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Impacts of IT Governance in Expanding Market Shares of Online Stores

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ABSTRACT

IT governance maturity values are a crucial facet used for recognition of contributions of service quality of IT operation when assuring perpetuity of expanding market shares of online stores. This can become a benchmark used to further evaluate existing gaps in enhancing service quality of IT operation. In this study, the whole respondents referred to 99 business managers of middle-up online stores. A purposive sampling technique was in implementation. Instruments used represented lists of questions based on processes in which each was divided based on levels. Each level was then divided based on Likert Scales. This study intended to gain more complete findings of improving conduct of IT process values performing as limitation of actualizing service quality of IT operation in assuring perpetuity of expanding market shares of online stores in West Kalimantan. Findings (2.437, 2.433, 2.423, 2.488, 2.423, and 2.481) consecutively for PO8, PO9, DS7, DS13, ME1, and ME4 show that maturity values of are smaller than 2.50. The fact shows that several IT processes remain at Position 2 (repeatable but intuitive).

Key words : IT Governance, Maturity Levels, Online Stores.

1. INTRODUCTION

Rapid improvement of Information Technology (IT) facilitates personal relationships with customers through various online channels or online stores [1]. Particularly known as a Business-to-Consumer (B2C) type, they provide easiness and flexibility when building communication on commerce, include bigger market shares and opportunities in global expansion of markets, allow collaboration with business partners, and increase investments without spending big operation costs [2]. In addition, communication on procurement and distribution of products becomes more effective and interactive so that customer satisfaction values are risen [3]. As a business process model extremely relying on IT reliability, the success of online stores is inseparable from the capability to provide optimal, accurate service

quality of IT operation [4] in satisfying customers' needs and expectations. IT operation services should be consistent in supporting business strategy and becoming a recent alternative in formulating online commerce strategy [5] when expanding market shares in general.

Actualizing quality of IT operation services requires obvious mapping of utilizing application portfolios of IT services in information service provision systematically [6], properly, and transparently planned, structured, and managed [7]. Availability of varied information services without having portfolio governance of IT service applications can hinder synchronization and interoperability of providing information of every product or online services [8]. Actualization of fast, responsive service mechanisms of IT operation requires alignment of application portfolios of IT services to anticipate needs of every business process in managing online store businesses and, consequently, every activity can run smoothly [9]. All facilities and benefits that can be obtained through online stores are not only determined by good websites offering products with low prices, but also crucially by ascertainment of quality of optimal, accurate IT services [10]. Partial, inaccurate IT operation services can cause mistakes in management of decision-making processes and restrict opportunities to expand online markets internationally.

Achieving suitability of information requirements through application portfolios of IT services, appropriate, measurable IT governance maturity levels should be concerned [11]. These levels represent the extent of benefits of implementing the services of IT operation in boosting the online business processes. They further indicate achievement of current values of service performance of IT operation with the expected maturity [12]. This is of great importance considering that the difference of values can be a benchmark for cognizing and assessing gaps occurring in the management of IT operation services [13]. Ownership of IT governance is, therefore, vital to ensure quality of more effective, efficient IT operation services. Managing application portfolios of IT services should cover services of commercial administration processes at online stores and

meet expectations of market expansion through guaranteed synchronization and interoperability of information. This truth undeniably pertains to maturity levels of IT governance in terms of Plan and Organize (PO), Acquired and Implement (AI), Deliver and Support (DS), and Monitor and Evaluate (ME) [14], [15].

Such four primary aspects can be critical implications for the management of online stores to actualize accurate IT governance including online businesses performed in West Kalimantan. This province becomes the study site considering that as a region with rapid economic growth, it is an area directly adjacent to Malaysia. This circumstance is definitely finer since market expansion is facilitated. Moreover, businesses of online stores grow along with the ease of regulations by government for performers of micro, small, and medium enterprises. Growth of online businesses, however, only lasts shortly due to the inability to provide quality IT operation services for customers' needs [16].

Referring to previous research noting the sale of online cosmetic products, averages found for maturity levels of domains of DS and AI were 2.301 and 2.674. Both the values were in ranges of the second (repeatable but intuitive) and the third positions (defined process) [17]. Next, research on a number of micro, small, and medium enterprises marketing clothes online also showed that on the average, IT maturity values of PO and DS Domains categorized at the third position (defined process) were 2.601 and 2.750 [18]. Likewise, the one focusing on services of IT operation of online stores [19] resulted in the average of 2.653.

Along with results of the latest surveys, the majority of online stores particularly located in Pontianak, Indonesia have implemented online transaction mechanisms through utilization of application portfolios of IT services when serving customers. This condition is necessary to know the extent of contributions of quality of IT operation services in assuring the perpetuity and ability to expand market shares of online stores. Based on measured findings of maturity values of IT governance in previous studies, it can be summarized that ownership of business management of providing IT operation services according to expectations and desires both for the management and consumers in online stores in West Kalimantan is still absent. Relevance with previous research is more on the validity and capability to measure maturity levels of IT governance using COBIT Framework 4.1. This study focuses on all domains, namely PO, AI, DS, and ME. They are interrelated and have influences with IT processes [20].

COBIT Framework 4.1 is a generic collection of best practices used as a reference in determining control objectives and IT processes required in IT management [21]. The framework can reduce the gap between both kinds of controls through control objective levels, i.e. activities/tasks, processes, and domains. Its principal features are businesses oriented to processes, controls, as well as more accurate measurement [21], [22]. COBIT Framework 4.1 produces maturity values becoming an evaluation method used to control IT processes of actual and expected maturity. Besides, it contributes to linkage of IT, business needs of organizations, regulation of IT activities in a generally accepted process model, as well as identification of IT resources and controls [23].

Problems formulated in this research consisted of (a) the extent to which maturity levels of IT governance in relation to quality of IT operation services in expanding market shares through online stores; (b) impacts of all online stores in relation to quality of IT operation services based on measured findings of IT domain processes; and (c) efforts or activities that should be taken to actualize quality of IT operation services. Such the study was intended to gain more complete findings facilitating improved values of IT processes as a limit to actualize such the quality in ensuring perpetuity of expanding market shares of the whole online stores in West Kalimantan.

2. LITERATURE REVIEW

2.1 IT Governance

IT governance is a term that has commenced to be a substantial concern for organizational requirements since the paper was published by Brown (1997) and Brown & Magill (1994). It is inseparable from organizational governance [24]. Implementation implications of IT governance increasingly provide effective management of businesses and other activities. Through effective committee strategy and information communication, the whole policies and procedures can be clearly informed and IT governance is positively affected [25]. Occurring changes provide important implications for the stakeholders and management that IT governance has become an important need for the present and upcoming time [26]. Understandably, IT governance serves as right solutions to IT complexities.

The top management and an integral department of corporate governance are responsible for IT governance particularly including decision rights, accountability framework, and encouragement of desired behavior of using IT in ensuring efficient, effective IT goals [27]. The reflection is that such the governance controls responsibilities of the commissioner board, leaders, and IT management in developing management of businesses, IT organization structures, strategy of businesses and IT, and processes in IT management to reach organizational goals through proper application [28]. The only effort to strengthen organizational

relationships with IT governance is through linkage of structures, processes, and mechanisms [29]. Again, it is clarified that it also becomes the capability of the top management to control formulation and implementation of IT strategy through organizational structures and processes in producing desired behavioras certaining continual use of IT and expanding strategy and goals of organizations.

IT governance has become a substantial part supporting the success of an organization because of its relational structures controlling each other through addition of values as well as risk balance associated with IT process management. This governance guarantees that IT management is aligned with business strategy implemented by the director board and executive management [30]. The fact implies that IT assets and infrastructure are essential resources when implementing fine, accurate IT governance in order to productively achieve goals and performance of organizations [31].

2.2 IT Maturity Levels

IT governance maturity levels are intended to determine current troubles and priority of enhancement. Maturity values are designed as profiles of IT processes in order to cognize description of current and upcoming circumstances [32]. Besides, they should be used to increase awareness of fundamentality of managing IT processes while identifying priorities of levels of IT governance [33]. It should be understood that maturity levels act as representation of IT processes taking place within an organization. Maturity values of IT governance are further aimed to satisfy criteria of some levels in spite of the same processes [33]. Through maturity levels, assessed IT governance at current and expected conditions can be known [34]. They start from zero or non-existent level until the fifth optimized level. Maturity values indicate levels of IT processes as a whole at each level [34], [35]. These processes in each domain possess ranks based on expectations of the management. Those having the smallest maturity level and big contributions can be discovered afterwards [35].

2.3 Online Stores

The capability to provide online services with good quality based on customers' expectations is not always restricted to accuracy, completeness, and current information of products [36]. In this particular case, the most critical matter is building customers' satisfaction, trust, and loyalty by consistently improving and ascertaining quality of IT services [37]. Online store businesses are defined as services offered through the internet network, managed for customers, and interacted through capabilities and availability of information on websites [38]. Failure to build quality IT services at online stores can result in dissatisfaction, complaints, and even possibilities of moving to other competitors [39]. Actualization of quality of IT services of online stores in

expanding market shares is inseparable from readiness of IT service management and composition of website design used to market products [40]. Business models through online stores with B2C segmentation are strongly linked to existence and assurance of quality of IT services so that online customers' needs can be fulfilled [41].

3. RESEARCH METHOD

A Research and Development (R&D) survey method was the form of this research design. For needs of measuring and evaluating maturity levels of each domain of IT governance, COBIT Framework 4.1 was used. The population was from all organizations or business units marketing products through online stores for more than 5 years in West Kalimantan. The whole participants were business managers of middle-up online stores. A purposive sampling technique was applied [42]. Data were primarily collected through distribution of questionnaires to 112 respondents. There were, nonetheless, only 99 of them making submission (88.39%). Questionnaires were filled out through Google Form and data were in process through Likert Scales with intervals in the range of strongly agree (Score 6) to strongly disagree (Score 1). It was apparently noted that ordinal use of these scales could provide more accurate data because of exclusion of a hesitation factor [43].

Data processing began with calculation of maturity values of PO, AI, DS, and ME Domains by referring to COBIT Framework 4.1 and continued with processing of each maturity level of IT process. Following this, measurement of aggregation of maturity levels through arithmetic means was conducted [44]. Calculation of indexes of each objective of research results referred to such the formula: Index = {Σ (number of answers x maturity value): (number of questions x number of respondents)}. A rounding scale of the index of every level of the maturity model started from Level 0 (zero/non-existent) to Level 5 (optimized) [45]. Processed through Microsoft Excel, aggregation scores were placed in the table and represented with radar charts [46]. Rounding index scales of levels of the maturity model we reserved in Table 1.

Table 1: Rounding Index Scales

Scale	Maturity Level
4.51 – 5.00	5 – Optimized
3.51 – 4.50	4 – Managed and measurable
2.51 – 3.50	3 – Defined process
1.51 – 2.50	2 – Repeatable but intuitive
0.51 – 1.50	1 – Initial/ad hoc
0.00 – 0.50	0 – Non-existent

4. RESULTS AND DISCUSSIONS

Referring to measured maturity levels of IT governance, the whole IT processes of domains of PO, AI, DS, and ME are still unable to provide quality services of IT operation according to expectations of the management of online stores. Substantial complexities faced are inseparable from structures of application portfolios of IT services creating considerable gaps of expectations of the management as well as customers. Table 2 presents recapitulation of calculation of maturity values of each domain of IT governance.

Table 2: Computed Maturity Values

Domain	Process	Current Maturity Value
PO1	Definition of strategic IT planning	3.313
PO2	Definition of information architecture	3.233
PO3	Determination of IT directions	3.228
PO4	Definition of IT processes, organizations, and their interrelationships	3.313
PO5	IT investment management	3.313
PO6	Communication of goals and directions of the management	3.536
PO7	IT resource management	2.625
PO8	Quality management	2.437
PO9	Estimation and management of IT risks	2.433
PO10	Project management	3.571
AI1	Automatic solution identification	3.671
AI2	Gain and maintenance of applications	3.927
AI3	Gain and maintenance of IT infrastructure	2.625
AI4	Permission of operation and use	3.602
AI5	Fulfillment of IT resources	3.278
AI6	Change management	2.753
AI7	Installation and accreditation of solutions and changes	3.697
DS1	Definition and management of service levels	3.606
DS2	Service management of the third party	3.540
DS3	Management of performance and capacities	3.567
DS4	Assurance of continual services	2.946
DS5	Assurance of system security	2.742
DS6	Identification and allocation of costs	3.967
DS7	Education and training for users	2.423
DS8	Management of service desks and incidents	3.410
DS9	Configuration management	3.905
DS10	Complexity management	3.684
DS11	Data management	3.848
DS12	Physical environment management	2.867
DS13	Operation management	2.488
ME1	Monitoring and evaluation of IT performance	2.423
ME2	Monitoring and evaluation of internal controls	3.821
ME3	Fulfillment assurance of external needs	3.582
ME4	Provision of IT governance	2.481
Average		3.259

Regarding results presented in Table 2, the average of entire domains is 3.259 and is at the interval of maturity scales of 2.51-3.50 (defined process). Maturity values of IT governance are, nevertheless, still unable to meet the fourth level (managed and measurable). There is still a gap value of 0.741. It is further found that the highest and the lowest maturity values (3.967 and 2.423) are respectively possessed by DS6 Process (identification and allocation of costs) and ME1 Process (monitoring and evaluation of IT performance). Achievement of both of these values is very significant. While DS6 has reached the fourth level (managed and measurable), ME1 is still in the second level (repeatable but intuitive).

Hence, it can be generally implied that online stores expanding market shares have not been wholly standardized in terms of quality management of IT operation services. In spite of the fact that on average, each online store has completion of standardization and documentation procedures as well as the conduct of a number of trainings, all IT processes should still be run smoothly. At this maturity level, only some existing deviations can be detected properly. Regrettably, while there is still tendency of incomplete establishment of procedures of online businesses in West Kalimantan, practice shave been formalized.

In addition to findings, IT processes having reached the fourth position (managed and measurable) with scales above 3.51 and below 4.50 are PO6 (3.536), PO10 (3.571), AI1 (3.671), AI2 (3.927), AI4 (3.602), AI7 (3.697), DS1 (3.606), DS2 (3.540), DS3 (3.567), DS6 (3.967), DS9 (3.905), DS10 (3.684), DS11 (3.848), ME2 (3.821), and ME3 (3.582). Therefore, expectations of the management of online stores in West Kalimantan are met. Obviously, IT processes have significantly shown and been able to provide quality IT operation services for internal parties and stakeholders. Principally, online stores in West Kalimantan have owned management system of monitoring and measuring appropriateness of procedures as well as taking actions once they cannot be effectively executed. Numerous IT processes have been able to work well and constantly. Also, a number of

online stores have implemented certain limits of automation devices.

On the other hand, calculation results also show that there are still IT processes of IT governance with maturity values which are smaller than 2.50, namely PO8 (2.437), PO9 (2.433), DS7 (2.423), DS13 (2.488), ME1 (2.423), and ME4 (2.481). Being at Position 2 (repeatable but intuitive), the indication is that there are still six IT processes in an alarming circumstance. The lowest IT maturity values are possessed by DS7 (education and training for users) and ME1 (monitoring and evaluation of IT performance). All of these IT processes are very critical since they can create obstacles of running businesses of online stores. Having very significant values, they should be concerned immediately. In other words, immediate improvement should be the top priority in order to make them positively support other processes (see Figure 1).

IT processes which are already at the third position (PO1, PO2, PO3, PO4, PO5, PO7, AI3, AI5, AI6, DS4, DS5, DS8, and DS12) require following treatment to reach the fourth position (managed and measurable). It is noted that values of IT processes at the third position (PO7 (IT resource management), AI3 (gain and maintenance of IT infrastructure), and AI6 (change management)) vary and fail to exceed the value of three, for instance. Apparently, they have been above 2.51 though.
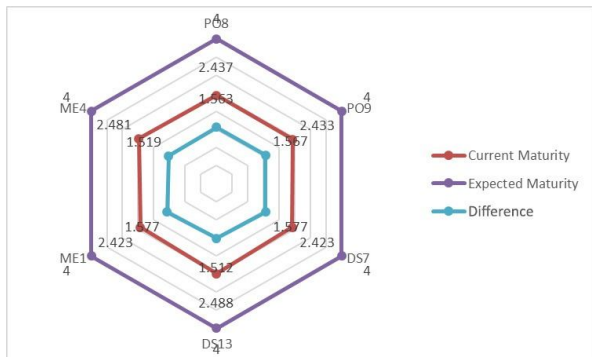

Figure 1: The Lowest IT Governance Maturity Levels

IT governance maturity values in relation to quality of IT operation services in expanding market shares of online stores should specifically prioritize PO7 (IT resource management), PO8 (quality management), PO9 (estimation and management of IT risks), AI3 (gain and maintenance of IT infrastructure), AI6 (change management), DS7 (education and training for users), DS13 (operation management), ME1 (monitoring and evaluation of IT performance), and ME4 (provision of IT governance). Such IT processes have huge gaps of anticipating business continuity of online stores in West Kalimantan (see Figure 2).
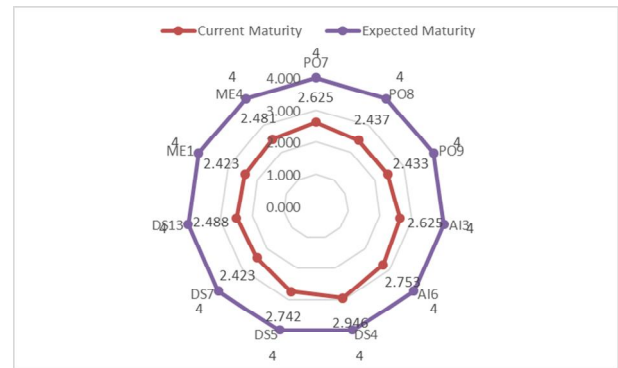

Figure 2: Gaps of IT Governance Maturity Levels

Actualizing IT governance at the expected level, it is requisite to immediately take following comprehensive reforms. More specifically, online stores should have planning, implementation, and maintenance of management system of data quality with structured standards of quality requirements, procedures, and policies. Quality requirements should also be developed and communicated with indicators quantitatively. Furthermore, continuous improvement through clear monitoring, analysis, and actions on irregularities should be conducted. Results can then be communicated to stakeholders. Implementing quality management to ascertain the use of IT supports improvement, sustainable business processes, and transparency for stakeholders. Realizing the importance, system of training and education should be properly applied. It is also suggested that determination of training needs based on competency and expertise until the process of evaluating results of participants' performance is effectively planned and organized.

Policy definition of procedures, changing values of performance indicators, and addition of control objectives referred to enhance each IT process are other positive efforts to make until IT process management is in compliance with fine IT management standards based on measured investment mechanisms. IT application portfolios should ensure provision of sustainable IT operation services with small impacts provided that disruption of IT services appears.

In addition to enhancement of process performance, the management needs to take remedial actions against present process incompatibilities with standards so that the same things will not happen in the future. Coping with all IT processes, substantially, abilities to determine measurement indicators of performance and understand conditions of IT operation services for smoothness and availability of information of online stores should exist. Moreover, continuous involvement between the management and users in every IT process is required when formulating relationships of IT processes with all IT governance domains. Other requirements pertain to appropriate coordination performed to reach quality synchronization and interoperability of IT operation services as well as interrelationships of each process in terms of control

objectives of inputs and outputs. Thus, flows of information are connected to each another.

An ultimate process is associated with structures in organizations, processes of IT management, models of leadership, roles, and responsibilities. They fully guarantee that IT implementation is aligned with strategy and objectives of each business of an online store. Procedures, standards, policies, and measurement of IT governance further need to be documented and communicated. Following these, integrating IT governance and cooperative governance with laws and regulations can be made. Another recommended thing is that reporting media covering IT investment strategy and programs is prepared so that constant monitoring and evaluation on funding can be performed. There should be obvious elements of accountability and practices to evade damage and negligence of internal control. This is crucial considering mistakes of applying IT portfolio investment resulting in inappropriateness. Finally, the whole risks that may occur should receive prompt, appropriate responses.

5. CONCLUSION AND FUTURE RESEARCH

IT governance maturity levels remain an important indicator used to provide perspectives on quality of IT operation services of the whole online stores in West Kalimantan. Study findings can map structures, processes, and relationships of management system of more complete application portfolios of IT services. Realizing quality of IT operation services needs management system of IT resources, control, estimation and management of IT risks, possession and maintenance of IT infrastructure, management of changes, education and training for users, management of operation, monitoring and evaluation of IT performance, as well as provision of IT governance. Regarding future research, alignment between business objectives of online product marketing and IT strategy goals can be integrated through architecture planning in terms of data, applications, and IT according to the interrelationship of IT processes of each domain.

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