CHAPTER I

INTRODUCTION

1.1 Problem Statement

"Service Business" refers to the activities that one offers to another in order to fulfill the requirements either for tangibles or intangibles, for example, Retailing, Wholesaling, Education, Entertainment, Government, Healthcare and many others. As the reflections of industrial development, it has pre-dominated the post-industrial economy and recently accounts for roughly 80% of Gross Domestic Product (GDP) around the world. Even in Thailand, service industry is now playing a significant role to leverage the national productivities and competitive capabilities of the country. Service Business, therefore, is one of the most interesting subjects which should be considerably developed for excellence.

Nowadays, the competitive market extension in service business becomes most difficult because the competition will not have countries' boundaries according to the rapid development of globalization. Moreover, most of activities along the service process could not add value to the customer effectively. The human resources who have never familiar with the analysis of data are lack of knowledge and skills to apply productivity tools and techniques in order to improve their service quality successfully. Thus, the study of operations in services is very important for the proactively service providers who would like to leverage competitive advantages of the organization.

According to the widely inefficient performance of service industries, a Healthcare service provider, one of the fast growing businesses in the service sector will be used as the case study to improve the customer service operations. SERVQUAL instruments will be applied to explore where the gaps between customers' expectation and perception are situated in particular dimensions of service quality. DMAIC systematic approach will then reinforce the contribution by implementing various Lean Six Sigma techniques to improve process capabilities significantly for the organization.

1.2 Thesis Objective

To improve the customer service duration of overall medication process in the Pattana Medical Center through the approach of Lean Six Sigma

1.3 Scope and Assumption

- The thesis will study to improve the customer service duration for Reliability dimension of the total Service Quality only. By the way, all of possible improvements which may impact to the other service dimensions will be considered carefully
- The thesis will scope for the General Therapeutics medication process which starts from the admitting function (Registration) to the discharging function (Pharmacy) only. The special disease medication processes will be excluded
- The thesis will focus on the Medical Service Core Process which includes Registration, OPD, Lab, X-Ray, Finance and Pharmacy only. Any other functions in the Medical Service Support Process will be excluded except where appropriate
- The thesis will look for opportunities for improvements in the general process management only. The professional and technical concerns, for example, doctor advising period or lab testing duration will not be adjusted.
- The thesis will specify the OPD function on the second floor of Pattana Medical Center as the pilot area where the proposed improvement solutions will preliminarily implemented and inclusively evaluated throughout the research

1.4 Expected Benefit

- The overall medication process which consistently contribute satisfied service duration of the Pattana Medical Center
- The practical methodology to improve the service duration in service industry through the approach of Lean Six Sigma

1.5 Thesis Methodology

1. Preliminary Study

    a. Review all theories, researches, literatures or any documents which are related to the Service Quality, Customer Satisfaction Survey, Lean Principle, Six Sigma Approach, Lean Six Sigma Methodology, especially, in Healthcare business

    b. Study the Service Quality and Critical-To-Quality (CTQs) which could completely response to the customers' requirements in the healthcare business and all existing input and process variables that interact with customer satisfaction level

    c. Describe the most appropriate approach of Lean Six Sigma that could be implemented in the healthcare business as effective as possible

2. Define Phase

    a. Study overall medical service process of PMC from the admission point to the discharge point and create Value Stream Mapping (VSM) in order to understand process characteristics, variables and circumstances from point to point

    b. Define the service quality that needs to be improved, the customer service duration that will be specified as the appropriate target and the process boundary that will be focused throughout the research in the Project Charter

    c. Establish a cross functional team in PMC which has representatives from every function in Medical Service Core Process to conduct the improvement project

3. Measure Phase

    a. Design the specific data collection worksheet and use some of Seven QC Tools to find out both of the bottle necks and non value-added activities throughout the whole process

    b. Specify the most appropriate sampling method and procedures which could illustrate the present situation in each process and between transactional points

    c. Examine data collection process in the pilot area, improve or adjust the data collection worksheet and investigating procedure, then conduct the data collection in the real situation in order to determine the exact Process Capability

4. Analyze Phase

    a. Summarize all of specified data which has been gathered from Measure phase to deeply study relationships between the considering Key Process Output Variables (KPOVs) and the existing Key Process Input Variables (KPIVs) in different situations

    b. Apply Lean and Six Sigma tools and techniques, for example, Design of Experiments (DOE), Queuing Theory and Non Value-Added Analysis where appropriate to verify the interaction between variables

    c. Focus most of interesting KPIVs which significantly influences the accuracy and precision of KPOVs to find out the most appropriate solutions which could mitigate and eliminate variations efficiently

5. Improve Phase

    a. Identify all feasible solutions which could definitely control process variations for particular KPIVs through various techniques such Brain Storming, Poka-Yoke, Visual Control, Setup and Cycle Time Reduction, Line Balancing or even DOE

    b. Select the most appropriate solutions through Pugh Matrix or Prioritization Matrix according to different implementing criteria, for example, cost of improvement, difficulty of access, opportunity of success and duration of application

    c. Examine the process improvement protocols in the pilot area, fine-tuned or adjust improving elements and, then, conduct total improvement solutions in the real situation in order to determine the improved overall process capabilities

    d. All of improvement solutions will be clearly classified by the implementation timeframe in order to maximize contributions and benefits both for the research itself and the Pattana Medical Center

        i. The improvement solutions which could be completely implemented within the research study timeframe will be trustfully evaluated by the collected data for service duration in the pilot area

        ii. The improvement solutions which could not be completely implemented within the research study timeframe will be appropriately evaluated by the estimated data for service duration in the Pugh Matrix

6. Control Phase

    a. Monitor every improvement solution through KPOVs, optimize particular solutions which could not meet the specified target properly and replace inefficient solutions with the appropriate alternatives

    b. Standardize the appropriate solutions and cumulative best practices for the efficient improvement solutions in order to sustain KPOVs and process capability levels consistently

    c. Conduct the final customer satisfaction survey to verify that total improvement solutions could completely response to the specified Service Quality and CTQs in the healthcare business and provide final fine-tuned where appropriate

7. Summary and Recommendation

    a. Summarize overall research contributions which will have been gathered through five implementing phase of the business improvement methodology, Lean Six Sigma, for both of the Healthcare industry , itself, and the Service Industry

    b. Identify Lesson Learned in particular implementing phases; Define, Measure, Analyze, Improve and Control, and recommend the available opportunities which could be successfully fulfilled in the future improvements

    c. Collect all of essential information from the research, compile all of successful contributions to create the thesis and prepare all of required documents for the final presentation as well

Thesis Methodology	1st Month	2nd Month	3rd Month	4th Month	5th Month
1. Preliminary Study	■				
2. Define Phase	■				
3. Measure Phase		■			
4. Analyze Phase		■			
5. Improve Phase			■		
6. Control Phase				■	
7. Summary and Recommendation					■

Figure 1.1: Thesis Schedule for the Proposed Methodology