Measurement of quality of certification services to reduce wastage of non value added activity (journal review)

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Abstract. Increasing consumer needs that are consumptive causes the service industry, especially in the field of certification, to guarantee a product begins to experience many requests related to the legality of a product with high demand related to the guarantee of a product both at home and abroad. Hope in this system the certification process should be faster, easier, transparent and flexible. The fact that certification services are still often having problems with the number of complaints from customers submitting certification because the length of the certification process is still far from the standard set by the company. Factors that often cause a service failure due to a service experiencing waste such as delays, duplication, unnecessary movements, unclear communication, wrong inventory, error, and lost opportunities. The cause of the length of the certification process was due to many activities carried out repeatedly due to the absence of standards in the assessment of prospective customers and lack of training for employees. Several approaches are explained in this paper as a proposal to design a process flow to eliminate waste in a process that does not provide added value (non value added activity), especially in the service industry

1. Introduction
Wastage in Japanese is called young, is everything the action is done without producing value. Taiichi Ohno, a Toyota executive, was the first to spark seven kinds of waste. Then Linker adds one type of waste to the seven kinds of waste [1]. A very good method of reducing waste is Lean - Service. Lean Service is a systematic approach to identify and eliminate waste through a series of improvement activities [2].

The problems that often occur in the service company is still the amount of waste (waste) in terms of time serving customers that are not affected by inefficient activity or no added value. Activities that do not have added value include in the process of supplying raw materials from suppliers, material flow from the initial process to the final process, the movement of tools and machines that do not fit the capacity, waiting process, and rework process [3].

Failure on services occurs when the customer does not get the service as expected. Some factors that cause the failure of a service result from human resources, environment, equipment, methods, and management are important factors in running the service process itself. So it is necessary to find out how to reduce the failure of service is an important issue for a business. It is important for service designers to identify potential failure modes and take appropriate action to prevent such failures. With limited resources, managers or corporate leaders should be able to prioritize potential failure modes on service delivery and provide improvements before the services are rendered [4].
The solution needs to make continuous improvements to create standardized work by concentrating on achieving continuous process flow by identifying the value in each step of the activity. Any steps that fail to add value can then be omitted and identify the root cause of each delay, this is represented in the form of a value-stream mapping (VSM) map [5].

This paper focus “How to analyzing the activities that affect the effectiveness of the certification process”. Plus the literature of some relevant international journals. The literature study conducted over the last 15 years shows several approaches by researchers to solve service quality problems and eliminate non value-added activities.

2. The Concept of Reducing Wastage

Lean is a continuous effort to eliminate waste that occurs in a process and increase added value to a product or service in an effort to provide value to customer value. Lean aims to continuously increase value to customers through continuous improvement in the comparison between value added to waste.

In 2006, the comparison of value with waste in Japanese companies was around 50%, Toyota Motor companies about 57%, the best companies in North America (the United States and Canada) about 30%, while the company's value-to-waste ratio best in Indonesia only about 10%. A company can be considered Lean if the value - to - waste ratio has reached a minimum of 30%. If the company is not Lean, the company may be called Un - Lean Enterprise and categorized as a traditional company [6].

Lean as a business philosophy based on the efforts to minimize resource use. In a company process. Lean focuses on identifying and eliminating non-value-added activities in design, production or service operations, and supply chain management directly related to customer satisfaction [7].

At present, the concept of lean has been used dalam meminimalkan pengurangan waste. Dalam konteks ini, value stream mapping (VSM) digunakan untuk melakukan pemetaan dan penyelidikan lebih lanjut dari segmen tertentu dari keseluruhan value stream atau value stream secara keseluruhan. Meskipun pendekatan VSM awalnya berasal dari Sistem Produksi Toyota. Selanjutnya, dimungkinkan untuk memperpanjang VSM ke seluruh rantai pasok. Pendekatan VSM menggunakan berbagai alat untuk meningkatkan nilai dari proses.

3. Techniques in Reducing Wastage

Various kinds of tools and techniques in lean are value stream mapping, waste elimination, and 5 why. Value Stream Mapping is one of the Lean techniques commonly used to analyze the current flow of materials and information needed to bring a product or service to the consumer. Value Stream Mapping is derived from Toyota companies and this technique is also often called Material and Information Flow Mapping.

In waste elimination there are 2 main categories of waste, namely Type One Waste and Type Two Waste. Type One Waste is a work activity that does not create added value in the process of transforming inputs into outputs along the value stream, but the activity is now unavoidable for various reasons. For example, inspection and sorting activities from a Lean perspective are not value-added activities that are waste, but nowadays companies generally still require inspection and sorting because the machines and equipment used are so old that their reliability is reduced. Similarly, surveillance of people, for example, is a non-value-added activity based on Lean's perspective, but now the company still has to do it because the person has just been recruited by the company so that it has no experience. In the long run Type One Waste should be eliminated or reduced. Type One Waste is often as Incident al Activity or Incidental Work which belongs to non value-adding activities (non-value-adding work or activity).

Analysis 5 Whys is a simple question-and-answer technique to investigate causal relationships that are at the root of a problem. This technique is the practice of asking, why five times, why a technical problem occurs in an effort to determine the root cause of a damage or problem. This technique was developed by Sakichi Toyoda who was later used in the company of Toyota Motor Corporation. In the 1970s, the Why 5 strategy was popularized by the Toyota Production System. This method is now used as one of the methods in Six Sigma strategy.
3.1. Servperf (Service Performance)
According to Cronin and Taylor (1994) cited by Dharmayanti, Service Performance is the performance of the service received by consumers themselves and assess the quality of the service they really feel. [12] In contrast to the SERVQUAL method, SERVPERF has the advantage of providing information on which service quality attributes are more important to be improved so that anata ra wants and interests can become more visible in the analysis of service quality attributes [13] (Remba, et al, 2008). This is reinforced by the statement of Alford and Sherrell (1996) quoted from Dharmayanti (2006), that service performance will be a good predictor of service quality or service. [14] Service performance is more able to answer the problems that arise in determining the quality of services because consumers will only be able to judge the quality they receive from a particular producer not in their perception of the quality of service in general (Bolton and Drew 1991; Teas 1993; Gotlieb, Grewal and Brown, 1994) quoted from Dharmayanti (2006). [15] Cronin and Taylor (1992) found that measures using SERVPERF gave better results, had more reliable estimates, and lower bias compared to SERVQUAL. [16] Mehta et al. (2000) states that for service industries with "a lot of little goods and services" such as supermarkets, SERVQUAL is better to apply. However, for environments with elements of service are important, such as electronics sellers, SERVPERF is more suitable to be consumed. [17]

3.2. Lean Service
Lean service is a set of tools and methods designed to eliminate waste, reduce waiting times, improve performance, and reduce costs. According to other sources, lean is eliminating waste and creating customer value, and consists of several principles on which to base its philosophy [18] [19]. Lean is an ongoing effort to eliminate waste and increase the value added of products (goods and or services) to deliver value to customers (customer value) [6].

There are five basic principles of Lean Service:
1. Specify the exact value of the product desired by the customer.
2. Identify the transform (Value Stream) for each service process.
3. Eliminating all the waste in the service flow process (Moment of Truth) for the value to flow unimpeded.
4. Establish an anti-fault system of any service process to avoid wastage and delays.
5. Pursuit of excellence to achieve perfection (Zero Waste) through continuous improvement radically.

According to Ciarapica et al (2016) that Value Stream Mapping (VSM) is a standard method for documenting a mapping process and a flow of information both physically and only information, which is applied in a systematic way of analyzing an activity or process that is focused on identifying waste that is in every activity. Grewal (2008) says The description of lean processes is by identifying activities that have added value in a value stream and eliminating unnecessary waste. This tool developed by VSM was originally developed to focus on analyzing an activity flowing in a process in a manufacturing environment. VSM allows a company to see all future and future processes that we want in an effort to identify and eliminate waste, then simplify the work process, reduce waiting time, reduce costs and improve quality The steps to implementing VSM are to draw a map of the current situation.

The current process map flow is made in such a way and identifies various types of added value and activities that do not have added value in this phase. The current state map is usually drawn by a cross-functional, multi-disciplinary team to document the actual workings. The next step is to develop a map of future conditions. so, the current state map must be analyzed first. The team needs to identify gaps or areas of improvement (eg large inventory, long lead times), and provide reasons why and why these identified activities are not worth adding. in the gap found, the team proposes what must be changed in the process, method, and organization. The final step is to analyze the results after applying
the proposed changes. This must be quantified in terms of reducing lead time, reducing cycle time, reducing inventory, etc. In addition, the team needs to develop a plan that provides necessary action steps to support the proposed changes. The steps VSM are shown in Figure 1.

![Figure 1. Implementation VSM](image)

Lean's approach to service, particularly in service, has a significant impact on quality, cost and time and satisfaction for both employees and consumers. The results of research on tangible dimensions such as reduction of processing time or waiting time, improve quality with reduction of errors as well as cost reduction, as well as intangible factors such as increased motivation and employee satisfaction and increased customer satisfaction.

Examples of cases in health care, Lean focuses on the ongoing assessment of clinical processes to identify and eliminate waste of patients, the ability of employees to test their work environment, and improve quality, safety and efficiency in the process. Lean advises in the mindset of medical and administrative employees to create better service capacity and establish new rules, effective and efficient methods for service delivery.

3.3. Activity-Based Management (ABM)

Researchers have defined Activity-Based Management (ABM) as a systematic method for planning, controlling, and increasing activities and related indirect costs. This method is the principle of allocating all activities to the cost triggers for each of these activities. ABM uses ABC information to control activity costs based on the underlying assumptions mentioned earlier. ABM has proven to be very efficient in controlling activity both in the service and production of the company. Cost analysis carried out using a multidimensional approach to cost drivers in companies has provided a broad background ABM method and is very useful for understanding and controlling costs in most companies, including steel industry companies. According to ABC, the cost of repairs has a single cost driver as output, but becomes a variable for other cost drivers as an output circuit or product range. In other words, costs are not fully corrected or variable, but their behavior depends on the relationship with the trigger of the cost. The ABM principle can be used to regroup different activities into activities with cost triggers that can facilitate cost control.

4. Conclusions

Customer demand in terms of the legality of a product's assurance will continue to increase as the industry grows and the number of people and the economy continues to increase. Especially developing countries such as Indonesia, the duty of certification services industry still not meet expectations, so it can cause risks for the community such as loss of public confidence due to the bureaucratic process that is still too long due to wasteful flow of activity on the certification process,
thereby degrading the quality of service the company. Failures like this will impact the loss of customers.

The approach to solve the problem is still not solved seriously by the company resulting in a decrease in productivity.

This paper presents some analytical techniques that can measure the extent to which service quality needs to be evaluated. The above approach is expected to be a long-term solution to solve the problem of the length of process in certification.

Although theoretically described steps in work activities that do not create added value in the process of transforming inputs into outputs along the value stream, in practice, it is tailored to the needs and conditions of the industry itself to choose the most likely combination to apply in this situation. Through appropriate approaches and analytical techniques, the problem of non value-added activities can be reduced so that it will improve the quality of service in the future.

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