How Applying Soft Lean Components Can Contribute to Reducing Costs in the Service Sector: The Case of Al-Ahliyya Amman University

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***Abstract*—This research aims to identify the rules of lean system application in the service industry. It also seeks to highlight the requirements of applying the lean production system on Al-Ahliyya Amman University to reduce costs. The research was conducted in the form of a case-study in Al-Ahliyya Amman University. Data was collected through discussions with some the officials in the university. Including the HR manager, the financial manager, the student affairs manager, and the student registration manager. The results showed that lean production was most successful in service organisations that depend on the core components of lean; such as continuous improvement, problem-solving, decision-making, knowledge management, and technology usage. These components together can be a critical key to reducing costs which is what Just-in-time technique aims to do.**

***Keywords*—** *Lean System, Reduce Costs, Personnel Development*

1. Introduction

When Lean production systems had received significant attention from many academics, authors, researchers, and practitioners since the second half of the last century when the idea of this system was launched in Japan by Toyota Motor Company. The Japanese engineer TaichiOhno invented the system of Just-In-Time (JIT) production to gain an advantage in the competitive market, which had been led by American auto products [9].

Ohno's idea was based on mixing the benefits of the production systems that were known in that period such as mass production, and handicraft production with the new advanced management and production system. In addition, because this system was created by Toyota, it was known as the Toyota Production System (TPS) or lean system [1].

According to the recommendations of the International motor vehicle program, published in 1980, manufacturing firms are most likely to benefit from applying lean systems. These lean systems focused on the factors and practices that led to the distinguished performance of Toyota regarding productivity

and achieving the seven zeros to the idle time and money compared with their Western vehicle manufacturing rivals [7, 9].

The implementation of lean systems has expanded on a global level. As well as the diversity of business sectors including the service sector, This literature indicates that applying lean among service firms represents an important progress because there are potential benefits to be reaped in this sector rather in traditional manufacturing [2].

1.2 Problem statement and questions:

Because the lean production system has replaced the mass production process in the motor vehicle industry and clarified the differences between quality and productivity, it has also transformed manufacturing operations including service operations from the familiar production environment. From here, the problem of this study will be more favourable to take the following statement: "Lean production systems can be applied in the service sector through exploiting soft lean elements to reduce costs."

This problem will be discussed through the following questions:

What are the soft lean elements that affect the service quality?

How are these elements managed in the service sector?

Does Al Ahliyya University implement a lean system?

1.3 The study significance:

The significance of this study stems from the significance of implementing the lean system in the service sector. Currently, this sector receives tremendous development in both the services diversity and the increase of service users. In this regard, [16] noted that the share of service sector in the total value added in most OECD economies amounted to 70%.

1.4 The study objectives:

The most important purposes of this study are:

- To identify the rules of lean system implementation in the service sector.
- To highlight the requirements of implementing lean system in universities.
- Testing the extent of applying lean system in Al-Ahliyya Amman University.

2. Methodology

2.2 Type of study:

This study was conducted according to the descriptive, analytical approach, which is useful in conducting qualitative social research, especially for the paradigm of a case study.

2.3 Study Population and Sample:

A case study approach was used in conducting this study on Al-Ahliyya Amman University [6], through interviewing some the University officials including the HR Manager, Financial Manager, students affairs manager, and students registration manager.

2.4 Data Collection:

Secondary data were collected from the related literature in addition to some books. The primary data were collected through conducting semi- structured interviews with the sample members.

2.5 Interview Questions:

Open-ended questions were used to collect the sufficient data for the purpose of this study, which was to assess the role of soft lean components in reducing costs in the university. The questions were as follows:

- Does the university's leadership show complete attention to human resources development? And how?
- How are delays in procedures that result from the registration system treated?
- Is there any concern by the management about idle time and money wasted?
- Do you agree that employee training on consolidated coordination among the different departments in the university can decrease the time and money needed for student registration, paying education fees, allocation of transport buses, and transferring students from one faculty to another or from specialisation to another?

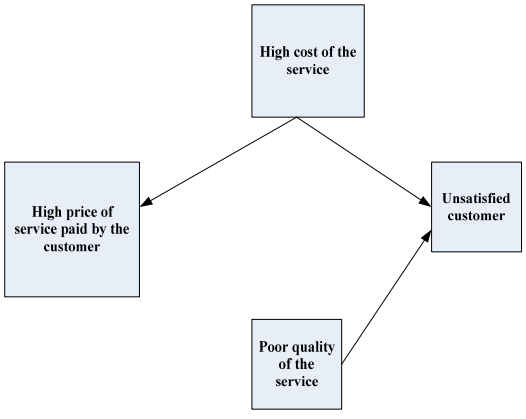
2.6 Theoretical framework and literature reviews:

A comprehensive debate in literature about the lean system was started in 1988 by [10], followed by another piece in 1990 in the book "The Machine that Changed the World" by [17]. These publications show that the lean system has received a wide interest by many academics and practitioners.

Based on these discussions, the lean system was only applied to the industrial sector, especially the auto industry.

2.7 The importance of applying the lean system in the service sector:

Despite the effective contribution of the service sector on the economies in most of the countries around the world, this sector is still suffering from two problems as stated in [5, 13], who reported that the quality of services provided by the vast majority of service firms do not meet the customer expectations. In addition, one can find recent or old literature discussing the bad quality of services. In this regard, [5] pointed out that customer satisfaction rates in service markets are low over time in the U.S. Likewise, in the U.K has conducted a survey over 12 months on British adults and found that 86% of the respondents have received poor quality services and also high costs for the services. We conclude the problem in the service sector can be shown as follows:



2.8 Performance improvement in service sector by applying lean system:

The evidence on the increasing of applying lean technique in the service sector is the great number of surveys and case studies that addressed this issue in actual firms providing services. The related literature has dealt with this subject from different perspectives. For example, [8] have conducted an exploratory study by using surveys to collect data from 711 organisations as a sample, which includes both manufacturing and service firms in 23 countries. The purpose of the study was to investigate the impact of applying lean practices to a supply chain regarding information technologies for e-commerce, e-procurement, and enterprise resource planning to achieve mass customization performance. The results of the study showed that applying lean practices can contribute significantly to mass customization performance. Additionally, the results showed that e-commerce is a better tool to predict performance than e-procurement and enterprise resource planning for service providers.

The current researcher believes that this result is consistent with what is happening in the real world. Similar to e-commerce, banks as service institutions can predict future performance of electronic banking services by evaluating the degree of customer demand for the use of electronic services.

In contrast, [15] have conducted an empirical study on multiple companies on call centre management. They found negative effects on employee morale and performance in call centres that apply lean systems, and this result was attributed to inefficient lean practices. The study was based on two lean processes: 1) simplification and the greater use of a dialogue coder through increased work unification, and 2) improving workflow due to increased use of electronic monitoring systems to improve efficiency by providing incentives to reduce call times.

From the point of view of the current researcher, this study relied on only two of the lean practices that are commonly found in call centres, while ignoring the soft side of lean that relates to human elements. As a result, this caused the negative results. As mentioned earlier, researchers dealt lean service from various dimensions. [12] has conducted field research on outpatient clinics to illustrate the effects of applying lean practices to their performance. The research depended on original quantitative data on appointments during the project “Lean Process Improvement” that was performed to increase capacity to absorb new patients into the healthcare service system. 1726 intake appointments were made for the last year and the year after the lean project. The results showed that the capacity of absorbing new patients increased, by 27% and the no-show rates decreased by 12% as a result of the transformation from traditional service processes to lean service processes.

The current researcher believes that this research has linked the social side with the supportive elements of lean systems where the addition of new equipment to the clinic plays a supportive role to increase the capacity of admitting new patients.

Other researchers examined how organisations (public and private) can imitate the practices of lean systems in solving some complex managerial problems. [3] presented a case study about the implementation of lean-kaizen in the human resources service process in public service organisations. The study was conducted on one of the 60-120 Mexican public service organisations. The data were collected through direct observation, non-intrusive observations, documentary analysis, and semi-structured interviews. The main problem which this study attempts to solve is the delay in hiring. From the viewpoint of the current researcher, such delays may not be the result of the hiring process, especially when there are many procedures such as recruitment, selection, orientation, etc. that precede the employee hiring.

3. Results

The results of the study showed that implementing Lean-Kaizen is possible in the service processes in the public sector, and it reduces the cycle time of human resource practices, regarding recruitment, selection, and hiring. Because the implementation of lean–kaizen in a service organisation requires the best resources (material, Human, etc.); in human resource management practices, lean-Kaizen will help improve the employees' performance through adopting standards of customer service such as listening to customers and responding to their proposals, etc. This study can be listed under the social lean because the users of public services are society members as a whole.

Moreover, this study has linked soft and hard elements of lean systems together when applying Lean-Kaizen, which includes the core and the supportive components of lean systems. In this regard, [14] have proposed five steps to Kaizen movement under the title “Improvement; the Five-step Kaizen Movement” Figure 2 below shows these steps:

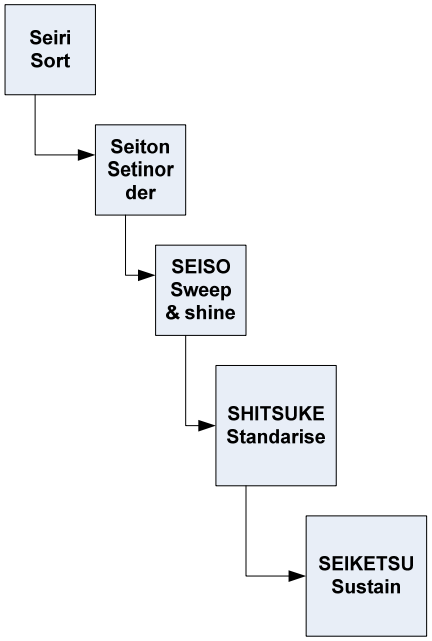


Figure 2. Five steps of Kaizen Movement [5]

From the figure above it is clearly noted that the improvement process requires improving all components of the organisation whether it is the staff, equipment, operations and processes, and corporate culture. Therefore, it becomes necessary to integrate all the lean practices whether they are core or supportive, soft or hard, and social or technical because each of them has its role in the improvement process.

To distinguish between lean strategy and other similar strategies, [11] conducted very useful research for the purposes of the current study, titled "A comparison of Lean and CMMI for services (CMMI-SVC V1.2) Best practices".

The research aims to explore the possible application of the elements of lean systems in service organisations and compare it with the lean best practices of CMMI-Svc v1.2 model (regarding goals and practices, where, CMMI is the capability maturity on Model Integration) for services.

This qualitative research was conducted by reviewing the recent literature related to concepts of lean and CMMI-Svc v1.2. The research was followed up by conducting a face-to-face questionnaire for a group of practitioners from an IT service organisation, and experts with theoretical and practical expertise.

The results showed that lean best practice in service organisations depends heavily on the core elements of the lean system. From the point of view of the researchers here, these elements are:

continuous improvement culture: continuously responding to problems, following scientific methods for improvement and implementation and involving people who do the work in the improvement activities and maybe others.

Problem-solving: providing solutions according to the problem, using quality assurance as a preventive measure, developing support systems to solve problems quickly, and creating countermeasures and many others.

Decision making: considering and evaluating all the alternatives and implementing the correct decision quickly but cautiously.

Knowledge management: accepting creative and individual feedback to improve the standard and incorporate it into the new standard, transforming individual tacit knowledge into explicit organisational knowledge through cooperation and collaboration, and other.

Technology usage: using only reliable and thoroughly tested technology to serve people and processes. Conducting tests before adopting new technology in business processes.

People development: ensuring leaders are capable of doing the job of their staff. Ensuring leaders can teach their staff problem solving according to the scientific method.

Supplier partnership: respecting partners and suppliers and treating them as an extension of the business.

Visual control: making problems transparent. Designing and developing a simple visual system in the workplace to support flow and pull.

3.1 Analysis of answers of interviewees:

The researcher has conducted semi-structured interviews with the financial manager, the dean of the student affairs and the student's registration manager in the university. The answers to question 1 were completely consistent among the interviewees, where they assured that the university leadership is always leaning towards the scientific research and incentive systems, as well as the teaching system. For question 2, delayed cases are very rare, most of them are because of the students such as delays in payment of the fees. In this case, the registration manager has the authority to give the student a specific period to pay the fees and this action demonstrates the practicing of soft lean elements in this university.

Question 3 was about idle time, and the three officials stated that they do not allow wasted time when monitoring the staff's adherence to performing their job efficiently. Additionally, the

respondents focused on on-the-job training, because this method provides the trainee with new skills on how to address potential conflicts when they occur.

Finally, one can say that the University is seriously seeking to employ the soft lean elements in improving the performance. In this regard, soft lean elements provide managers with improvement tools and methods towards continuous improvement.

References

[1] Aribjorn, Jan and Freytag, Vagn. *Evidence of Lean: A review of international Peer-reviewed journal articles*. European Business Review, vol.25, No.2, 2013, 174-205, 2013.

[2] Alsmadi, Majed; Almani, Ahmad, and Jerisat, Rula. *A Comparative Analysis of Lean Practices and Performance in the UK manufacturing and service sector firms*. Total Quality Management and Business Excellence, Volume 23, Issue 3-4, 2012, PP. 381-396, 2012.

[3] Barraza, Manuel and Ramis-Pujol, Juan. *Implementation of Lean-Kaizen in the Human Resource Service Process. A Cose Study in a Mexican Public Service Organization*. Journal of Manufacturing Technology Management, vol. 21, No. 3, 2010, PP. 388-410, 2010.

[4] Barraza, Manuel F. and Pujol, Juan Ramis. *Implementation of Leen-Kaizen in the Human Resource Service process. A Case Study in a Mexican Public Service Organization*. Journal of Manufacturing Technology Management, Vol.21, No.3, 2010, PP 388-410, 2009.

[5] Fornell, C. *The satisfied customer: Winners and Losers in the Battle for Buyer Preference*, Palgrave Macmillan, New York, NY, 2008.

[6] Al-Yaseen, H., Hourani, M., and Al-Jaghoub, S. *Success and Failure of eLearning Projects: Alignment of Vision and Reality, Change and Culture*. Journal of Emerging Trends in Computing and Information Sciences (JETcis), VOL. 3, Issue 2, 2012.

[7] Holweg, Matthias. *The Genealogy of lean Production*. Journal of Operations Management 25(2007) 420-437, 2007.

[8] Hong, Paul et al. (2010). *Integration of Supply Chain IT and lean Practice for Mass Customization. Benchmarking of Product and Service focused manufacturers, Benchmarking*. An International Journal, vol.17, No.4, 2010, PP561-592, 2010.

[9] Hopp, Wallace and Spearman, Mark. *Factory Physics*, Second Edition, Irwin, McGraw-Hill, 2001.

[10] Krafcik, J.F. *Triumph of the Lean Production system*. Solan Management Review, 30(1), 41-52, 1988.

[11] Kundu, Goutam and Manohar, B. Murali, and Bairi, Jayachandra. *A Comparison of Lean and CMMI for Services (CMMI-SVC v1.2) Best Practices*, the Asian Journal of Quality Vol.12, No.2, 2011, PP.144-166, 2011.

[12] LaGanga, Linda. *Lean service Operations: Reflections and New Directions for Capacity Expansion in Outpatient clinics*, Journal of Operation Management, 24, 422-433, 2011.

[13] Piercy, Niall and Rich, Nick. *Lean transformation in the pure Service Environment: The case of Call Service Centre*, International Journal of Operations and Production Management, vol.29, No.1, pp. 54-76, 2009.

[14] Radnor, Zoe and Boaden, Ruth. Editorial: *Lean in public Services – Panacea or Paradox*, Advanced Institute of Management Research, Available at http://www.researchgate.net/publication/4779671, 2008.

[15] Sprigg, C. and Jackson, P. *Call Centers as Lean Service Environments*. Journal of occupational health Psychology, vol. 11, No.2, PP 197-212, 2006.

[16] Wolfi, Anita. *The Service Economy in OECD*. Countries. Working Paper 2005/03. Available at: http//dxdx.doi.org/10.1787/212257000720, 2005.

[17] Womack, James P., Daniel T. Jones, and Daniel Roos, *the Machine that Changed the World: Based on the Massachusetts Institute of Technology 5- Million – Dollar 5- year study on the future of the Automobile*. Macmillan, 1990.