Potential Users and Critical Success Factors of e-Government Services: the Case of Indonesia

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Abstract

Implementation of e-government in Indonesia began in 2003 when the Government of Indonesia released Presidential Instruction No3/2003 regarding the National Policy and Strategy Development of E-Government. However, until then the public services that provided through e-government are still very limited in quantity as well as quality. This paper presents the results of study that was conducted by online on Indonesian Internet users and the manager of the e-government sites of Indonesia. Quantitative and qualitative approaches were used in this study. This research found that most Internet users have intention to use e-government. They are Internet users who have the characteristics in majority consist of: female, have age in twenty one to thirty years old, have bachelor education degree, and they have been using the Internet for a period of seven to nine years. According to the citizens' perspective, the most critical factors to the intention to use e-government are the relative advantages of e-government and the compatibility of e-government with the ability and life style of users. From to the government's perspective, the most critical factors for successful implementation of e-government are the e-leadership and the opportunity to develop employees' capacity in the technical training on e-government.

Keyword: E-Government, public service, e-leadership

Introduction

The implementation of e-government for government organization in Indonesia is very important due to the potential of e-government as a tool for supporting good governance (Afriani & Wahid, 2009; Ciborra & Navarra, 2005; Meitya, 2004). By e-government, government operation can be achieved more efficient, effective, transparent, democratic and accountable. The public are expected to have more involvement in the process of government policy, from formulation to policy evaluation. E-Government also gives some benefits for the public. Public services could be delivered by online, real-time, seven days a week, twenty hours a day and permeable boundaries.

Although Indonesian Government implemented an e-government policy since 2003 through the Presidential Decree (INPRES) No 3/2003, however performance of e-government services is urgent to be improved to better service quality. This fact was proved by the ranking of Indonesian on global e-government readiness by the United Nations (2005;2008;2010), (Obi, 2010) and previous research (Rokhman, 2008).

The low performance of Indonesian e-government is very unexpected by the public since the number of Internet users in Indonesia is increasing significantly. In 2010 the number of Internet

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users in Indonesia are 45 millions (Setiawan, 2010). This huge number is very potential as users for Indonesian e-government services. Based on these facts, this paper has aim to analyze who are the potential users of Indonesian e-government services and what are the critical success factors of the e-government implementation.

What is e-Government?

The concept of e-government appeared in line with the rapid developing of Information and Communication Technology (ICT). In the simple term, e-government can be defined as government operation through the ICT. Some authors added e-government definition with purposes of e-government for instance to support good governance in the government organization. Jeffry (2008) noted e-government refer to the continuous innovation in the delivery of services, citizen participation, and governance through the transformation of external and internal relationships by the use of information technology, especially the Internet. Maio (2001) stated e-government as the process of transforming public administration's internal and external relations through network-based activities, information and communication technologies, in order to: (1) optimize service delivery, (2) increase citizen and business participation, and (3) enhance government capability. Vassilakis & Lepouras (2007) noted e-government can be defined as the use of information and communication technologies in government for at least three purposes: (1) providing public services, (2) improving managerial effectiveness, and (3) promoting democracy.

The Stage of E-Government Development

Development of e-government can be analyzed into four stages. The first stage of e-government development is characterized by the existence of a presence on the Internet. During this first phase, the Internet sites are rather static in nature and are only meant to provide general information. The second stage of e-government development is characterized by Internet sites that provide search capabilities, host forms to download, and provide links to other relevant sites. In most instances, this stage enables the public to access critical information online, but requires a visit to a government office in order to complete the task. The third stage of e-government development is characterized by empowering the public to conduct and complete entire tasks online. The focus of this stage is to build self-service applications for the public to access online. The fourth stage of e-government development is characterized by redefining the delivery of governmental information and services. This phase relies on robust customer relationship management (CRM) tools, wireless access devices and new methods of alternative service delivery capabilities that reshape relationships between citizens, businesses, employees and governments (Ouckland County Michigan, 2010)

Research Method

This study used quantitative and qualitative approaches. An online survey was published at http://egov-survey.map.unsoed.ac.id during October 2010. Research participants are Indonesian internet users who voluntarily participated in this survey. A survey invitation was published on Facebook. According to the Inside Facebook [67] Indonesia is a country with the third largest users of Facebook in the world. In May 2010 it had 22,4 million users. According to Alexa [68] the most popular website in Indonesia at present is Facebook. Quantitative data was analyzed using

descriptive statistics. Questionnaire consist of items such as gender, education level, age, duration of Internet use and the critical factors that influences the intention of use e-government. The critical factors were adopted from the characteristic of innovation as a part of innovation diffusion theory which its used in some similar studies (Carter & Belanger, 2005; Lu, Liu, & Liau, 2005; Lu, Deng, & Wang, 2010; Nor & Pearson, 2007; Olatokun & Igbinedion, 2009; Park, 2006). The critical factors consist of relative advantage, image, compatibility, and ease of use. 'Relative advantage' was defined as the degree to which an innovation is perceived as better than the idea it supersedes. 'Image' is the degree the innovation enhances one's reputation with peers. 'Compatibility' is the degree of perceived consistency with one's values, experiences, and needs. 'Ease of use' is the perceived degree of difficulty those who engage with e-government have (Carter & Belanger, 2005) (Rogers, 1995; Van Slyke, Comunale, & Belanger, 2002).

Qualitative approach was used in this study. Data was collected through online interview by e-mail and instant messenger application to several e-government operators and managers. Questions consist of critical factors for the success e-government implementation. Qualitative data were analysed by flow model (MIles & Huberman, 1994).

Quantitative findings

This study successfully collected data from a sample of 800 internet users, which consisted of 556 (69.5 percent) male and 244 (30.5 percent) female. A majority of respondents had Bachelor of Education (BEd) qualification (59.4 percent), and were aged between 21-30 years (41.9 percent). They had used the Internet for an average of 7-9 years (37.5 percent). The demographic data for respondents is presented below in Table 1.

Table 1. Demographic data of respondents

Characteristics	Frequency	Percent
Gender		
Male	556	69.5
Female	244	30.5
Education		
High School	92	11.4
Diploma	34	4.3
Bachelor	475	59.4
Master	169	21.1
PhD	30	3.8
Age		
<=20	58	7.3
21-30	335	41.9
31-40	257	32.1
41-50	129	16.1
51-60	18	2.3
>60	3	0.4
Duration of internet use		
1-3	118	14.8
4-6	294	36.8
7-9	300	37.5
10-12	88	11.0
N = 800		

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Gender and e-Government Adoption

Table 2. Gender and Intention to Use E-Government

Gender	Use (percent)	No (percent)
Male	93.88	6.12
Female	94.26	5.74

Majority of the respondents have intention to the use of e-government. However, female have higher intention to use e-government (94.26 percent) although this variation was not significant.

Table 3. Education level and Intention to Use E-Government

Education Level	Use (percent)	No (percent)
High School	83.7	16.3
Diploma	88.24	11.76
Bachelor	95.16	4.84
Master	96.45	3.55
PhD	100	0

There are significant differences between education level in the case of the intention to use e-government services. The higher education level, the higher intention to use e-government. Table 3 demonstrated the respondents who have education level in High School have the smallest percentage (83.7) but for the highest of education level (PhD), they have the biggest percentage (100).

Table 4. Age and Intention to Use E-Government

Age	Use	No
<=20	94.83	5.17
21-30	93.13	6.87
31-40	95.72	4.28
41-50	93.8	6.2
51-60	88.89	11.11
>60	66.67	33.33

Table 4 explained the user of e-government services was dominated by the young users who have age no more than 50 years old. The elder of Internet users (more than 50 years old) have the lower intention to use e-government services..

Table 5. Duration of Use Internet and Intention to Use E-Government

Year	Use	No
1 to 3	88.14	11.86
4 to 6	94.9	5.1
7 o 9	95.33	4.67
10 to 12	94.32	5.68

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Table 5 demonstrated the laggard (respondent who have used the Internet in one to three years) are tend to have the lower of the intention to use of e-government services (88.14 percent). The respondent who used the Internet for more than three years have higher intention to use e-government (more than 94 percent).

Critical Success Factors of E-Government Services (Citizens' Perspective)

The figure below presented relative advantage factor have highest portion as determinant factor of the intention to use e-government services (39.18 percent) was followed by compatibility factor (38.14 percent). Ease of use and image factors only be stated by minority of the respondents. These findings are consistent with previous studies by Carter & Belanger (2005), Jungwoo (2004), Parthasarathy & Bhattacherjee (1998), Schaupp & Carter (2005) and Taylor & Todd, 1995).

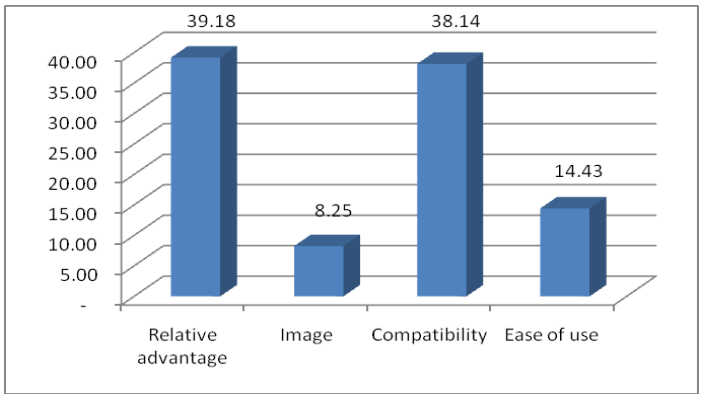

Figure 1. Critical Success Factors of E-Government Services

Qualitative Findings

Based on the informant responses, it is able to summarize that almost all informants stated that e-government is a new culture for Indonesian nation, which appeared due to the rapid development of ICT. It is a challenge and opportunity for the Indonesian government to deliver public services more efficient, transparent, and accountable.

The informants stated that their leaders are not using internet to communicate with the public as the main priority for services delivery. Moreover, their leaders are not familiar yet to the Internet. If they have an e-mail address, it was mostly made by their staff and has never been opened by the leaders everyday.

Other findings from the e-government manager and operator, the success of e-government implementation is significantly determined by human resources in the government agencies. The informants said there is limited human resources who have good skill in ICT and e-government management. The mechanism for selection of e-government operators is an urgent policy. This policy is necessary to be followed by technical training on the e-government operation therefore there is no dependency to ICT specialist from internal organization as well as external vendor. This training should not conducted in rigid schedule and venue but it is able to be implemented in the workplace without any disturbance to daily staff's activities.

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E-Leadership

Indonesian society is a paternalistic society (Warnecke & DeRuyter, 2009; Rajab, 2009). Based on this characteristic, any social change in such society usually was began by the leader. Consequently the changing in government organization, in the case of e-government implementation, also must be started from bureaucracy leader. In this case, the bureaucracy leader need a capability to apply electronic leadership (e-leadership). These statements were proven in the success of e-government of Kota Surabaya Government. In 2007 e-government of Kota Surabaya received an E-Government Award from Warta Ekonomi. According to the manager, e-leadership was admitted as success key of such city in applying their e-government services (Sonhaji, 2008).

E-Leadership is a leadership combining between the concept existing in leadership and technology development. E-Leadership is trying to utilize technology development in influencing subordinate in accordance with the values referred by the leader concerned (Budvytyte, 2006).

Vision2lead defined e-leadership means a balancing many roles and carrying them out via communications technologies (Vision2Lead, 2010). Fernandez (2007) listed several tools that shall be mastered by a leader who would like to apply e-leadership, in the following table.

Table 6. Tools for e-Leadership

Category	Primary Function	Examples
Communication tools	End-user asynchronous tools that facilitate the sharing of information by sending messages, files, data, documents, etc	E-mail Internet forums Discussion boards Wikis Weblogs RSS Social networking Web services Social bookmarking
Conferencing Tools	End-user real-time tools that facilitate interactive communication	Online chat and instant messaging Flash Meeting Video Online whiteboards or data conferencing Conferencing
Management Tools	Facilitate and manage group activities	Meeting scheduling tools and team calendars Mind map Application/desktop sharing Contact management/address books Task lists File and documents sharing Awareness utilities Workflow management support Intranet Extranet

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E-Government Training

Since the e-government is a new technology, it needs to be prepared for its operators. It was supported by the E-Government Institute (2005) who stated that information technology is a new field. The government offices generally have lack of qualified human resources on ICT specialist. The ICT specialists are commonly could be owned only by business/industry sectors. This condition is one of the barriers to the implementation of e-government. The solution of this problem is by recruiting new employees as well as arrangement of the e-government training based on workplace learning.

Workplace learning refers to learning that occurs during the activities and experiences of work. Fenwick (2005) offers that workplace learning is to imply human change or growth that occurs primarily in activities and context of work. It can include some type of structured formal class or presentation where the learning outcomes are geared to accomplish organizational goals. Workplace learning also include learning activities such as on-the job training, mentoring, or coaching for performance. In variability, workplace learning describes the social interaction between people, people in groups, and groups across boundaries (Rowden, 2007). Workplace learning (also workplace training) learning or training undertaken in the workplace, usually on the job, including on-the-job training under normal operational conditions, and on-site training, which is conducted away from the work process (e.g. in a training room) (Australian Government, 2010).

Model of the Success of E-Government Implementation

Based on the findings from quantitative (citizens' perspective) and qualitative approach (government's perspective) this study developed a model for the success of e-government services implementation. From the citizens' perspective, the critical factors for using e-government services are relative advantage and compatibility factor. On the government's perspective, the success of e-government implementation are the existing of e-leadership and the availability of e-government training for member of government organizations. Infrastructure availability is in the middle between citizen and government as a prerequisite for relating both of them. The model can be figured as follow.

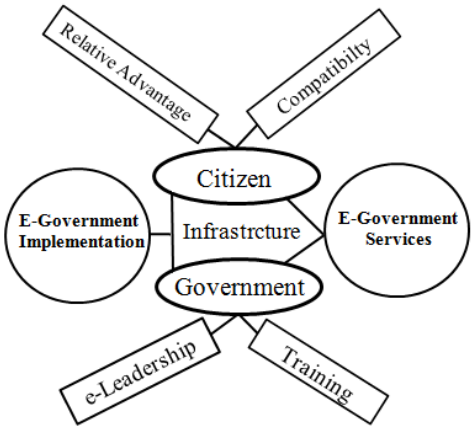

Figure 2. Model for the Success of E-Government Services Implementation

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Conclusion

This study found majority of the Indonesian Internet users have intention to use e-government services due to the advantage of e-government for the citizens and the compatibility of e-government with the user capability and life-style. Significant increase of the number of Internet users in is a challenge for Indonesian government to develop better e-government services. The Indonesian government should implement a policy that support the existing of e-leadership in the bureaucracy, provide budget availability for the workplace training on e-government and ICT infrastructures.

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