How IT Support a Government Organization’s Agility to Respond Citizen’s Changing Needs?: Literature Review

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Abstract. Now the use of information technology has changed citizen’s styles and lifestyle. Public services that are practical, very fast and automated is the need for majority of Indonesian society. Coupled with various requests for public services needed by the community with a variety of specific case studies. This certainly has implications for the government in presenting services that suitable with the various needs of the citizen. On the other hand, in increasing the effectiveness and efficiency of public services, the government has shifted its business processes by increasing the adoption of e-government. However, the fact is the IT investments that can reach tens or hundreds millions rupiah every year can be said to be almost non-existent by governments where most of the operational processes are carried out electronically. To overcome this problem, the government should not simply shift the business process with IT adoption on a large scale. The government needs to adopt a model of organizational agility to support government IT agility. In anticipating this, several previous studies have contributed to developing an organizational agility model with IT support. However, the model developed is still not enough to achieve organizational agility. Therefore, in this study will synthesize some previous theories relating to organizational agility using IT support. The result of this study are an analysis of the synthesis of the agility process models of government organizations with IT support.

Keywords: Organization’s agility, IT agility, Changing needs

1. Introduction
Over the last 20 years, IT research has experienced a shift in seeing the problems that need to be resolved related to the use of IT. More over IT paradoxical theory has brought the fact that IT investment has not been certain to improve organizational performance [1]. This phenomenon is in line with the implementation of E-Government in Indonesia as a developing country. One of the e-government practices that has not yet be perceived its benefits is E-KTP. Aside from being an identity, the use of E-KTP is also expected to be able to prevent multiple and falsification of KTP. But as reported on jawapos.com, the practice of buying and selling of Population and Family Card Number is still widespread in social media [2]. It can be concluded that the development of E-KTP still cannot provide a solution to the problem of population data. The phenomenon of the IT paradox in Indonesia does not stop at the performance of e-government implementation but also can be seen in the role of IT investment. ICT research data 2018 notes that the 2017 IT budget will increase by 10% to 80% and it is predicted that in 2019 IT investment can reach Rp. 339 trillion [3]. This
Concludes that digitalization has become inherent in increasing the efficiency of operational processes of a public service. However, when viewed from the 2018 UN survey data, Indonesia ranks 107th EDGI. Indonesia ranks 7th in ASEAN after Vietnam [4]. This ranking shows that the implementation of E-Government in Indonesia is below the Southeast Asian regional average. The results of this EGDI ranking should further encourage the government that in digitizing a system it is not enough just to invest IT alone.

Government organizations need to adopt organizational agility with IT support. Organizational agility is the ability of organizations to feel and follow up on changes in the organization's environment both internally and externally [5]. With the agility of the organization, it is expected that the public can feel the effectiveness and efficiency in using public services so that the community can move quickly to solve other related needs [6]. In producing organizational agility with IT support, several previous studies have carried a model that can be adapted by adopters. However, the model that was adopted did not adequately meet the needs of the adopters to produce agility in organizations with the use of IT [7]. Previous research has not considered how organizations need to be conditioned to achieve organizational agility. Therefore this research will carry the organizational agility model using IT support that facilitates the conditions needed so that government organizations can achieve organizational agility. The results of this study are the analysis of the synthesis of process models from the analysis of literature models in previous studies.

2. Theoretical Analysis

The theoretical analysis discussed in this study is when, how and why IT is needed to encourage the agility of government organizations. Previous studies have provided strong reasons that the conditions required in each model are not always sufficient in producing the agility of the organization itself. As in the study of Tallon & Pinsonneault which states that organizational agility with IT support required IT alignment intervened by IT flexibility [8]. However, Tallon & Pinsonneault explicitly noted that IT flexibility does not always occur even when IT alignment strategies have been well designed. Thus, there is a discontinuity in the model promoted by Tallon & Pinsonneault so that the model is not sufficiently reflected to produce organizational agility with IT support. This situation illustrates that the conditions needed are not sufficient and still require a causal relationship to other factors in producing organizational agility with IT support.

In overcoming this problem, Mohr (1982) states that the situation of the model case can be handled easily by formulating it into the form of a "process model" [9]. The process model is proven to satisfy the adopters of the model because it provides a detailed explanation related to the conditions needed or "recipe" by involving a combination of factors needed in a certain time sequence. The process model is different from the variance model. Model variance shows the strengths of the model in achieving the objectives to be achieved. It can be concluded that the variance model accommodates empirical situations that do not consider the conditions needed to achieve these empirical situations.

2.1. Tallon & Pinsonneault – “The Link Between Strategic IT Alignment and Organizational Agility: Insight from a Mediation Model”

The Tallon et al model emphasizes IT alignment strategies that intervene in IT flexibility in creating organizational agility with IT support [8]. This model explains that IT alignment strategies can inhibit organizational agility if there is no element of IT flexibility in the organization. The use of IT alignment strategy factors is to ensure that the IT used supports business processes so that it can help business executives to achieve the organization's business goals. Thus, business executives with IT departments are able to indicate and feel the opportunities or threats to the organization's environment both internally and externally in meeting the changing needs of the community. Not only focus on aligning between IT goals and business goals, IT departments must also be able to increase IT flexibility. IT flexibility or agility in dealing with business changes can reduce the time the business environment adapts. This becomes a crucial aspect for producing agility in an organization.
2.2. Overby, Bharadwaj & Sambamurthy – “Creating Agile Organizations through IT: Relationship between IT, digital option and enterprise agility”

The Overby et.al model uses a digital option approach in producing organizational agility with IT support [10]. Digital option is the ability of IT to dig as wide and as deep as possible data to produce knowledge that can be used as a solution option in decision making. The results of the digital option process are knowledge reach and process reach. Knowledge reach is a business information resource that has value for business executives to measure awareness of changes in the business environment that occur both from the internal and external environment of the organization. While the process reach is valuable information that can be used as a basis for determining actions in winning competition over the changes in organizational environment that occur. It can be concluded that to form organizational agility with IT support, IT is used not only as operational tools but is expected to be intelligent tools. The more effective and efficient knowledge management process done, the easier it is for the organization to feel a change in the business environment and follow up on the right actions to win business competition.

2.3. Degroote & Marx – “Supply Chain Agility and Firm performance”

The Degroote et.all model uses an IT agility approach to produce organizational agility with IT support [11]. IT plays an important role in improving the quality of information. The quality of information fulfilled is described by the adequacy, accuracy, accessibility and timeliness of information needed. Quality information can improve knowledge management about the conditions of the entire business environment. This is a critical aspect that is needed by business executives to determine the direction of organizational movement in winning competitive advantage.

2.4. Sambamurthy, Bharadwaj & Grover – “Shaping Agility Through Digital Option: Reconceptualizing The role of information technology”

The Sambamurthy et.al model states that winning competitive advantage is obtained by the presence of digital options and agility firms in an organization [12]. Agility in digitizing data will shape the agility of the business operations flow both related to suppliers, partners and customers. In this case it is necessary to measure and control a clear tool that in an organization has adopted aspects of the agility, both in the agility of IT, digital options and organizational agility. According to Sambamurthy et. All digital options will not occur if the IT used by the organization does not have the competence to win a competitive advantage. It takes competent IT to enrich knowledge based both in terms of suppliers, partners and customers. This will make it easier for business executives to innovate and improvise according to business goals in a short amount of time. That way organizational agility can be produced easily by IT support.

2.5. Lowry & Wilson – “Creating agile organizations through IT: The Influence of Internal IT Service Quality and IT Agility”

Lowry et.al's model uses the Internal IT service perception and IT service quality approaches to shape IT agility [13]. This model explains that harmony of perception among HR in the IT department is needed to create quality IT services. The vision of the IT department, the policy results from evaluation and leadership style can affect the work environment and work culture of employees such as commitment and work motivation. Employees' attitudes and beliefs towards superiors' views will improve the quality of IT services provided. In this case it can be underlined that HR is an important key IT asset because it will determine the alignment between IT use, IT goals and the organization's business goals. Quality IT services is what will encourage the creation of IT agility.

2.6. Summary

Various models presented by previous researchers have different beliefs in creating the agility of government organizations with IT support. Although there are similarities in meaning in
several perspectives, each model has its own advantages in including important elements to shape the agility of the government organization itself.

Table 1: The resume of the previous model

| Criteria | Fallon & Rose (1999) | Overbye, Shannon & Sambamurthy | De George & Morey | Sambamurthy, Shannon & Grover | Lawrey & Wilson |
|----------|----------------------|---------------------------------|------------------|-------------------------------|----------------|
| **Logical Form** | IT alignment strategy cannot create IT agility, or the organizational agility will not be formed either. | IT cannot create digital agility, or the organizational agility will not be formed either. | IT cannot create digital agility, or the organizational agility will not be formed either. | IT cannot create digital agility, or the organizational agility will not be formed either. | IT cannot create digital agility, organizational agility cannot be formed either. |
| **Assumption** | If organizational agility is formed, the environment will support the achievement of organizational performance. | If there is an element of digital agility, the use of IT organizational agility will be formed. | IT agility and organizational agility can be achieved, but it will improve organizational performance. | If digital agility and organizational agility can be achieved, it will win a competitive advantage. | The quality of IT services will influence the formation of IT agility. |
| **Role of Time** | Sequential process between IT alignment strategy, organizational agility and organizational performance. | Sequential process between IT, digital options and organizational agility. | Sequential process between IT, digital options and organizational agility. | Sequential process between IT, digital options and organizational agility. | The formation of organizational agility requires digital agility. |

3. Theoretical Synthesis

Analysis of previous research models shows there is a discontinuity or "lack of inevitability" in adopting an organizational agility model with IT support. Therefore it is necessary to trace back related results needed to arrive at the success of a particular situation. From the summary of previous research models, there are 2 important points in producing the agility of government organizations with IT support, namely IT investment strategies and strategies for improving the process of digital options.

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Figure 1: Process Model of Government Organization's Agility

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4. Summary and Implication for Research

The agility of government organizations be able to increases sensitivity and responds to changes that occur in the organizational environment. Changes in the organization's environment can occur in citizen's need, government policies, procurement departments or from internal organizational stakeholders. Facing these unplanned changes, the organization must support the organization's agility with IT support. Government organizations must be able to provide asymmetric information and interdependent shared resources. Therefore, using an organizational agility process model with IT support is the key to success that needs to be adopted.

The organizational agility process model must be able to accommodate processes from beginning to end. To achieve organizational agility there are two important points to consider namely how organizations achieve the quality of IT investment and how organizations are able to maximize IT in the digital options process. The output of this process is knowledge management about the movement of the organization's environment.

In creating organizational agility with IT support, surely every process model also has a different point of view with another situation organization. Then it is expected that in future studies the research can complement models that are in accordance with certain organizational conditions. Furthermore, to ensure that the model created can help generate the agility of government organizations, it is expected that further research can request a model with appropriate methods. It is hoped that further research can complement the discussion regarding organizational agility with IT support.

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