities payment, tax collection and license processes using e-Government. The ultimate challenge is how the

local government prepares ERP at operational and data level, including how to integrate information system across levels and units of local government.

.

REFERENCES

Adam, F. and Sammon, D. 2004. *The Enterprise Resource Planning Decade: Lessons Learned and Issues for the Future*. London. Idea Group Publishing.

Al-Khouri, A., M. 2013. e-Government in Arab Countries: A 6-Staged Roadmap to Develop the Public Sector, Journal of Management and Strategy Vol. 4, No. 1. PP?

Bahari, A and Baharuddin K., 2013, Enterprise Resource Planning (ERP) System Implementation Readiness : Institution Of Higher Learning In Malaysia, International Journal Of Multidisciplinary Thought, Vol. 3, no. 4, 2013, pg. 157-166.

Balutis, A. (2001a). E-government 2001a, Part I: Understanding the challenge and evolving strategies. The public manager, Spring (p. 33).

Balutis, A. (2001b). E-government 2001b, Part II: Evolving strategies for action. The public manager, SpringSpring (p. 41).

Barnes, S.J. and Vigden, R.T. 2006. Data triangulation and web quality metrics: a case study ine-government, Information & Management 43, 2006, pp. 767–777.

Baum, C. and Maio, A.D. (2000) Gartner's four phases of e-government model. E-government Strategies, State & Local (Online: http://old.gartner.com/public/static/hotc/00094235.html), 2000.

Bhatnagar, SDeane, A.Bhatnagar, S. Deane, A. 2004. Building Blocks of e-Government: Lessons from Developing Countries, https://openknowledge.worldbank.org/handle/10986/11261.

Consulting and Audit Canada. (2004). Transformation for the digital age: The development of Botswana's National ICT policy. Preliminary report for consultancy for the formation of a national information and communication technology policy technical bid (pp. 1–81). Toronto: Government of Canada.

Davidson, R.M., Wagner, C. and Ma, C.K.L. 2005. From Government to Government: A Transition Model. Information Technology & People, 18 (3). 280 – 299.

Detiknas (2010) "Official Website of the Council of National Information and Communication Technology", http://www.detiknas.org/index.php/home/page/2/1/Tentang-Kami/

Docktor, R. (2002). E-readiness in 2002: Defining and achieving your e-fitness goals Available at: http://www.ip3.org/pub/docktor.html.

Ferguson, Martin (2005) "Local e-Government in the United Kingdom", in H. Druke (ed.), *Local Electronic Geovernment; a Comparative Study,* Routledge Taylor & Francis Group, London, pp. 157.

Hall, J. 2007. *Accounting Information Systems*, 5th edition. Ciicinnatti, Ohio. Thomson, South Western.

Harijadi, Djoko A. (2004) "Developing E-Government, the Case of Indonesia", *E-Government Workshop Apectel29*. <http:// *unpan1.un.org/intradoc/groups/public/.../UNPAN017960.pdf*>

Hawking, P. and Stein, A. 2004. Revisiting ERP Systems: Benefit Realisation. *Proceedings of the 37th Hawaii International Conference on System Sciences- 2004.*

Howard, M. 2001. E-government across the globe: How will ''e'' change government? Government finance review (p. 1).

Hsu, L. and Chen, M. 2004. Impacts of ERP Systems on the Integrated-Interaction Performance of Manufacturing and Marketing, *Industrial Management and Data Systems* 104(1):42- 55

Huang, Z. and Palvi,a P. 2001. ERP Implementation Issues in Advanced and Developing Countries, *Business Process Management* 7(3):276-284.

Kakouris, A.P. and Polychronopoulios, G. 2005. *Enterprise Resource Planning (ERP) system: An Effective Tool for Production Management, Management Research News* 28(6):66-78.

Koh, C.E. and Prybutok V.R. 2003. The three ring model and development of an instrument

Lau, T.Y., Aboulhoson, Linc, M. C., and Atkinc and Atkinc, D.J. 2008. Adoption of e-government in three Latin American countries: Argentina, Brazil and Mexico, Telecommunications Policy 32: 88–100.

Maksoud, S. S., & Youseff, M. A. A. (2003). Information and communication technology for small and medium enterprises in Egypt (pp. 1–15). Cairo: SME Development Unit-Ministry of Foreign Trade.

R. Deshazo, C. Kaylor, D.V. Eck, (2001). Gauging e-government: A report on implementing services among small American cities, Foundations of Electronic Government in America's Cities: A Multi-Disciplinary Workshop, Chicago, IL, 2001.

Raymond, L. Uwizeyemungu, S. and Bergeron, F. 2005. Airport Adoption for E-Government: An Analysis of Motivations. E-Government Workshop '08 (eGOV05). 1-10.

Rikhardson, P. and Kraemmergaard, P. 2006. Identifying the Impacts of Enterprise System Implementation and Use: Examples from Denmark, *International Journal of Accounting Information Systems,* 7(1); 36-49.

Rokhman, A, A. 2011. E-Government Adoption in Developing Countries; the Case of Indonesia, Volume 2 No.5, MAY 2011 ISSN 2079-8407 *Journal of Emerging Trends in Computing and Information Sciences.*

Shehab, E.M., Sharp, M.W., Supramaniam, L. and Spedding, T.A. 2004. Enterprise Resource Planning: An Integrative Review, *Business Process Management* 10(4):359-386.

Stephen M. Mutulaa, Pieter van Brakelb, (2006). An evaluation of e-readiness assessment tools with respect to information access: Towards an integrated information rich tool, International Journal of Information Management 26: 26: (2006) 212–223.

Tchokogou, A., Bareil, C., and Duguay, C.R. 2005. Key Lessons from the Implementation of an ERP at Pratt & Whitney Canada, *International Journal of Production Economics* 95:151- 163.

Umble, E.J., Haft, R.R. and Umble, M.M. 2003. Enterprise Resource Planning: Implementation Procedures and Critical Success Factors, *European Journal of Operational Research* 146:241-257.

United Nations (2005) "Global E-Government Readiness Report 2005: from E-Government to E-Inclusion". http://unpan1.un.org/intradoc/groups/public/documents/un/unpan021888.pdf

United Nations (2008) "UN E-Government Survey 2008: From E-Government to Connected Governance.http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN028607.pdf

United Nations (2010) "UN E-Government Survey 2010: Leveraging E-Government at a Time of Financial and Economic Crisis, http://unpan1.un.org/intradoc/groups/public/.../UNPAN038853.pdf

World Bank. (2001). World Bank report on E-governments in the public sector of Latin American countries (2001). /http://www.worldbank.org/publicsector/egov/LA_EGovSites.docS.

Wu, J.H. and Wang, Y.M. 2005. Measuring ERP success: The Key Users' Viewpoint of the ERP to Produce a Viable IS in the Organization, *Computers in Human Behaviour*, Elsevier.

Yusuf, Y., Gunasekaran, A. and Wu, C. 2006. Implementation of Enterprise Resource Planning in China, *Technovation*, 26(12):1324-1336.

ERP System Implementation Readiness: The Case of Indonesia Government Organizations

ORIGINALITY REPORT

15%	15%	15%	4%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

4%

★ Submitted to American Intercontinental University Online

Student Paper

Exclude quotes	On	Exclude matches	< 2%
Exclude bibliography	On		