

East –West Philosophical Integration: The Practice of Lean Manufacturing in Thailand

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Abstract: *A constructivist paradigm was applied to find meaning for theory generation and to understand how to integrate East and West philosophy for Lean Manufacturing in Thailand with the collaboration of five participants who had experience implementing Lean Manufacturing. A qualitative case study research methodology was employed to answer the research questions. The researcher selected the qualitative approach and purposive sampling, in order to value the diverse approaches to understand how the approaches are adapted. Data were collected from five executives who has had experiences in American, European and Asian organizations. The researcher used manual coding and interpreted the data. The major findings of this study were constructed by providing a comprehensive description as follows: (1) What is the lean manufacturing practices in the view of a Western organization? (2) What is the lean manufacturing practices in the view of an Eastern organization? (3) What are the differences in the approaches between the West and the East? (4) What are the selected approach to be used for Thailand? (5) Why are those approaches selected? (6) How are the approaches adapted? In conclusion, the research reported in this dissertation has presented the “LEAN MANUFACTURING IMPLEMENTATION MODEL” which can be used as a guide to start or improve Lean Manufacturing execution in Thailand.*

Keywords: Lean Manufacturing, East, West, Integration

Introduction

A lean organization understands customer value and focuses its key processes to continuously increase it. The ultimate goal is to provide perfect value to the customer through a perfect value creation process that has zero waste (Wilson, 2010).

The emerging of the Chinese economy, becoming the second largest economy in the world. Within a decade from now the Chinese economy will become the biggest in the world. Combining with the current third biggest economy of Japan, Korea and the strong Indian economy. The Asian economies will be the core of the world economy.

The business paradigm will certainly shift from Western dominance to Eastern dominance. The researcher is keen to explore the possibility of the present time integration of the East and West philosophy concerning the practice of the lean manufacturing and further explore the similarities and differences of the East and the West including the Eastern world practices, and the Thai lean manufacturing practices.

To achieve such goals, many companies provide training, such as problem solving courses, technical courses or others strategies. Each strategy includes tools, working processes, and resources to support each objective. When this model is deployed it identifies practices for employees of different functions and roles. Lean Enterprises can be successful when organizations provide a suitable environment, sufficient resources, fit learning process, and so on.

Japanese, American, and European companies, all of such experiences did not matter when starting to work for a new company. Trial and Error are always needed to be performed. The objective of this paper was aimed to be practical and to find out about what it was like in

Western or Eastern companies, the types of people and concepts, how to behave, and the model to be used for the use of the Lean Manufacturing.

Purpose of the Study

To explore the integration of the concept of lean manufacturing in Thailand regarding Western and Eastern organizational practices.

Research Questions

From the purpose above, the researcher has set six research questions to answer my inquiry as follows.

- 1.4.1 What is the lean manufacturing practice in the view of a Western organization?
- 1.4.2 What is the lean manufacturing practice in the view of an Eastern organization?
- 1.4.3 What are the differences in the approaches between the West and the East?
- 1.4.4 What is the selected approach to be used for Thailand?
- 1.4.5 Why are those approaches selected?
- 1.4.6 How are the approaches adapted?

Literature Review

The literature reviewed in this chapter is a means of demonstrating the researcher's knowledge about a particular field of study. The definition of the word 'lean' and the history of it were firstly considered to be studied in order to understand the meaning of the lean manufacturing concept, specifically how it was to be used, the purposes of it, and which group of people would use it. With this process, the concept of lean manufacturing was easy to digest and became practical.

History of Lean Manufacturing, What is Lean?

Womack and Jones (2003) explained that Lean is the core idea to maximize customer value while minimizing waste. Simply, lean means creating more value for customers with fewer resources. To accomplish this, lean thinking changes the focus of management from optimizing separate technologies, assets, and vertical departments to optimizing the flow of products and services through entire value streams that flow horizontally across technologies, assets, and departments to customers. Eliminating waste along entire value streams, instead of at isolated points, creates processes that need less human effort, less space, less capital, and less time to make products and services at far less costs and with much fewer defects, compared with traditional business systems. Companies are able to respond to changing customer desires with high variety, high quality, low cost, and with very fast throughput times. Also, information management becomes much simpler and more accurate.

Toyota Motor Company was established shortly after Japan's involvement in World War II. The Japanese economy was in a depression and people were not buying cars, so Toyota had to extend itself financially to fund the company. The banks said to cut costs by laying off employees or they would shut them down. Kiichiro Toyoda, the founder of the company, handled the situation in the Toyota Way. The reaction to this crisis was to begin to formally articulate the Toyota Way and Toyota Culture.

Lean Thinking or Lean Vision

It's been more than 10 years since Womack and Jones (2003) wrote *Lean Thinking*.

The three-step thought process for guiding the implementation of lean techniques is easy to remember, but not always easy to achieve:

- 1) Specify value from the standpoint of the end customer by the product family.
- 2) Identify all the steps in the value stream for each product family, eliminating whenever possible those steps that do not create value.
- 3) Make the value-creating steps occur in tight sequence so the product will flow smoothly toward the customer.

Human Resource Management: Eastern School of Thoughts

Wejyanon (2002) explained that the trend of business competition in the international realm requires constant strategic updates within management to sustain survival. Japan is a country with high principles on the formation of a management system that's different from the Western world. In 1984-1985, the USA and many leading European countries had lost a significant share of their economy to Japan, coupled with the hazardous economic downturn in 1980-1989, these events became the trigger points for theorists around the world to turn their attention to the human resource management methods utilized in Japan which were considered as unique traits developed over experience and the long history ingrained with the distinctive culture of Japan.

These values to be versatile with changes; welcome to hard work; accepting of group responsibility; adhering to age-hierarchical systems; having high loyalty to companies; and having high teamwork ability heavily ingrained within Japanese companies are the driving forces behind Japan's outstanding economic growth in the past (Wejyanon, 2002).

Change Management

Change Management is a structured approach to lead individuals, teams and organizations from a current to a desired future state while also ensuring the fulfillment of company objectives in a sustainable way (Kotter & Cohen, 2002).

Change management is a structured approach to shift/transition individuals, teams, and organizations from a current state to a desired future state. It is an organizational process aimed at helping employees to accept and embrace changes in their current business environment. In project management, change management refers to a project management process where changes to a project are formally introduced and approved (Fullan, 2008).

Change is unavoidable if you want to survive. At the company level, to stay competitive in the marketplace equals a need for continuous change. Change can be uncomfortable and may not always bring about the initially-desired "future state" (Henderson & Larco, 2003).

Methodology

The qualitative research method was employed for this study. In this studies presented the Constructivism paradigm. The strategy was guided by the research design, case study, which was used in the study and includes case selection. The interview method with the interview process and research process are detailed below.

The research design and method for the proposed study were derived from the research objectives and research questions. The proposed research uses qualitative techniques as described below.

The constructivism paradigm led the researcher to investigate the various and multiple complexities of meanings and views from their experiences. The objective of research relied on the participants' opinions and comments from the open-ended questions in order to let researcher construct and analyze the meanings of the situation. Out of the broad open ended questions, The researcher was able to carefully observe those participants' interactions and faces within their individual backgrounds, perceptions, interpretations, and perspectives (historically, culturally, and socially) and their beliefs.

In conclusion, based on the comparison and discussion of both tables of the four worldviews and the five research strategies (Creswell, 2007), as well as the characteristics overview of the research topic and objectives, The researcher selected the case study strategy to enhance the ability of selecting and exploring through information and data for the study in order to direct the roadmap to a systematic process for the research. Yin (2003) explained that a case study has been a common research strategy in psychology, sociology, political science, and social work. In this research, Industrial plants in Thailand were selected for study. A case study is a suitable research strategy for this research. Also, a case study is employed in order to maximize the benefits of an empirical inquiry that investigated a phenomenon within its real-life context (Rossman & Rallis, 2003) and a well-executed case study makes sense of events, Processes or perspectives, which also builds an explanation for those events or outcomes.

Data Collection Tool

The in-depth interviews were the main technique that the researcher selected to implement the case study to adopt the information of the findings in order to apply the in-depth interview, informal interview, observation, and workplace reviews to explore in this case study strictly and tightly, because of the dynamic work with time pressure and limits as a nature in the manufacturing process. The researcher informally observed, reviewed, interacted, and interviewed the participants.

Selection of Participants

Finally, after reviewing the suggestions from Dawson et al. (1993) the participants for this study were selected by Purposeful selection .Purposeful selection selects those most likely to know about different aspects of the Policy Deployment method in each factory. Lastly, the interviewees were considered to be suitable for the interview session based on the researcher's work experience as mentioned. Finally, data were collected from five executives: (1) A senior manager who has had experience in American, European and Asian organizations, (2) A senior consultant who has had experience in various cultures, (3) A senior manager who has had experience in American and Asian organizations, (4) A senior Lean Manager who has had experience in Asian and American Organizations, (5) A senior Lean Implementer who has had experience in American, European and Asian organizations.

Data Collection Tools and Methods

Following Creswell's (2003) recommendation, the data collection tools in this qualitative research study were observation, interview, and document analysis, together with audio and visual record instruments. Certainly, the medium of in-depth and informal interviews were the primary resource of data collection and a review of related documents and instruments was the secondary source of information for this case study approach.

Prior to the qualitative research interview, the researcher as the interviewer recognizes that he is the primary data collection instrument to identify individual and personal abilities, values, assumptions, and biases at the beginning of the study. It reminds the researcher to be careful and use discretion for the entire research process (Miller, 1992 cited in Creswell, 2003). The researcher would use discrete questions in order to make a friendly conversation to engage the executives, the key participants enthusiasm to the data collection. The interviewer also asked a set of prepared questions and additional questions depending upon the interviewee's answers to the set questions.

Finally, the researcher conducted both informal and formal interviews depending on the participants behavior and characteristics. The interviewer also focused on remarks about their personality and companionship. However, researcher would beforehand ask for the permission and approval of all interviewees to use either the formal or informal interview.

Data Analysis and Interpretation

The methodology of qualitative research generally generates a great deal of data including documentation, interviews, and observations that researcher analyzes with data analysis and then interprets after data have been collected (Creswell, 2003).

After listening carefully through the data recordings, the information were Transcribed from recorder to computer files. And after reading carefully through the soft files the information was analyzed and transformed from Thai to English. When repeated all readings for analyzing, transforming, and reducing the whole information findings in order to confirm the real meanings of data collection. Then began to categorize by coding the information to the model used for the next step of data analysis. Organize an appropriate design of the clear code identification to be undertaken. Then the researcher started coding all data descriptions for analysis. Generate data clearly and categorize with themes, then manual re-code from the first codes to convey findings of analysis. In this step sometimes, researcher have to do more literature review for efficient information. Map and interpret the meaning of all information into a context to explain the findings.

Findings from Interviewing

What is the selected approach to be used for Thailand?

Balance is the Key

Balance is the key in implementing lean manufacturing practices in an organization. Although the result-oriented approach is clear and transparent, it is not sustainable. Meanwhile, the process-oriented approach alone cannot lead an organization to achieve its objectives. Accordingly, balance should be emphasized and adopted. In addition, a clear objective with an appropriate performance indicator will facilitate the follow-up process and development, as well as enhance the efficiency. The development of process or the process-oriented approach enables a sustainable development. The establishment of standards to support such development is therefore a key element.



Recommendations for Application and Implementation

Upon the evaluation of results obtained from the research, the researcher would like to propose a model that integrates the eastern and western principles, in order to implement lean manufacturing in Thailand, as follows:

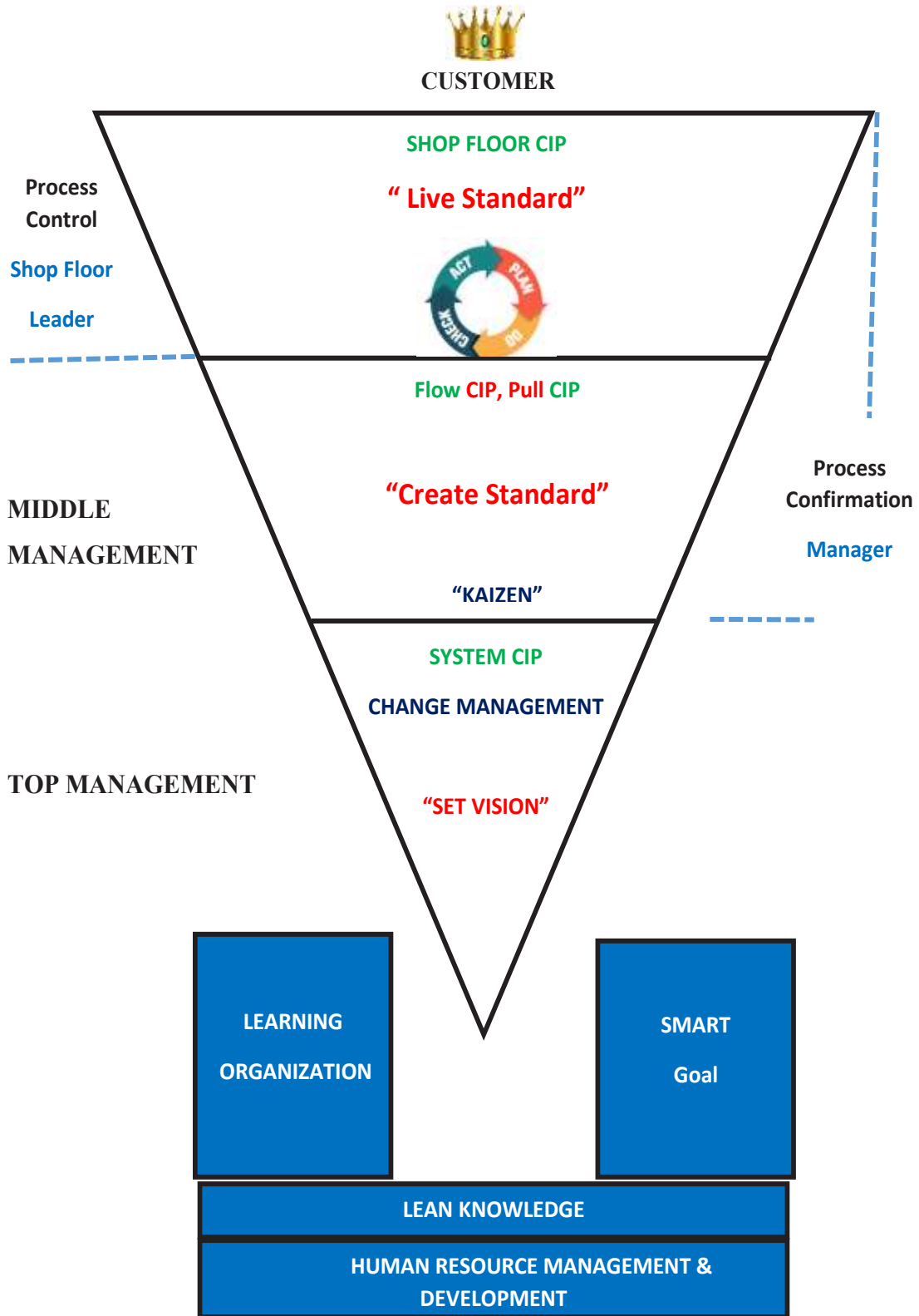


Figure Lean Manufacturing Implementation Model

Top Management

According to the TQM model, it can be inferred that top management should not be the sole decision maker or give orders to lower management. In other words, the organization should no longer adopt the top down management approach. Rather, the top management or senior-level executives should act as supporters. Indeed, the most important role of top management is to set a vision and determine the direction of the organization. With such an approach, lower management will be able to work with greater confidence and efficiency. Another role that should be subsequently performed by top management is to emphasize on change management.

Undoubtedly, the majority of people do not want to change. However, it is likely impossible to enhance performance or productivity without any changes. Therefore, in the initial stage of change, top management should have high stability in their own principles or vision, as well as provide the appropriate support that corresponds to the rising change of the organization.

Middle Management

Middle management refers to managers in a middle level, such as general managers, department managers, or heads of various divisions. The important role of middle management is to create a standard. In other words, if a particular activity is found to provide benefits to the organization, such activity should have an established standard in order to be adopted by employees. Regardless of the time, these standards must be able to be implemented in the organization with efficiency and sustainability.

The establishment of standards may emerge from the tacit knowledge of employees that are conveyed in the form of a report, work instruction, or manual. It may also result from the experience of learning from mistakes, which is recorded in a lesson learned report to prevent the recurrence of such mistakes.

Once the standard has been established, another important role of middle management is to engage in continuous development (Kaizen). Middle management must consistently examine whether the processes under their own responsibility are smoothly operated or not. If there are any obstacles in the process, middle management should correct and modify them to ensure that such process flows smoothly. In addition, one of the most significant roles of middle management is to consistently examine and observe whether the processes under their responsibility is a pull or push system; whereby, they should try to adopt the pull system as much as possible.

After various systems have been established and developed, middle management must inspect and monitor the employees, whether they are in compliance with the standard or not. Likewise, middle management must also monitor other related units to ensure that they conform to the specified standards in order to collaboratively develop the organization.

Shop Floor Management

Shop floor management includes employees all the way to supervisors, foreman, and shift leaders, which must be in a number appropriate to the number of subordinates to ensure thorough and efficient supervision. The leader should be responsible for monitoring the process to be in accordance with the standard stipulated by middle management. In other words, the leader must maintain the standard and ensure that such standard is implemented. One of the important roles of a leader is to motivate or promote team members to continuously develop various systems (shop floor CIP), with the means to correspond to consumer demand and make customers satisfied with the products and services of the organization.

Supporting Factors for the Development of Lean Organization

Smart goal originates from the western principle, which is implemented in an organization to ensure that employees or members of the organization have clear goals. In addition, KPI is used to evaluate the performance, which enables employees to acknowledge their own roles or responsibilities. Thus, the strengths or weaknesses of a team can be easily evaluated.

Learning organization is an organization that creates a channel for the transfer of knowledge between employees, as well as for receiving knowledge from the outside. The primary objective is to facilitate the process of identifying the best practice, leading to the development and establishment of core competence of the organization. Such approach will enable the organization to adapt to the consistent changes in the global society. In order to develop the organization into a learning organization, the following principles should and must be incorporated:

Management should promote experimentation, examination, and constructive feedback, as well as accept mistakes and identify solutions.

Employees should collect information and use such information to provide constructive feedback.

Customers are part of the relationships in educating/learning through the use of open and continuous conversations.

These changes will become part of the processes of examining, identifying hypotheses, experimenting, and creating experiences for the organization. Once the organization has identified its own problems or flaws in any aspect, it would want to seek additional knowledge regarding such aspect and transfer the acquired knowledge to all levels of personnel through training.

Lean Knowledge

The lean management system refers to the addition of values for customers while reducing waste. To put simply, the lean system means adding value for customers with less resources. The ultimate goal of lean management is to provide value for customers using a perfect method that eliminates waste throughout the value chain, instead of doing it separately. Such approach requires less effort, labor, space, capital, and time in manufacturing products and services, with lower costs and wastes as compared to the traditional management system.

Human Resource Management & Human Resource Development

Knowledge regarding human resource management must be utilized appropriately, from recruitment, development, retention, utilization, management, and development. Indeed, human resource development will enable the organization to develop and improve with stability and efficiency.

Recommendations for Further Study

This study on the identification of methods of integrating western and eastern (specifically Japan) management yielded satisfactory and highly beneficial results, which can be used as a guideline to develop, implement or improve the lean manufacturing system, or as a practice guideline for the executives or management to implement various modern practices as deemed appropriate to the organization. The research findings were obtained from the interview, study, and collection of actual data from specialists who were in a top management with experience in implementing and managing a lean manufacturing system in organizations that had already adopted the system. In addition, some of these specialists have experience in

implementing lean manufacturing in organizations that never adopted the system before. All of the obtained data were systematically filtered and analyzed according to the research methodology.

Although there are various strengths, there are also some weaknesses in the study. Considering the fact that there were five interviewees, and as mentioned above, these interviewees were from middle to top management, it is undoubted that their perspectives were considerably broad and acute, with a somewhat systematic reference to the theories. Indeed, broad perspectives from senior-level management may result in a lack of in-depth information and suavity, as compared to perspectives from blue-collar employees who actually executed the system. The research accepted the fact that the findings may in fact lack that kind of information. Furthermore, the study did not emphasize on the perspectives of the owner of the organization regarding their intended direction for implementing the lean manufacturing system.

The research findings can be used as a guideline for managing the organization in the future, not solely limited to organizations that intend to implement lean manufacturing. Rather, any other theories or beliefs can be applied into the organization. Regardless of the changes or improvements in any work process, the most important and difficult element is changing people.

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