

[SV 11] ANALYSIS OF LEAN MANAGEMENT IMPLEMENTATION IN SERVICE SECTOR

Teow Boon Xin¹ & Norani Nordin²

¹⁻²*School of Technology Management and Logistics, College of Business, Universiti Utara Malaysia, 06010 UUM Sintok, Kedah
sylviaxin93@gmail.com¹, nora561@gmail.com²*

ABSTRACT

This study is about the analysis in the Lean management implementation in the service sector. This study looks into the wastes that created within the service industry and how the Lean Service could be applied to eliminate the wastes and reducing costs. The objective of this research is to understand the wastes within the service sector and thus identify Lean tools and techniques that applicable in the service sector. For that, in-depth interview was developed as the main instrument for data collection. The interview was done to Company A. As the results, this study could contribute to eliminate the wastes within the service sector by implementing several applicable Lean tools and techniques. Besides that, the implementation of Lean in service enables to provide non value added during the process, reducing the costs and thus achieve the satisfaction of customers. It is recommended that future study to make a comparative study in investigating the suitable Lean tools and techniques for specific service industry.

Keywords: *lean management, lean service, lean tools and techniques*

INTRODUCTION

According to Burnes (2004), in this modern world, there are rapid changes in management that affect all the organizations and managers. More centralized organizations are trying to transform their traditional policies by implementing different strategic change tools in order to improve their operations (Burnes, 2004). Due to the increasing in requirement and demand for quality services, hence service operations are becoming significant in the global economy. Lean has become the most common tool where organizations applied for due to its efficiency in enhancing the organizational performance by using waste evaluation and reducing costs from the operations. It is undeniable that the successful in implementation of Lean can help companies gain the benefits. For an example, Lean system is conducive to maintain long-term customer satisfaction (Maleyeff, 2006).

Despite the demand for the implementation of Lean in the service sector growing awareness, few studies have investigated its effectiveness in order to strengthen its financial position. Even though Lean has been applied in the hospital settings, but there is not enough evidence and strong base, yet, lack of implementation of Lean tools and techniques for analysis used.

The aim of this research study is to explore and understand the Lean operation's implementation in the service sector. In this context, the researcher will identify the five

principles of Lean Management and the types of wastes in the service sector. Moreover, the researcher will also identify the Lean tools and techniques that are applicable for organization in the service sector.

PROBLEM STATEMENT

Nowadays, service industry has become a complex, large and intricate hybrid service that doesn't work well together. What the companies do, instead, is to balance the parts that don't work well together by the creation of a customer service centre, sometimes called as a "Failure Industry". Besides that, Lean principles and techniques has been so slow to be applied in service processes such as accounting, human resources, finance and customer services. One of the reasons is because of the waste and inefficiency that can obstruct with services are rarely obvious. It is unlike in factories, where the stacks of inventory and idle workers that are clear signs of broken processes. However, in the service sector, it tends to lie between departments, functions or regions. And , it also lies with the white-collar employees themselves, who may be resistant to the idea that their work will be coordinated (Team, 2012).

On the other hand, a value that provides to the consumer plays an important role. This is because it helps to create value for the consumers who are willing to pay for a specified amount for a particular products or services. However, there are some types of waste that created within the organizations. Waste is something that adds no value. People would not be satisfied to pay for something that not add value to what they actually want.

Furthermore, the lack of standardization and consistency in service process give high impact to the organization, such as inefficient in process, many errors and reduce overall responsiveness and customer satisfaction (Team, 2012). In addition, Lean behavior is also emphasized, it is considered to be conducive to manufacturing; however, Lean is considered to be a simple tool for all sectors nowadays. Financial companies as an example where they implement Lean to improve their productivity and efficiency leading to customer satisfaction.

LITERATURE REVIEW

Lean management

Lean management plays an important role in improving the performance of businesses in the USA since the 1970s. It involves reducing costs, improving quality, reducing lead-times, increasing market share, develop new products and services, human resources, etc. Lean management was developed from Toyota Production Systems by Ota Ono, Shigeo Shingo and others. It is a long term approach to run an organization and to work as systematically in order to achieve small change in improving quality and productivity. Lean management referred to as Lean production practices. It considers that the use of resources is a waste of anything other than creating value for the end customer and thus a target for elimination (Begam, Swamynathan, & Sekkizhar, 2013).

Besides that, Lean management does not identify activity with value, but it is focused on the principle that it is possible to produce less motion, so that costs and waste are reduced and people work more satisfying. It seeks to eliminate any waste of money, time, or effort by identifying each step in the workflow and then removing steps that do not create value. Hence, there are five Lean principles that should be used by organizations to improve their operations and it should focus on improvement continuously (Loughrin, 2010). Womack and Jones define the five principles of Lean, which are accepted by major importance to the successful implementation and they are determined in the following.

a) Specify the value.

The first principle is specifying the value from the customer's point of view. The challenge faced by manufacturing company is based on understanding customer needs, leading to comply with the specified value of Lean principles to develop a portfolio (Melton, 2005).

b) Identify the value stream.

The second principle is to determine the value stream, which means that according to the customer's point of view, rather than according to departmental needs of the organization from raw materials to the final customer process (Melton, 2005).

c) Elimination the waste.

The third principle is to eliminate the waste. Elimination of waste is a process to eliminate waste or add value to the production of a product or service, which can provide customer with one of the best product or service. Waste can be eliminated through the implementation of Lean and various Lean tools, but the focus should not be on the identification and removal of waste (McBride, 2003).

d) Establish pull.

The fourth principle focusing on the demands of customers in order for elimination of excess production. Customers may "pull" the product from manufacturer as required, usually for weeks rather than months. As a result, the product does not need to be produced in the early stages and inventory of raw material because it generates an expensive inventory that needs to be managed and saves money for both the producers and the customers (Crawford, 2016).

e) Seek perfection.

The fifth principle concerns the improvement of quality through the production of products that the customer needs at a reasonable price and without waste (Womack, 1990). The cyclical improvement should be carried out continuously and without end (Melton, 2005).

Lean service

In manufacturing companies, 20% of the costs comes from manufacturing labour, while costs from product design where it involves services such as product development, human resources, and finance comprise about 80%. This results contributed to higher service costs and increased competition, and it leads to loss of customers, the more obvious services than in manufacturing (George, 2003). In order to maintain customer satisfaction, the company is developing Lean principles to improve the quality of their services to reduce costs and improve profitability (Bowen & Youngdahl, 1998). The

Lean philosophy is the way to determine where the value of the process is located, minimizing or eliminating waste in the organization's internal processes, and creating value for customers. Womack and Jones (1994) identify this concept illustrates how Lean applies to any organization because the ultimate objective of the organization is to create value to the users (Piercy & Rich, 2009). Bowen and Youngdahl (1998) has presented some characteristics of Lean Service, which are shown in Table 1. By implementing on Lean Service, investing in people paying more attention to the organization, and not equipment (Bowen & Youngdahl, 1998).

Table 1
Lean service characteristics (Bowen & Youngdahl, 1998)

<i>Reduction</i>	<i>of</i>	<i>performance</i>	<i>tradeoffs</i>
• Operational objectives:	Efficiency of internally-focused and	flexibility of customer-defined	
<i>Flow</i>	<i>production</i>	<i>and</i>	<i>JIT</i>
• Minimize the setup time to allow smoother traffic			<i>pull</i>
• JIT levels of both input and output			<i>orientation</i>
<i>Value-chain</i>			
• Utilize service blueprinting and value analysis to remove non-value-added activities			
<i>Increased</i>	<i>customer</i>	<i>focus</i>	<i>and</i>
• Let the customers participate in the design of service package			<i>training</i>
• Give training in customer service skills and behaviors to employees			
• Cultivate customers in how to contribute to quality service			
<i>Employee</i>			<i>empowerment</i>
• Great investment in employees (skills, teambuilding, participation)			
• Allow employees to use the customers' value equation (benefits divided by price and other "costs")			

Lean services are implemented in organizations that have limited information and are faced with disruptions in mission performance. Due to non-value added activities, the service encounter high costs and slow processes, which cause low in both quality and customer satisfaction. Besides that, the complexity of services that happen in Work in Progress (WIP), and resulted in postponing. For instance, of WIP that can be seen are unchecked e-mails, a must to complete the reports, sales orders and some phone calls that necessary to make. Hence, the process becomes slowly is due to the 20% of activities which leading to a delay of 80% (George, 2003).

Lean's service department is required to add value to the customer by providing superior quality of service and to accelerate the process by using a small but advanced resource. To implement Lean in service, the non-value added activities are a must to examine in order to minimize costs and complications. Meanwhile, workers need to determine residual and hidden costs that resulted in dissimilar process steps, which may be caused by the following capacities, materials and personnel, including corporate restructuring, in order to work more effectively (George, 2003). Besides, organizations should focus on value added activities from the customer's perspective. Through this way, they will have a clearer understanding of customers' needs and how much are they pleased to purchase in order to improve quality of service (George, 2003).

Seven types of wastes in service sector

The core idea of Lean theory is to eliminate all waste in the process (Melton, 2005). People are not content to pay for things that have little added value to their actual needs. The important thing in eliminating waste is to understand where the waste and what the

waste is. There is a policy for each waste to reduce or eliminate its impact on the company, thereby improving overall performance and quality (McBride, 2003). There were seven types of waste identified by Fujio Cho of Toyota (Slack, Chambers, & Johnston, 2007) for those companies who facing the trouble in evaluating and cut down the wastes (Melton, 2005). These seven types of waste are evaluated and described in terms of service perspective. Besides that, there is an additional new waste was described.

Table 2
Seven types of wastes and a new waste (George, 2003; Melton, 2005)

Waste	Description
Motion	No value added to the services, as it only requires additional time and cost associated with needless movement of workers. This motion is difficult to estimate in the service sector.
Defect	It occurs when the service is not executed in the client specification. Even though some services are not costly in correcting errors, however, organizations need to consider that they may also lose customers.
Transportation	Seeking clarification of waste, misleading use of the product or service and a wasteful discovery time can lead to misuse or duplication of location.
Over processing	It includes excessive costs for businesses to add value to the service than is required to satisfy customers.
Overproduction	This means that service output is excessive. This happens when the organization generates more customer service.
Inventory	It means using the excess inventory rather than provide the service that required for customers. It involves higher waiting costs.
Waiting Time	A delay activity is involved where it leads to delays in the coming activities. Waiting time can be analysed by the organization through focus on any activity in the process of identifying delays.
Untapped competence	It occurs in organizations that avoid using the labour force and their ingenuity.

Lean tools and techniques

There are a variety of Lean tools and techniques that can be used in the manufacturing sector as well as the service sector. However, there are just few tools and techniques that capable to apply in the service sector. The following table shows several Lean tools and techniques that are available to be implemented by the service sector.

Table 3
Lean tools and techniques

Lean Tools	Description
Five S's (5S)	5S known as an instrument, which aims to help management practices to create a better working environment by reducing employees' workload and process errors, create a clean and healthy atmosphere together with providing staff training and education in order to enhance their quality and productivity (Gapp, Fisher, & Kobayashi, 2008).
Kanban	Kanban is a control device that serves as a signal for controlling the release of materials in an activity. The main purpose of Kanban is to reduce the inventory costs, achieved by moving inventory only as and when needed. It refers to the posting board or the inventory control cards posted there where the evolution of the service process would be recorded. It is recorded manually and relies on various types of the inventory cards. (Slack, Chambers, & Johnston, 2007).
Fishbone Diagram	Fishbone diagram, known as cause and effect diagram, is very helpful in determining the root cause of the problem. This is undeniable that every organization will face several problems during any processes, and this can happen even if the decision is made without knowing the root cause of the problem, which results in extra times and costs for the company. Therefore, Fishbone diagram is superior in solving the problem by determining the root cause (Morrow & Main, 2008).
Value Stream Mapping	Value stream mapping is used to plot all the movements in a process by analysing the processes so as to determine and cut down no value added activities (Manos, Sattler, & Alukal, 2006). Information and material will be asked for developing final product or service. Value stream mapping is an important tool in service industry special for front-line staff to determine the problems and proposing solutions.

RESEARCH METHODOLOGY

A qualitative data collection method is used in this study where it consists of primary data and secondary data. According to Ghauri (1995), this method emphasizes on the understanding, interpretation, observations in natural settings and closeness to data with a sort of insider view. Company A, a furniture company was chosen for in-depth interview. This company was selected based on the business scope where it provides service to the end user. The researcher prepared the data collection by first contacting the company to be researched and explained the objective of the study yet recorded the main information. A semi-structured interview guide was developed besides this based on the review of literature where it was done in prior study. The interview was done in one-by-one discussion where it used up approximately two hours. The interview process was recorded and transcribed.

The respondent involved is the marketing executive in the company where she has been working about two years for the company and had five years' experience in Multinational Corporation (MNC) as well as eight years' experience in a local online

e-commerce company. She was questioned based upon his practical experiences. The research questions were developed and those questions are performed in structure based on the research from significant literature within the Lean in the service sector.

FINDINGS AND DISCUSSION

Company background

Company A is located in Sungai Petani, Kedah and it was established in 2014. Cozzihomz is the brand name for the furniture business. The main activity of the company is providing customer a good service with high quality home furnishing, such as sofa, dining table, mattress, wardrobe, coffee table and others. Besides that, the company also provided wallpaper services and doing online business in order to increase their profits by first increasing their popularity within the Northern region.

Wastes in Company A

From the interview, the researcher identifies that there were three main types of wastes existing in Company A regarding to the eight wastes that listed in the prior study, which are waiting time, defects and untapped competence. According to the interviewer, there are four main reasons for the wastes to occur within their company. The first reason could be related to the breakdown in communication. This is because most of the time they were under an assumed condition where each of the employees assume others to do the work.

The next reason is likely about some of the employees who have a low competency in the company as they have different expectation with each other. For example, usually the work can be finished in one day, but the workers used up three days to finish it. Hence, it delayed the next processes of service. Another reason occurred by the employees who sometimes busy until he or she forget to open the purchase order or follow up with the suppliers for the orders that they had made. This causes them delay in delivery time and thus received customer complains. Lastly, the company facing the errors in order entry and design errors. For example, some of the goods are ready in stock, but the worker order it again or maybe they wrote wrong the colour code for the goods.

However, the company capable to manage their wastes by providing training and skills to their employees. Besides that, the employer will hold a meeting once they face any of the problems so that they will have a good understanding between each other. Moreover, they will make a workflow improvement in order to reduce the wastes.

The use of five Lean principles to improve the service in Company A

Through the interview, the researcher realizes that the company has been implementing the five Lean principles in their organization indirectly. Therefore, the researcher uses the existing information from the interviewer and analyzes it based upon the five Lean principles and it was categorized as the following.

a) Specify the value.

The company add value to their service by providing a quick delivery, high quality and suited furniture regarding to their customer requirements. In order to measure the value adding to the service, they use the Key Performance Indicators (KPI) to keep track of

the performance of their each service. KPI are used to determine the progress of a company in achieving their strategic goals and comparing the financial and performance of the company against other competitors within its industry. Under KPI, journey to deliver goods and time can be arranged, equipments can be prepared first and communication about the requirement of customers can be acknowledged before sending the goods to them.

b) Identify the value stream.

After specifying the value from the customer's point of view, the company starts to develop their service by first promoting the existing product which is displayed in the company or promoting through the catalogue to their customers. Once the customers decided to buy the goods, sales order will be opened for the display product and new orders will be opened through a purchase order. Besides this, a deposit will be collected and within one week, the goods will be ready for delivery to the end user and full payment will be made on the delivery day. After sales, the company will conduct a customer satisfaction survey by contacting with the customers. If there have any broken goods or wrong parts, the goods will then take back for returns.

c) Elimination the wastes.

The company eliminates their wastes by using KPI and hold a meeting often. This can be explained that when there is a small obstacle that they face during the process in giving the service to the customer, they will solve the problem right on time by discussing with each other and update their KPI. Inside this company, they are having a good teamwork and the employees are obeying all the principles and rules that set by the managing director.

d) Establish pull.

The company pulls the service according to the customer's demand and requirements of the goods. Besides that, they get feedback from the customers. For example, after a period, the person in charge will have a call to the customers and asking whether there have any goods of the company that need to repair or not.

e) Seek perfection.

The company has made the improvement after service, but not each service that has been given. For example, the employees do not have a good communication with the customers before that, hence ended up with many wastes in energy, time and costs. However, after implementing the KPI as a measurement of the performance for the company, it has increased their quality in service and also help the company to reduce the unnecessary costs.

Lean tools and techniques

As Company A does not implementing Lean in their company, and implementing Lean in a company is still very new to the service sector. Therefore, the authors would like to suggest two types of Lean tools which are applicable to the company within this industry. One of the Lean tool is 5S where it is suitable for the company to create a better working environment by reducing employees' workload and processes errors, create a clean and healthy atmosphere together with providing staff training and education in order to enhance their quality and productivity. Another Lean tool is Kanban where it is a system that enable organizations to acknowledge when they should acquire more materials from suppliers. Besides, this system enables the workers

immediately give a sign to supervisor for help when they face problems with customers. As a result, the company will take into consideration about implementing Lean in the future.

CONCLUSION

Since nowadays, many individuals are emphasizing on quality of service, hence the companies are trying to generate higher profit improvement through their services. Implementing Lean in service is quite good for the company as the interviewer agreed that Lean tools and techniques can make the service become effective, reducing waiting time and repeat works, reducing costs and maintain the high levels of service as well as grow with the changing environment and help to attain sustainable competitive advantage. Through data collected from the interview of Company A, this study has been able to highlight that specify the value, identify the value stream, elimination the wastes, establish pull and seek perfection are the five Lean principles implemented by the company indirectly.

This research has achieved its objectives successfully by understanding the wastes within the company, analyzing the implementation of five Lean principles and determining the applicable Lean tools and techniques that is suitable for the service sector. From this study, the outcomes that service sector can get through Lean implementation are they know how to eliminate the wastes and focus on what the customers' value, rather than from the opinion of what is the best choice for customers that thought by companies enable to improve their financial position. However, this study is limited to one company only that tends to influence the generalization of its results. Besides that, due to lack of researches done with related to implement Lean in the service sector, hence, the real implement the theory of Lean tools and techniques in office does not cover in this research. Therefore, future researchers are recommended to make a comparative study in investigating the suitable Lean tools and techniques for specific service industry.

REFERENCES

- Begam, M. S., Swamynathan, R., & Sekkizhar, J. (2013). Current Trends on lean management. *International Journal of Lean Thinking*.
- Bowen, D. E., & Youngdahl, W. E. (1998). "Lean" service: in defense of a production-line approach. *International Journal of Service Industry Management*, 9(3), 207-225.
- Burnes, B. (2004). *Managing Change: A strategic Approach to Organisational Dynamics*. London: Financial Times.
- Crawford, M. (2016). *5 Lean Principles Every Engineer Should Know*. Retrieved from The American Society of Mechanical Engineers: <https://www.asme.org/engineering-topics/articles/manufacturing-design/5-lean-principles-every-should-know>.

- Gapp, R., Fisher, R., & Kobayashi, K. (2008). Rod Gapp Ron Fisher Kaoru Kobayashi. *Management Decision*, 46(4),565-579 .
- George, M. (2003). *Lean Six Sigma for Service: How to Use Lean Speed and Six Sigma Quality to Improve Services and Transactions*. McGraw-Hill, New York: Umeå University Library/Databases/Ebrary.
- Loughrin, M. (2010). *The Four Elements of Lean Leadership*. Retrieved from Supply Chain Digest: http://www.scdigest.com/assets/Experts/Loughrin_10-04-26.php.
- Maleyeff, J. (2006). Exploration of internal service systems using lean principles. *Management Decision*, 44(5), 674-689.
- Manos, A., Sattler, M., & Alukal, G. (2006). Make Healthcare Lean. *Quality Progress*, 39 (7), 24-30.
- McBride, D. (2003, August 29). *The 7 Wastes in Manufacturing*. Retrieved from EMS Consulting Group: <http://www.emsstrategies.com/dm090203article2.html>.
- Melton, T. (2005). The Benefits of Lean Manufacturing: What Lean Thinking has to Offer the Process Industries. *Chemical Engineering Research and Design*, 83(6), 662-673.
- Morrow, K., & Main, J. (2008). *Lean Tools and Techniques*. Retrieved from NHS Lanarkshire: <http://www.lanpdc.scot.nhs.uk/Resources/Lists/Publications/Attachments/3/Lean%20tools%20leaflet.pdf>.
- Piercy, N., & Rich, N. (2009). High quality and low cost: the lean service centre. *European Journal of Marketing*, 43(11/12), 1477-1497.
- Slack, N., Chambers, S., & Johnston, R. (2007). *Operations Management*. Edinburgh Gate, Harlow, Essex: Pearson Education Limited.
- Team, S. (2012, December 24). *Lean principles for services*. Retrieved from Business Standard: http://www.business-standard.com/article/management/lean-principles-for-services-112122400111_1.html.
- Womack, J. J. (1990). *The Machine That Changed The World*. New York: Rawson Associates.