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**MANAGING CHANGE IN LEAN TRANSITION AMONG
MALAYSIAN PUBLIC SERVICE ORGANIZATIONS**



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UUM
Universiti Utara Malaysia

**DOCTOR OF PHILOSOPHY
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**MANAGING CHANGE IN LEAN TRANSITION AMONG MALAYSIAN
PUBLIC SERVICE ORGANIZATIONS**

By

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Kolej Perniagaan
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ABSTRACT

The Malaysian government stresses on the public service transformation that requires change of mindset among civil servants for high- performance services to customers. However, weaknesses in the process and service delivery have affected the expectations of customers. Lean management is believed to assist public service organizations in improving their productivity and fulfil the needs of the public. The objectives of the study were to identify the challenges faced by the public service organizations during the transition to lean, to investigate the success factor of lean implementation in public service organizations, to investigate the management of public service organizations during transition into Lean management implementation, and also to develop a framework of change management in lean implementation. The study employed qualitative research using the case study method. The methods of data collection used were interviews, document reviews and observation which were conducted in five public service organizations in Malaysia. The data were analysed using Atlas. ti software. Four challenges faced by the public service organizations were identified based on the data analysis. The challenges were resistance, knowledge, time and resource. Seven success factors for lean implementation in public service were also identified, which were management commitment, employee involvement, communication, knowledge, teamwork, organization readiness and culture. Besides, three important elements in managing change were identified, which were training, monitoring and motivation. The study also revealed the process or the steps taken in lean implementation. The result of the study can benefit many other public service organizations that are interested in implementing lean management. Therefore, it is hoped that future studies will focus on the change management framework developed, and refer to the steps taken by the case organizations in order to successfully change into lean management for continuous lean service implementation in their operations.

Keywords: Lean implementation, public service organizations, change management, qualitative study, Malaysia.

ABSTRAK

Kerajaan Malaysia menekankan transformasi perkhidmatan awam yang memerlukan perubahan minda bagi semua penjawat awam untuk menyediakan perkhidmatan yang berprestasi tinggi di luar jangkaan pelanggan. Walau bagaimanapun, kelemahan yang wujud dalam proses dan penyampaian perkhidmatan dalam perkhidmatan awam Malaysia telah memberikan banyak kesan kepada para pelanggan. Pengurusan Lean dipercayai telah membantu organisasi perkhidmatan awam untuk meningkatkan produktiviti mereka dan memenuhi keperluan orang ramai. Objektif kajian ini adalah untuk mengenal pasti cabaran yang dihadapi oleh organisasi perkhidmatan awam semasa peralihan kepada Lean, menyiasat faktor kejayaan pelaksanaan Lean dalam organisasi perkhidmatan awam, menyiasat cara organisasi perkhidmatan awam di Malaysia menguruskan peralihan ke pelaksanaan pengurusan Lean, dan membangunkan rangka kerja pengurusan perubahan dalam pelaksanaan Lean di sektor perkhidmatan awam. Kajian ini merupakan kajian kualitatif menggunakan kaedah kajian kes. Kaedah pengumpulan data yang digunakan adalah wawancara, ulasan dokumen dan pemerhatian, yang dijalankan terhadap lima buah organisasi perkhidmatan awam di Malaysia. Data dianalisis menggunakan perisian Atlas. ti. Melalui analisis data, empat cabaran yang dihadapi oleh organisasi perkhidmatan awam telah dikenalpasti. Cabaran tersebut adalah rintangan, pengetahuan, masa dan sumber. Tujuh faktor kejayaan pelaksanaan Lean dalam perkhidmatan awam yang telah juga dikenal pasti adalah komitmen pengurusan, penglibatan pekerja, komunikasi, pengetahuan, kerja berpasukan, kesediaan organisasi dan budaya. Selain itu, tiga elemen penting dalam menguruskan perubahan telah dikenal pasti, iaitu latihan, pemantauan dan motivasi. Kajian ini juga menunjukkan proses atau langkah-langkah yang diambil dalam pelaksanaan Lean. Hasil kajian ini boleh memberi manfaat kepada organisasi perkhidmatan awam yang lain yang berminat untuk melaksanakan pengurusan Lean. Oleh itu, adalah diharapkan bahawa mereka boleh memberi tumpuan kepada rangka kerja pengurusan perubahan yang telah dibangunkan dan merujuk kepada langkah-langkah yang diambil oleh organisasi kes untuk berjaya berubah kepada pengurusan Lean dan memastikan pelaksanaan perkhidmatan Lean berterusan dalam operasi mereka.

Kata Kunci: Pelaksanaan Lean, organisasi perkhidmatan awam, pengurusan perubahan, kajian kualitatif, Malaysia.

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LIST OF ABBREVIATIONS

TPS	Toyota Production System
MPC	Malaysia Productivity Corporation
MITI	Ministry of International Trade and Industries
MAMPU	Malaysian Administrative Modernisation and Management Planning Unit
DBKU	Dewan Bandaraya Kuching Utara
PDT	Pejabat Daerah dan Tanah
MPK	Majlis Perbandaran Kuantan
PKNP	Perbadanan Kemajuan Negeri Pahang
MBSA	Majlis Bandaraya Shah Alam
VSM	Value Stream Mapping
BPR	Business Process Re-engineering
ICC	Innovative and Creative Circle



CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter introduces the background of the study, describes the statement of the problem and lists out the research questions and research objectives, followed by the significance of the study and the scope of study. The chapter is concluded by presenting the organization of the report.

1.2 Background of the Study

Many organizations in different industries and sectors around the world have been trying to adopt lean principles to create values for customers and optimizing the resources. Lean is a management philosophy focused on identifying and eliminating waste throughout a product's value stream, extending not only within the organization but also along the company's supply chain network (Scherrer-Rathje, Boyle, & Deflorin, 2009). Lean principle originated from Toyota Production System (TPS) was developed in Japan by Ohno during 1950s. The Toyota Production System was based on the aspiration to produce in a continuous flow without relying on long production runs to be efficient. It was based on the recognition that only a small fraction of the total time and effort to process a product that add value to end customer (Melton, 2005). Karim & Arif-Uz-Zaman (2013) proposed the meaning of lean as activities performed to minimize waste and non-value added operations while improving the value-added process. Many manufacturing companies are adopting this concept because the benefits of implementing lean manufacturing are highly significant. The implementation of lean manufacturing reduces lead time, has less

rework, provides financial saving, increases process understanding, reduces inventory and decreases process waste (Melton, 2005). Furthermore, it incorporates less human effort, maximizes productivity and enhances quality (Forza, 1996; Karim & Arif-Uz-Zaman, 2013).

Lean is an improvement initiative that has attracted service sector to apply its unique principle in its operation (Hamid, 2011). Implementation of lean in service sectors also shows many benefits. Radnor, Walley, Stephens, and Bucci (2006) have proven that implementation of lean in the service sector has improved the flow of process, reduce waste and add value for customers. The researchers that study the implementation of lean in service sector identified many benefits such as faster speed (Almehareb & Graham-Jones, 2010; Radnor & Osborne, 2013), reduces cost (Almehareb & Graham-Jones, 2010; Piercy & Rich, 2009b; Radnor & Osborne, 2013; Waterman & McCue, 2012), improves quality (Piercy & Rich, 2009b; Radnor & Osborne, 2013; Waterman & McCue, 2012) and increases customer satisfaction (Almehareb & Graham-Jones, 2010; Radnor & Osborne, 2013; Waterman & McCue, 2012).

Besides, lean also provide other benefits in the public service sector, which are increasing employees motivation and satisfaction (Pedersen & Huniche, 2011; Puvanasvaran, 2011; Radnor & Osborne, 2013) and improve teamwork (Almehareb & Graham-Jones, 2010; Puvanasvaran, 2011). While manufacturing sector has been widely implementing lean in their operation, the application of lean in the service sector is still new (Piercy & Rich, 2009a). Both private and public service sectors have to improve the service operations for customers.

Among the services, 'Government Services' was focused as it contributes to the highest percentage of service gross domestic product in 2012 at 7.9%. This is followed by finance (7.3%), wholesale trade (6.4%), retail trade (6.2%), real estate and business services (5.3%), other services (4.9%), communication (3.8%), transport and storage (3.6%), insurance (2.3%), motor vehicle (2.1%), electricity and gas (2.0%), restaurants(1.8%), accommodation (0.7%) and water (0.4%) (Department of Statistics Malaysia, 2014).

Despite the importance of the service sector in the Malaysian economy and its influence on daily life, the productivity growth of this sector is lower than the manufacturing sector. In 2012, the productivity of the service sector increased by 1.8% while the productivity of the manufacturing sector increased by 4.5% (Malaysia Productivity Corporation, 2013b). Issues pertaining productivity of services has been debated as the services rendered differ significantly (Carlborg, Kindström, & Kowalkowski, 2013). Public service organizations are often deemed to improve competency and deliver quality services to their customer (Agus, Barker, & Kandampully, 2007). As the biggest employer, the government must be efficient in offering services by increasing the quality and productivity of civil servants in providing services to customers, as well as the high cost of management expenses.

According to Radnor and Osborne (2013), the true effectiveness transpire when public services focuses on the need of end-users and adds value to their lives. The implementation of lean by public organizations is believed to improve the quality of service provided, and achieving customer's expectation. The implementation of lean among public service organizations in Malaysia have proved to provide a positive

impact on the organizations in terms of reducing the operation cost and improving the service of delivery systems (Malaysia Productivity Corporation, 2013a). Lean management provides a faster service delivery, efficient operation and reduction of operation cost (Kuantan Municipal Council, 2013). Besides, it also improves the system and work processes, and therefore reduces the waste and labour usage. Public service organizations are able to determine the implementation of the lean concept in their operation, and the success of lean implementation is presumed to improve the public service delivery and satisfy the needs of end-users.

Employees of the public service organization need to find ways to improve their work, becoming proactive by increasing skills and knowledge as the employees have a huge responsibility to deliver quality services to the public. In order to meet these increasing demands with lack of resources, managers in public sector introduce lean in their organization as lean is about 'do more with less' (Pedersen & Huniche, 2011). Lean thinking differs from other approaches because lean also focuses on understanding the philosophy of lean thinking, by continuously finding ways to reduce waste and increase customer satisfaction by adopting the application of the relevant tools and technique (Radnor & Osborne, 2013; Schiele & McCue, 2011). The lean philosophy should be embedded in every manager's and employee's minds for a continuous improvement (Hamid, 2011; Puvanasvaran, 2011). The implementation of lean manufacturing concept in service is beneficial as it is transferred according to the condition and nature of service environment especially the public service, which has its own seated culture. The focus should be given on the change process so that everyone can accept the change into lean and will continuously improve in their daily works.

1.3 Problem Statement

The global and domestic challenges along with the increase in public aspiration require the need toward for public sector transformation to provide world- class services (Malaysian Administrative Modernisation and Management Planning Unit, 2009). However, internal challenges in the Malaysian public service such as power centred, bureaucracy, reporting hierarchy, low strategic competency, lack of mentoring and coaching, comfortable with existing condition, less responsive and fewer sensitive and low level consultations restrict the public sector transformation effort (Public Service Department of Malaysia, 2013). Besides, the increase in expectation and need of Malaysians is one of the internal challenges which has to be fulfilled (Public Service Department of Malaysia, 2013).

The Malaysian government stressed on the reform which requires the mindset change of civil servants to provide the high-performance services beyond the expectation of customers (Malaysian Administrative Modernisation and Management Planning Unit, 2009). However, the weaknesses that exist in the process and service delivery of the Malaysian public services has impacted customers, such as long queues, customers to return several times for the service process to be completed, uncertainty of outcome, excessive control (gatekeepers), requests for too much information, service is based “at mercy” - not at the people’s rights for services/ service based on meritocracy, and the need for discretion in many affairs (Malaysian Administrative Modernisation and Management Planning Unit, 2013). Based on the complaints statistic by the Public Complaints Bureau in 2014, there are a high number of complaints recorded towards the public organizations pertaining the performance of Malaysian public service. Among the complaints, 2739 complaints recorded were on

the lateness/ lack of action taken, and 817 number of complaints on unsatisfactory service quality provided at service counters and through phone calls (Public Complaints Bureau, 2015). The ability of the public service to provide quality services need to be increased. This requires the public service to increase their productivity and service effectiveness in order to face the challenges in the national development.

Lean is believed to overcome the productivity issue in public service based on the benefits that has been obtained by other public service organizations around the world such as in Swedish Migration Board which showed that average application processing time reduced by more than 50% (Gebre et al.,2012). Lean techniques has also benefited UK government offices such as double-digit productivity gains in term of number of documents processes per hour, reduce lead time from 40 to 12 days, and increase the correct document processed for first time by 30% (Bhatia and Drew, 2006). Besides, the Planning & Environmental Department in one of local authorities in Scotland has reduced the average time taken to register planning application from five days to two days. While an improved number of telephone calls answered in Scottish Public organization were recorded from 35% to 85% and the contact centre able to answer the call queries from 56% to 65% without passing the caller (Radnor at al.,2006).

However, public service companies also encounter many problems and challenges since the beginning of the implementation such as to focus on lean tool workshop but lack of understanding on the key principle and the impact of public sector culture (Radnor & Osborne, 2013). Besides, the challenge experienced by the public sector

is the aspect of managing resources for a new change program due to the inability of managers who lack skills, experiences and the right mind-set to undertake the approach (Bhatia & Drew, 2006). The study done in Scottish public sector by Radnor, Walley, Stephen and Bucci (2006) highlights the factors that inhibits the change into lean from materialising, are resistance to change from staff and management, lack of management commitment, lack of ownership, lack of resources to implement changes and slow natural pace of change in public sector.

Another issue in lean transformation is pertaining the transfer of lean thinking to the organization. In a study by Pedersen and Huniche (2011), it was found that knowledge sharing between departments is limited and lacks an overall strategy to implement lean. Furthermore, the employees were also unaware of the purpose of chosen to undergo the transformation process. When this situation occurred, they were not motivated to contribute full participation, as they were unaware on the motive and benefit of lean implementation. Leaders must have the courage to push the change agenda forward and demonstrate the way to embrace change since change is about meeting and dealing with resistance (Adam, 2011).

Recently, the implementation of lean in the service sector has also gained attention by previous researchers. Although more service organizations are interested to adopt the lean principle in their operation, research on lean service are still in the infancy stage (Malmbrandt & Ahlstrom, 2013). Several studies were done on lean in few areas of service sectors such as in municipality service (Arlbjørn, Freytag, & de Haas, 2011; Tang, Miao, & Xi, 2010), financial service (Piercy & Rich, 2009b), airport (Almehareb & Graham-Jones, 2010), hotel (Vlachos & Bogdanovic, 2013)

and healthcare (Chan, 2012; Shazali, Habidin, Ali, Khaidir, & Jamaludin, 2013). Those studies focused on application of lean practices or improvement techniques in certain service sector and the suitability of lean adoption on the sectors involved. The studies did not focus on the aspect of managing changes in transition to lean.

Prior studies have highlighted the problems to begin the lean implementation in public sector (Pedersen & Huniche, 2011), however, the extent on how to solve and manage the transition is less evident. The study on lean implementation in Malaysia's public sector is almost absent. This may be due to only small number of public service organizations in Malaysia that have implemented lean management and the implementation of lean management in public service is still new. Based on the record from MPC, only 32 government organizations have implemented lean, and these are the organizations that have received lean training from MPC and completed the system development program for lean management conducted by MPC. As previously stressed, the aspect of managing change during transition stage is important to ensure the successful implementation of lean. Therefore, this research attempts to explore on change management for lean transition in Malaysian Public Service Organizations.

1.4 Research Questions

There are three research questions to be answered in this research which are:

- 1) What are the challenges experienced by the public service organizations during transition to lean?
- 2) What are the critical success factors in implementing lean in public service organizations?
- 3) How do the public service organizations manage the changes in lean transition?

1.5 Research Objectives

The study aims to achieve these four objectives which are:

- 1) To identify challenges faced by the public service organizations during transition to lean.
- 2) To investigate the success factors of lean implementation in public service organizations
- 3) To investigate ways the public service organizations manage the changes in lean transition.
- 4) To develop a framework for managing change in lean transition in the public service sector.

1.6 Significance of the Study

This study is significant both theoretically and practically. This study immensely contribute to the body of knowledge by integrating the change management and lean service implementation success. The issue of managing change during lean transition

in lean is not fully explored especially in the public service sector. Therefore, the framework developed from this study can be used as the guidelines for the practitioners who want to implement lean management in their service operation. This framework will benefit managers in service organization, especially in public organizations that are interested to implement lean management, specifically considering the aspects involved in managing the change during transition before fully implementing lean to avoid resistance and ensuring that lean can be successfully implemented.

1.7 Scope of the Study

The study focuses on managing the change during transition phase of lean implementation in the public service. Public service is services provided by government organizations. It is limited to public service organizations in Malaysia that have implemented lean management in their operation. The study focuses on ways the organizations manage the changes during transition to lean by understanding their change process used. The types of organizations chosen are government organizations that have received recognition of excellence in lean management by MPC.

1.8 Organization of the Report

This thesis consists of six chapters. Chapter One provides information regarding the background of the study, problem statement, research questions and objectives, scope and significance of the study. While Chapter Two explains about the lean management in terms of background, concept, principles and barriers in lean implementation. Besides, this chapter mainly covers the aspect of change

management. Chapter Three explains the research design, instruments, data collection method, sampling technique and data analysis technique employed in the study. Chapter Four displays the result from data analysis along with the interpretation of the findings while Chapter Five discusses the overall findings along with the support from previous researchers. The new revised framework is also discussed in the chapter. Finally, chapter six concludes the study and provides some recommendations for further research.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the review on lean implementation by explaining the concept and principles, reviewing the implementation of lean in service context and identifying the problems and barriers in implementation. It is then followed with the factors for successful lean implementation that have been identified and will be incorporated in the proposed conceptual model in the next chapter. The last part of the chapter reviews on the aspect of managing change, which includes the change management models that relate to the study of lean.

2.2 Introduction to Lean Concept

Lean is a well-known concept mostly applied in developed countries such as the United State, United Kingdom, German and Italy, as well as in developing countries such as Mexico, China and India (Ghosh, 2013). Lean manufacturing has been implemented not only in automotive but also in many types of industries either a big or small organization (Ghosh, 2013). Lean has been mainly used to improve the process in manufacturing since the last two decades and now there is an increase of lean application in various service processes as well (Alsmadi, Almani, & Jerisat, 2012). According to Piercy and Rich (2009b), the first application of lean practices outside the manufacturing floor is in the supply-chain management. Then, the lean practices have been widened into all industrial sectors and in retail sectors, and followed by other service sectors such as in banks, call centres, IT and healthcare (Alsmadi et al., 2012). Due to the growing pressure to increase effectiveness,

efficiency and equity on public services across the western world, the public services' sectors and local government have also decided to implement lean in their process (Radnor & Osborne, 2013).

Japanese have been practicing three basic ideas of lean manufacturing, which are elimination of waste, cost reduction and employee empowerment (Ohno, 1988). The objectives of lean are to reduce human effort, inventory, time, space and cost in order to produce high-quality product to fulfil customer's demand (Chauhan & Singh, 2012). Shah and Ward (2007) define lean as “an integrated socio-technical system whose main objective is to eliminate waste by concurrently reducing or minimizing supplier, customer, and internal variability.” While Worley (2004) defines lean as the systematic removal of waste by all members within the organization from all areas along the value stream. Waste specifically means any activity that absorbs resources but creates no value (Chauhan & Singh, 2012). The value stream comprise of activities that contribute to the transformation of a product from raw material to finished product, including design, order taking, and physical manufacture (Womack & Jones, 1996). Based on the lean definitions discussed earlier, the study defines lean as systematic activities performed by improving value and eliminating non-added value process in the entire value stream to fulfil customer demand.

2.2.1 Lean Philosophy and Principles

The concept of Lean is based on two values, which are respect for people and continuous improvement. The value respect for people posits that the term ‘people’ is referred by Toyota includes employees, customers, investors, suppliers, dealers, communities and society. The sub-categories of respect for people are “respect”

which means respecting and understanding each other while being responsible and provide optimum effort to build trust, and “teamwork” which means stimulating growth and sharing opportunities for development while maximizing individual and team performance (Liker & Hoseus, 2008). The second value which is Continuous Improvements is about always improving the business operation continuously by including best ideas and efforts. Implementation of Lean requires an organization to continually improve in reducing and eliminating waste.

Lean describes three categories of wasteful practices, which are Mura, Muri and Muda. Mura (unevenness) occurs when there is work fluctuation or variations that cause wasteful resources such as cost of rework, overtime and testing (Damrath, 2012). Muri (overdoing) refers to the demand and design of work that is difficult to do and causes difficulty to people and equipment while Muda (waste) is derived from the non-value added activities (Damrath, 2012). Besides focusing on continuous improvement, the leaders in Toyota believe that investment in its people is the key of success. Lean is not just a set of tools and techniques but at its heart are the people (Ohno, 1988; Saurin, Marodin, & Ribeiro, 2011). According to Liker & Hoseus (2008), “The way people think and behave is deeply rooted in the company’s philosophy and its principles.” It is important to reach a conducive culture before focusing on lean techniques (Bhasin, 2012b).

To summarize, the focus of lean manufacturing that has been implemented by Japanese is to eliminate waste, optimize resources, and fulfil customer requirement. In implementing lean, there are two important values in the philosophy, which are respect for people and continuous improvement. People are believed to be the key for

successful lean implementation because lean is not about the tools and technique, but it is on the heart and mind of the people that play the role to implement it. The right lean culture should be developed within the whole organization before the implementation so that everyone supports and are involved in the implementation. Thus, it can be concluded that the lean philosophies are based on three important aspects, which are waste removal, resource optimization and establishment of right culture in order to continuously improve and satisfying customer's need.

From the manufacturing context, the use of lean concept is widened into the service context. The philosophy and principle that explained in this section are about lean manufacturing since it was originated in manufacturing context. Thus, the next section explains about lean in the service context, which consists of the development of lean in service, lean principles in service, and the comparison between lean in service and manufacturing. Finally, the problems and barriers in implementing lean in service are discussed.

2.3 Lean in Service Context

In 1972, Levitt started to recognize that manufacturing practices has potential to be adopted and applied in service sector (Crawford, 2012; Suárez-Barraza, Smith, & Dahlggaard-Park, 2012). During the 1980s, the large comparison in terms of quality and productivity between Japanese and western was been observed in the automotive sector. This scenario had led the International Motor Vehicle Program in Massachusetts Institute of Technology to conduct an investigation on the Japanese management system in which it showed that the Japanese automotive manufacturer produces the higher quality products at a lower cost (Piercy & Rich, 2009b). This is

due to the approach used by Toyota, which is further referred as lean production and lean thinking (Dahlgard & Dahlgard-Park, 2006). Around 1990s, as lean manufacturing became more popular, efforts had been made to expose examples of lean method used in service and the term 'lean service' was used in literature (Suarez-Barraza et al, 2012). Qu, Ma and Zhang (2011) define lean service as the application of lean thinking in the service industry. The process that is not producing a change in physical properties and shape of materials is considered as a service process (Wei, 2009). Lean service is required to eliminate the service process waste so that the cost can be reduced, and better services can be provided as required by the customers (Qu et al., 2011).

The suitability of lean manufacturing to be used in other functional areas is evident in logistics and supply chain (Arlbjorn, 2011). Since the mid of 1990s, global retail supply chains were using lean tools such as value stream mapping and problem solving in their operation (Piercy & Rich, 2009a, 2009b). The application of lean concept has been extended across organization from lean development, procurement and manufacturing to lean distribution (Arlbjørn & Freytag, 2013).

The extensions of lean outside shop floor into the service area were in administration area in which involves accounting, quotation, sales and human resource (Piercy & Rich, 2009b). During the 20th century, public service sectors have also applied and used tools from lean manufacturing in their operations (Seddon & Donovan, 2010). Besides handling commercial products, lean service has shifted into handling patients in healthcare (Piercy & Rich, 2009a, 2009b). Although the lean approach in the service context has been applied over several years, mostly it has been applied in the

service organization that involve physical product as in retail supply chain and healthcare, thus, less application is proven in pure-service environment (Piercy & Rich, 2009b).

There are several factors that drive service sector to apply lean principles in their operation which are the increased demand for cost reduction, improving quality of services delivered, resource utilization and improving service productivity (Piercy & Rich, 2009a, 2009b; Radnor & Osborne, 2013). Lean differs from other approaches because lean is not only as simple as just adopting the tools, but it is about understanding the philosophy of lean thinking which continuously find ways to reduce waste and increase customer satisfaction along with the application of tools and technique (Radnor & Osborne, 2013; Schiele & McCue, 2011). Lean philosophy emphasizes on meeting customer's need, and to fulfil the needs; government agencies have to give full effort to eliminate waste to save cost, improve quality and improve efficiency of service (Waterman & McCue, 2012).

Womack and Jones (1996) have discussed five principles of Lean thinking. The principles of lean can be applied not only in manufacturing but also in the service context. The five principles (Abdi, Shavarini, Hoseini, & Mohammad, 2006; Carlborg et al., 2013; Damrath, 2012) are as follows:

- i. Value - specifying and identifying the value to be delivered to the customers according to their needs.
- ii. Value Stream – defining and optimizing value chain by identifying all activities that add value, and activities that add no value , both avoidable and non-avoidable.

- iii. Flow – although the services are unable to be seen as a flow of physical product but the principle of flow can be used in terms of produce a flow of the service process by minimizing stoppage and delay.
- iv. Pull - responding and providing service based on customer's demand. Most of the services cannot be provided before request by customer.
- v. Perfection – striving and pursuing for perfection to obtain service excellence by continuously improve and fulfilling customer's need.

Service environment also produces wastes, which can also be divided into seven types of waste (Damrath, 2012):

- i. Overproduction - outputs of service produced exceed current need
- ii. Waiting - delay on completing service output
- iii. Motion – unnecessary movement of people in service areas with a poor layout
- iv. Over processing – adding unneeded procedures on service processes
- v. Inventories – excess work-in-process such as queues and pending request
- vi. Transport - unnecessary movement of material and information
- vii. Defect/ Error – mistake in any service processes such as error in data entry

There are seven types of waste highlighted by Toyota Production System (TPS) to be reduced by an organization applying lean principles, which are overproduction, waiting, motion, over processing, inventories, transport and defects/errors (Damrath, 2012). Study by Qu et al. (2011) provided some example of waste that occurs in the service context. A complex process design such as unnecessary procedures is one of the service process wastes that will contribute to low work efficiency. Meanwhile, a

condition where the customers and the service provider wait for a process to be completed is called service waiting waste, which may occur due to delay in upstream work, insufficient staff and technology, and malfunction equipment. Although the service context is different compared to manufacturing, during implementing of lean, the principles of lean are still the same and applicable to service such as waste identification and waste elimination by all staffs and fulfilling customer's need (Damrath, 2012). Faster responses and timely feedback are the demand from the customers, which need to be fulfilled by the service organization (Qu et al., 2011). The selection of lean to be used in the service sector is an appropriate choice since it is in accordance with the core of lean that is satisfying customer's need.

The concept of lean manufacturing has been proved to be widely applied in many service organizations (Arbjørn et al., 2011). Although the natures of manufacturing and service are different, there are only few differences in terms of lean application in both setting such as in term of standardization of work and process. Similarities were found in term of applying the lean concept and principles. The similarities and differences between manufacturing and service are compared and shown in Table 2.1.

Table 2.1
Comparison between Lean Manufacturing and Lean Service

	Lean manufacturing	Lean service
Differences	<ul style="list-style-type: none"> • Customers normally do not see the process of producing the product • Inventory is mostly in form of physical material • Standardized work of operators • Production processes easy to standardize. 	<ul style="list-style-type: none"> • The customers usually are present during the service process • The inventory is not limited to physical material but also in form of virtual such as reservation and request • Workers perform multi type of work process • Difficult to standardized the service process and fix the exact time required for each process to be accomplished
Similarities	<ul style="list-style-type: none"> • Applying ' Pull 'principle in manufacturing by producing the product before the order is placed based on customer's demand. • Most of the services cannot be provided before the customer request thus it follows the ' Pull ' principle • Product flows smoothly along value stream in the production line without defect and interruption. • Although the services are unable to be seen as a physical product but the principle of flow can be used in terms of produce a flowof the service process • Eliminate waste and fulfil customers' needs 	

Table 2.1 above compares the differences between lean manufacturing and lean service as well as displaying the similarities between those two types of lean implementation. The differences are in terms of its process and operation such as the process of producing the output usually can be seen by customer in service but not in manufacturing, the inventory for manufacturing is in form of physical material but mostly virtual in service, and the standardization of work is easier in lean manufacturing. The similarities are in terms of sharing the same concepts of eliminating waste and fulfilling customers' needs and both follow the same lean principles such as pull and flow.

The aforementioned discusses the development of lean in service, application and suitability of lean concept in service environment. Although manufacturing and service are two distinct environments especially in terms of its main operation and output produces, the concept of lean is still applicable with some amendment to suit the service operation. No matter how big or small the differences between both sectors, importantly, lean philosophy and principle that eliminate wastes, make continuous improvement and value the customers are shared. Upon understanding the importance to improve and fulfil the need of their customers, the techniques and tools used is up to the organizations to choose based on their need. While lean has been proved applicable in service, the lean implementation in service has also been reported to experience problems and barriers as discussed in the next section.

2.3.1 Challenges in Lean Service Implementation

Service organizations also experienced few challenges in implementing lean. The challenges are mostly in term of the acceptance, the execution process, the knowledge and the sustainability. Resistance from the management and the employees is one of the barriers that hinder lean implementation in service sector. It occurs in the beginning of the implementation because they were sceptical of the benefit and validity of the lean philosophy and assuming that it is another improvement initiative (Almehareb & Graham-Jones, 2010; Piercy & Rich, 2009a).

Radnor and Osborne (2013) have outlined four challenges of lean implementation in public sector which are; over-reliance on lean workshop; using a tool kit based approach without understanding the philosophy; the impact of culture and structure in public sector and lack of understanding with the customer and service process.

Three out of four challenges outlined by Radnor and Osborne (2013) which are over-reliance on lean workshop, using a tool kit based approach without understanding the philosophy and lack of understanding with the customer and service process, are related to challenges in term of knowledge. Thus, the issue of understanding the lean knowledge has to be focused by the public service organization before the implementation. Besides, the impact of culture and structure in public sector is one of the challenges in term of culture that has to be overcome.

Implementing lean is not an easy task (Pedersen & Huniche, 2011). The intent of lean is not to achieve a short term goal where the organization focuses on obtaining the benefit from small projects such as in terms of cost reduction right after implementation, but after a while, the benefit reduces as termed by Radnor and Osborne (2013) as 'picking the low-hanging fruit'. The studies indicate that it is important to eagerly gather the higher hanging fruits that are usually more fresh and sweet.

Although lean have been implemented in public service organizations for years, the improvements move fast as lean is implemented on isolated and small projects. In ensuring the sustainable improvement, lean management should be implemented in the organization wholly to produce greater impact by changing the way managers manage and employees do the job (Gebre et al., 2012). Thus, the organization should focus on long-term goal although that it would be hard at the beginning, but it could achieve better results.

In a nut shell, many public service organizations were unable to fully implement and sustain lean due to various reasons such lack of understanding the lean concept and principle, by focusing only on short- term goals and over- reliance on tools and techniques. People resist accepting lean because they do not understand lean concept and want to keep with their existing culture. Therefore, to successfully implement lean in a service organization, focus should be given on the right elements, which are to disseminate lean knowledge and develop lean culture in the entire organization. Introducing lean concept to the public service organization is a new that requires an organization to change their work culture and work operation. Resistance to change is the first problems that should be overcome because it can hinder the implementation process. The change should be well managed by the organization to ensure that everyone in the organization can accept the change. Besides identifying the challenges experienced by the organizations in implementing lean, it is important to identify the factors that contribute to the success of lean implementation in which will be discussed in the next section.

2.4 Success Factor of Lean Implementation

There are many factors that could contribute to the successful change into lean initiative. Change initiative will not work if it is being implemented by an order or force from top management without any warning and expects that the middle managers will make it work (Brisson-Banks, 2010). In order to be able to direct the implementation in the organization, the leader must have the self-motivation to manage the change which is necessary to move the system forward (Almehareb & Graham-Jones, 2010). According to Waterman and McCue (2012), a shift in behavior towards openness to accept change is a must but difficult to achieve in the

large organization that has their own seated culture especially among senior level. Involvement of everyone in organization in teamwork is required to implement change (Brisson-Banks, 2010).

The transition does not occur automatically even though the change happened as most of the leader thought so (Brisson-Banks, 2010). Thus, it requires the top management to manage the transition in any change program. It is important for the managers to not only focus in narrowing their knowledge of lean but needs to increase their knowledge in management as well. Boyle, Scherrer-Rathje, and Stuart (2011) realized that more support for lean improvements can be seen and there's evidence of the company moving from simply implementing individual lean practices to lean thinking if greater management exposure to the current management literature.

Boyle et al. (2011) found that there is a number of cases plant managers “let go” due to their resistance to lean and their inability to lead the cultural changes required for lean. Losonci, Demeter, and Jenei (2011) revealed that the awareness regarding the importance of managing employees during the lean conversion is not new, but less attention is given on the human aspect such as what employees actually perceive, think and feel about the lean implementation. Besides, education and awareness on the expectation of what the management need from everyone in the organization should be clearly indicated to manage the changes during lean implementation (Almehareb & Graham-Jones, 2010; Puvanasvaran, 2011). Managers will be expected to lead the changes needed for lean success, and therefore, their knowledge

of lean and commitment will influence the innovating culture for the success of lean (Boyle et al., 2011).

Effective communication system can engage the staff to participate in change initiative (Chan, 2012). An unclear communication may cause inconsistency and may contribute to a failure in changing to lean (Nordin et al., 2012). Employee opposition and poor communications are among the top barriers to change (Bhasin, 2013). Daly, Teague, and Kitchen (2003) found that most of the managers overcome the resistance issue during the introduction of the change program by sharing information and communicate effectively to solve the problems.

From the literature, the author found there are 25 factors discussed in various studies (Achanga, 2006; Almehareb & Graham-Jones, 2010; Chan, 2012; Damrath, 2012; Dombrowski et al., 2012; Hamid, 2011; Kundu & Manohar, 2012; Mostafa et al., 2013; Pedersen and Huniche, 2011; Puvanaswaran, 2011; Radnor, 2012; Seddon & Donovan, 2010; Scherrer-Rathje et al., 2009; Schiele & McCue, 2011; Tang et al., 2010; Yamchello, Samin, Tamjidyamcholo, Bareji, & Beheshti, 2014). All these success factors could be clustered into four factors which are top management commitment, lean knowledge, lean culture and communication, as shown in Table 2.2.

Table 2.2
Clustered Success Factors

Success factors	Hamid (2011)	Achanga (2006)	Puvanawaran (2011)	Kundu and Manohar (2012)	Radnor (2012)	Yamchollo (2014)	Tang et al. (2010)	Almeharab & Graham-Jones (2010)	Schieie and McCue (2011)	Pederson and Huniche (2011)	Damrath (2012)	Dombrowski (2012)	Scherrer-Rathje et al. (2009)	Seddon & O'Donovan (2010)	Chan (2012)	Mostafa (2013)	
Top management commitment/support		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	Top management commitment
Leadership and management support and leadership		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Visible management commitment		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
Resources	/																
Top management	/																
Education and training																	Lean Knowledge
Skills and expertise	/	/			/	/	/	/	/	/	/	/	/	/	/	/	

The sections below discussed thoroughly all the success factors mentioned.

2.4.1 Top Management Commitment

The important factor for adopting lean in service is the commitment from management and support in terms of time and resources (Malmbrandt & Ahlstrom, 2013). Angelis, Conti, Cooper, and Gill (2011) indicate that task support from the employees could occur due to the existence of support from management. A success or a failure in implementing lean depends on the actions by the managers (Malmbrandt & Ahlstrom, 2013). Managers should commit and involve along the change process instead of mandating from the top (Brisson-Banks, 2010).

The top management should demonstrate leadership by example and not by words in managing improvement and change in their organization (O'hEocha, 2000). The important roles of leadership are to provide direction, give inspiration on change and to make sure that the change is being implemented (Oakland & Tanner, 2007). Equal and active involvement from all levels of organizations is necessary for an effective change (O'hEocha, 2000). If the leader did not actively provide full support, the change would be impossible (Kotter, 1995). Employee empowerment is one of the aspects which much be given by the management in order to demonstrate their commitment in lean implementation. Lack of team autonomy occurs due to reluctance of the management to delegate decision- making authority to the project team. Although employees manage the project entirety, they were not given the authority to implement process changes and improvements. Thus, the project leader has to prepare ideas and recommendations, followed by organizes meetings with managers who held the decision-making power (Scherrer-Rathje et al., 2009).

Firstly, the manager itself has to accept change. It is often said that major change is impossible unless the head of the organization is an active supporter (Kotter, 2007). Some managers refuse change as they believe the job done is commendable. They felt that they were doing a good job and therefore, there was no need for change (Massey & Williams, 2006). Lean commitment is captured by providing training for employees, ensuring a sufficient number of employees are available to undertake lean improvement activities, providing employees time for learning and testing new techniques and processes (i.e. learning and testing), committing the necessary monetary investments, and providing active supervisory management support (Boyle et al., 2011).

Commitment from top management is an essential factor in any change initiative especially in lean due the philosophy of lean itself, which is the focus on respect for people. The top management that commit to lean initiative by providing support and also involve together with the employees along the implementation provide a sense of secure, care and responsible to the staff. From the commitment shown, the employees will feel that their top management respect and value their work. Thus, they will think that they are parts of the organization and will always make improvement for the organization and provide support for the change initiative. It is important for the top management to attain clear knowledge about lean to provide full commitment and provide essential support for the change program.

2.4.2 Lean Knowledge

The top management and employees must attain and understand lean knowledge. Dombrowski et al. (2012) identified that lack of lean knowledge is one of the root

cause that hinder the implementation. Lean knowledge is a basic requirement which should be transferred across organization since the earliest stage (phase 0) before the implementation and if the knowledge is insufficient, the dissemination of knowledge should be continued in the preparation phase (phase 1) to teach them to become a lean thinker (Anvari et al., 2010). During the first phase of lean transformation, the lean knowledge, benefits and the need of implementing lean should be transferred to enhance understanding (Mostafa et al., 2013). For a successful lean implementation, knowledge and labour cannot be separated (Dombrowski et al., 2012).

One of the relevant factors in lean transition is the training process that provide education on lean knowledge for managers and employees to overcome resistance during transformation due to lack on lean knowledge and skills (Mostafa et al., 2013). Training plays a critical role in disseminating knowledge on core values and work methods, which is required in lean implementation (Audenino, 2012; Yogesh, Chandramohan, & Arrakal, 2012). There are three steps of training method; 1) to define the essential knowledge, 2) to teach the knowledge and 3) to develop knowledge continuously (Audenino, 2012). Information about lean principles, techniques and tool should be clearly given to all employees so that they will obtain deep lean understanding in which can ensure a continuous implementation (Dombrowski et al., 2012; Puvanasvaran, 2011).

According to Puvanasvaran (2011), training is very important because well-trained people will contribute to the successful lean implementation. The training will help to develop the employees who are capable of receiving greater responsibility, develop their multi- skills and able to provide continuous improvement. Knowledge

and skills given to the employees will help them in implementing the right tools and techniques (Puvanasvaran, 2011). The knowledge on lean tools and techniques should also be provided to avoid ineffectiveness and selection of wrong tools during the transformation process (Audenino, 2012; Mostafa et al., 2013).

Organization often hires a lean consultant to give training and support because of the complicated lean transition (Dombrowski et al., 2012). The critical aspect in managing knowledge is on how to incorporate the knowledge and to ensure that everyone in the organization embrace the knowledge (Dombrowski et al., 2012). However, the training is not solely for the employees, as managers too should develop their dynamic capabilities to manage the changes in their organization (Sim & Roger, 2009; Puvanasvaran, 2011). A leader should have the right skills in managing change and have necessary knowledge in lean so that they can promote the skills and enhance their worker's knowledge in lean implementation. By providing lean knowledge, every employee in the organization will understand the essence of lean in terms of concept and principle, know the need to change into lean and understand how lean could help in improving their work.

Besides, lean knowledge also eases the operation by utilising the tools and techniques provided. Lean training should focus on the philosophy and principle of lean in order to develop the lean culture in the organizations before narrowing into the training on tools and techniques. Therefore, it is vital to ensure that the lean knowledge is clearly disseminated to the whole organization during the transition so that they will understand and accept the change and can actively be involved in the implementation process.

2.4.3 Lean Culture

Lean culture is the culture that is based on the lean principle which is to continuously improve and respect other people. The culture is important for a successful implementation of lean (Ahmad, 2013; Bhasin, 2013; Brisson-Banks, 2010). The focus on creating the right culture should be given to increase the chance to implement lean successfully (Ahmad, 2013). According to Liker and Hoseus (2008), to develop and sustain lean implementation depends on 80% of culture and 20% of the technical aspects. A continuous lean implementation can be obtained by shaping a complete lean culture (Ahmad, 2013). Organization should understand and refer to Toyota culture, which focuses on people as the first step prior implementing lean. According to Ahmad (2013), other type of culture such as organizational culture, national culture and work culture have to be fit with one lean culture that will drive the lean transformation.

Lean culture is developed within organization when everyone understands the goal and purpose of lean improvement and gives full participation in reducing waste (Ahmad, 2013). Organizational culture is the behavior played by a group of people in the organization. It will be hard to change the culture and leave the old value that had been embedded in their behavior (Woodall, 2006). According to Bhasin (2012a), there exists a need to recognize the best people that ultimately can deliver any cultural change. The leaders have to understand the culture in their organization to help them identify the appropriate way to lead the employees (Brisson-Banks, 2010). The lean culture must be embedded within minds, heart and hands of all people in organization (Ahmad, 2013). The development of lean culture will ensure the change into lean become successful when everyone in the organization strive to do

improvement for the organization continuously such as by finding wastes and eliminating it, to respect the customers and always provide the best service for them. Therefore, it is important to manage all culture aspects and ensure that the lean culture will be developed within organization for a successful change into lean.

2.4.4 Communication

The change that needs to be introduced requires an effective communication from the top management to the employees. The implementation of lean will become a failure if the top management failed to communicate and transfer the need of change to everyone in the organization (Damrath, 2012). The vision of an organization and continuous information about the improvement progress should be communicated to the whole organization because communication is one of the key activities to sustain change (Chan, 2012).

Effective communication is one of the success factors for lean that should not be implemented in certain phases during implementation because communication is viewed as a continuous process which occurs along implementation stages from the initial planning stage towards the end (Nordin et al., 2012). Hanson (2013) suggested that the communication breakdown should be minimized using comprehensive communication plan before and throughout the change management process. The finding from the study done by Daly et al. (2003) showed that internal communication has a role in successful implementation of a change management program. External communication such as communication with customer is also important because the lean principle itself focuses on satisfying customers. In the service context, there is a close interaction between the customers and service

provider (Wei, 2009). According to Revelle (2010), one of the main purposes of communication is to provide direction that includes giving an instruction and information to the employees and the customer. Besides, communication is needed to determine customer's requirement and answer to their query (Revelle, 2010).

Communication can be either verbal or non-verbal. Toyota uses a simple visual format as an example of non-verbal communication method to communicate the most relevant information in document (Liker & Morgan, 2006). The mode of communication used will affect the effectiveness of the message conveyed. Many things should be considered in choosing any form of communication such as the complexity of the message (either to use written, oral or both), abilities of the receiver (physical limitation and language barrier) and cultural aspect (in-person vs distance communication) (Revelle, 2010). An unclear communication can contribute to misunderstanding of the need of change and not receiving the right information and support which is required along the change process. Furthermore, the lean knowledge and the lean culture that should be understood and developed will also be failed to be disseminated without an effective communication. In addition, the benefits/outcomes from lean implementation have to be communicated to the employees to motivate them. As communication is important in ensuring the knowledge and information is clearly disseminated, the manager should also focus on the communication aspect, which should be continuously managed along the implementation process.

To summarize, four factors that are crucial for successful change into lean are top management commitment, lean knowledge, lean culture and communication. Organization should ensure that all three factors, which are top management commitment, lean knowledge and lean culture to exist especially during the transition stage to lean to avoid failure in implementation. Good communication is the factor that will support the existence of commitment, knowledge and culture in which should be continuously accomplished along the change process. Without commitment from the top management, any change program will not work because employees will be influenced by the managers and may only participate if the managers do so. Thus, the understanding of lean knowledge is very important not only for the employees but also for the top managers so that they will not be sceptical towards the lean initiative.

It is also very important to develop a lean culture in the organization to ensure a continuous improvement. When the lean culture is embedded by everyone in the organization, lean is in their heart and mind to continuously find ways to eliminate waste, care for customers, and increase productivity, although after the initial change program end. Thus, in managing the transition towards lean, the factors mentioned should be incorporated in the change program and should be well managed to gain success and ensure sustainability of lean implementation.

Besides, based on the challenges discussed earlier, human factor who are not ready to accept change is utmost important to be overcome because transitioning from existing service operation to lean management implementation is a huge change to the organization, especially to the people in which will requires a proper change

management. With the complex and dynamics characteristic of change, the change management is required to control and guide the process of change. . The next section explains about change management and its importance in lean implementation by discussing the need of having change management in lean.

2.5 Change Management

Managing changes requires a competent management with sound knowledge of change management. Change management is one of the key disciplines required to allow change which involve the process of planning for change, managing change and reinforcing change (Creasey, 2007). Change management is defined as “ a structured approach to transitioning individuals, teams and organization from a current state to a desired future state to fulfil vision and strategy” in which aimed to ensure that change is been embraced and accepted (Human Resources Department, 2011). It is a systematic process for organizational change, which involves the application of knowledge to define the strategies, procedures, structures and technologies in dealing with change (Human Resources Department, 2011).

The objective of change management is to assist individuals that have been influenced by change using a systematic approach by addressing the resistance, provide support, and develop the ability and required knowledge to implement change (Creasey, 2007). The function of change management is to support the movement of an organization to change from its current state, through a transition state, towards the desired future state (Creasey, 2007). Change management is used to manage the people-side of change in order to make transition successful by utilizing organizational tools such as change model, training, communication and

coaching (Creasey, 2007). Besides, it is defined as a means of transitioning people because it consists of activities to assist transition from their current way of working to the new way of working by leading, managing and enable people to accept any types of change whether in value, process, structure, systems and technology (Human Resources Department, 2011).

Based on the aforementioned, this study defines change management as the act by the management that focus on preparing and managing the process of change in the organization. Inserting the concept of change management into lean in public service context, it is further interpreted as the management process that focus on managing the change towards lean implementation in public service organization, which might include preparing a change program to avoid resistance to change. The ultimate goal of change in organization is the behaviour regardless of the change involves the process, structure or system. People within the organization decide whether to embrace or resist the change. Therefore, change management will consist of the strategy to introduce the change and help the public servant to change into lean in public organization. Thus, the focus of this study is on the process of change management by public service organizations.

Past literatures discussed the problems in change into lean which requires a proper change management to overcome the problems especially on the resistance to change. People resist change because they feel comfortable and secured being in their immediate environment. The main reason is due to their individual resistance which is fear of the unknown, belief that change is not good to the organization and fear of losing something value (Robbin, Decenzo, & Coulter, 2010). Within a change

programme, it is essential to remove the fear and anxiety in order to obtain the trust. Since the change process will be time-consuming and risky, a vigilant preparation is required to enhance the process (Brisson-Banks, 2010). Everyone in the organization has to recognize a need for change. Massey and Williams (2006) suggested that in order to achieve this awareness, they are required to scan their immediate workplace and must agree that their work area needs for change and start discussions on how to make the process and the job easier to perform. Transformation towards lean usually entails a radical change in the strategy, structure, and technical aspect and thus, the understanding on how to deal with those changes is required for a successful lean implementation (Ahmad, 2013). Although most people do not like to change, nonetheless, the change must happen. Managers have to overcome that situation and with the right management, people will accept the change.

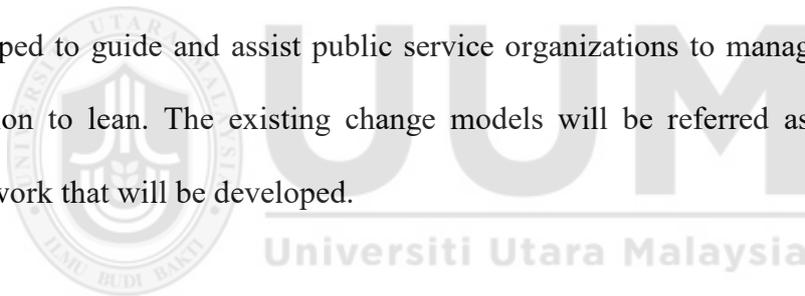
Change management is needed in implementing lean (Motwani, 2003). Change into lean is not just about the technical process but it is about managing emotion, behaviour and political process during lean transition (Atkinson, 2010). According to Atkinson and Nicholls (2013), in recent years, many change programs failed due to the mindset that is always pessimist towards a new initiative which led into an attitude to resist change. A change will happen parallel with change of attitude. Therefore, it is suggested that the focus should be given on changing the attitude and mindset lead by the top leaders working with the team by cultivating a comprehensive plan for implementation of change (Atkinson & Nicholls, 2013). Fail to plan for change and manage the change will cause a failure in lean implementation (Atkinson, 2010).

Besides the aforementioned, the other issue is pertaining managing the change in transition to lean. For an organization to change from conventional practice to lean, transition phase is experienced. Implementation of lean requires the transition phase to prepare employees and the relevant stakeholders to understand and accept change to lean prior implementing lean as a new way of working. Thus, there is a need for a change in the management to lead the transition to lean. A change program should start with preparing everyone to accept change by providing awareness and knowledge. A complete assessment should be performed and clearly explained to everyone about the problems and what need to be done. The change program should involve participation from employees and the commitment from the top management throughout the process. The change issue has to be managed and a complete change program should be prepared to ensure the implementation process is smooth.

All the problems mentioned earlier are related to the issue that supposed to be managed during transition prior fully implementing lean and could be overcome with proper change management. However, studies that focus on transition to lean are less evident. Although change management has proved to be important in managing change to lean, the studies of lean in public service did not focus on the change management process required in transitioning the organization into lean. Therefore, there is a need to focus on change management process in lean transition for public service organization.

The change models are developed to guide and assist the organization in managing change (Brisson-Banks, 2010). According to Brisson-Banks (2010), change model often neglects the necessary transition to occur within individuals throughout the

organization. Before the implementation of Lean in public service, the organization must be prepared to accept the transformation process. Although change in itself means uncertainty, managers are expected to generate clear and adequate formulation in identifying the problem and the position of the organization (Saka, 2003). It is necessary for an organization to facilitate and manage the change processes since lean success depends on continuous change performed by organization either it is a small or large change (Brännmark & Benn, 2012). An organization that has appropriate change strategy and promotes conducive culture will perform better and gain success in lean implementation (Bhasin, 2013). To become successful in the change program, an organization should assimilate transitions in their change model (Brisson-Banks, 2010). Therefore, a framework for managing change will be developed to guide and assist public service organizations to manage the change in transition to lean. The existing change models will be referred as a basis of the framework that will be developed.



Besides focusing on the change management process during transition to lean, there are few factors which are important to ensure the change is a success. Top management should demonstrate commitment and must also work to create interest in the implementation, and communicate the change to everyone within the organization. Through their involvement, employees are encouraged to contribute to the change which will take place and will be beneficial to the employees, thus feeling more confident both in their own abilities and work capacity by developing their creativity and innovation (Pamfilie, Petcu, & Draghici, 2012). To obtain an effective lean public management, lean training that consists of simpler approach on the lean concept and principle should be provided, and lean consultant should be invited at

the beginning to help public organization establish their lean management (Miao et al., 2011). Bhasin (2013) revealed that majority of lean failure is due to the problems in change management and organizational culture that provide few lessons to be followed by managers such as values the important role of training, aligned change management process with the culture, communicate the reason for implementing lean and the outcome, provide commitment and assign responsibilities of lean. The ability of an organization to adopt change is a critical factor to determine the effectiveness of their change program (Brisson-Banks, 2010).

In order to implement lean public management, attention should be given on few important aspects such as understand lean as a continuous improvement approach, gain commitment from top management and include change management in the lean program (Miao, Tang, Xi, & Liu, 2011). The whole change processes start with an awareness on the need of those changes, as well as to undertake a full-out assessment of the current situation prior implementing the change process (Brisson-Banks, 2010). Besides, the organizational readiness factors that need to be focused for successful lean implementation in public service include the understanding about the nature of the process for public service, the identification of value in the service, and the active participation of employees in redesign the process (Radnor & Osborne, 2013). Organization should focus on the human element to be successful in the change process (Abdi et al., 2006; Brisson-Banks, 2010). Therefore, from the above discussion, the factors influencing the change that have been identified are the commitment from top management, knowledge, culture and communication.

The role of change management in transition to lean has been clearly defined. Thus, the change management aspect will guide the process of managing change during transition to lean. Since one of the objective of the study is to develop a framework for managing change in transition to lean, few models and frameworks that relate with the study are reviewed and discussed in the next section. The model listed is the fundamental change management models and also the current models/ frameworks for change management in lean implementation developed by the practitioners and academician.

2.6 Change Management Model / Framework

This section consists of few models that can be divided into three categories which are Fundamental Model, Practitioner Model and Academic Model. The fundamental model consist of the earliest models that have been referred as the fundamental by the researchers. The practitioner model are the models developed by the lean practitioner while the academic model is the model developed by academician. The fundamental model of change management that will be discussed is Lewin's Change Management Model, Bridges' Transition Model and Kotter 8-Steps Model. While the models developed by McKinsey Center for Government (Gebre et al., 2012) and by the Malaysia Productivity Corporation (Malaysia Productivity Corporation, 2013a) can be grouped into practitioner model. Finally, the framework developed by Nordin, Deros, Wahab, and Ab-Rahman (2011) which is classified under Academic Model will be briefly discussed. All the models and frameworks listed have been chosen to be discussed due to their relevance to the study.

The Lewin's Model is the earliest fundamental model that guides the development of newer change management model. The Bridges's Model is the model for transition which is in accordance with the focus of this study. While the Kotter's Model provides detailed steps and had also been referred by Nordin et al. (2011) to develop their framework. In addition, both of the practitioner models are relevant with the study because it is used as a guide in lean implementation in public service. The academic model by Nordin et al. (2011) to be discussed here is the only framework in Malaysia that relates the change management and lean implementation that has been found so far. All of the previously mentioned models and framework will be explained next in this section.

2.6.1 Fundamental Model

Lewin's Change Management Model (1974)

The first fundamental change management model that will be discussed is the Lewin's Model. Kurt Lewin developed a change model in 1974 that consist of three stages which are unfreezing, changing/moving and refreezing (Brisson-Banks, 2010). Unfreezing is the phase to prepare for change by undertaking the complete evaluation to address the need for change and provide necessary help for employees to accept change (Brisson-Banks, 2010). When people can accept change, they will give support and participate in the change process. Unfreezing involves the distributing and balancing the social forces to increase the acceptance towards necessary change (Zand & Sorensen, 1975). During the unfreezing stage, the needs for the proposed change should be explained, expressed and announced clearly (Woodall, 2006). Unfreezing the current status quo is the first step required in the process of changing behaviour (Kritsonis, 2005). Unfreezing stage could involve

activities such as give the explanation about the need for change, provide motivation and gain trust through active participation of management (Kritsonis, 2005). According to Woodall (2006), the unfreezing stage and the changing stage are not clearly separated because both stages aim to ensure the change that could happen without resistance by providing education and training.

The shifting from equilibrium to a new level occurred in the moving stage (Zand & Sorensen, 1975). During this transition period, people experience various stages of resistance and emotion such as denial, anger, abandonment and adjustment before there are fully accepting change (Woodall, 2006). Kritsonis (2005) have outlined three necessary actions to be done during the changing stage, which are convincing the employees that the existing condition is no longer appropriate, working together in obtaining new information and connecting the group view with the supportive leader. Refreezing stage requires stabilizing and maintaining the new equilibrium (Zand & Sorensen, 1975). This stage occurs when the people can accept the change and start working using new ways and method in a stable organization (Brisson-Banks, 2010). The refreezing begins with the new culture change and implementing tasks and new values without any doubt (Woodall, 2006). The refreezing stage is needed to sustain the change after implementation. In this stage, institutionalizing and reinforcing new process could be done through procedures and policies (Kritsonis, 2005).

From the above discussion, the author believes that all three stages are straightforward stages of change that is important to be followed in any change process. The unfreezing stage requires an organization to help the people to leave

their old ways by reducing the forces that maintaining their current status quo. This can be done by showing the problems of using the current ways and the need for change. The second stage, which is moving or also known as transition, is the phase where the organization move from the current state to the new ways of working in which will involve resistant from the people. In order to develop the attitude, values and new culture during this stage, the commitment, knowledge and communication are up most important to overcome the resistant during the transition. The last phase, freezing or refreezing is to reinforce change, make the change sticks and lock the new culture so that the implementation continues. This can be done by giving continuous support, motivation and rewards and can translate the new ways of working into new standard operating procedure. The resistance always occurs at the beginning of change process and usually occurs during the transition from current ways to the new ways, thus, it is important to focus on managing the change during the second stage that is the moving/changing stage.

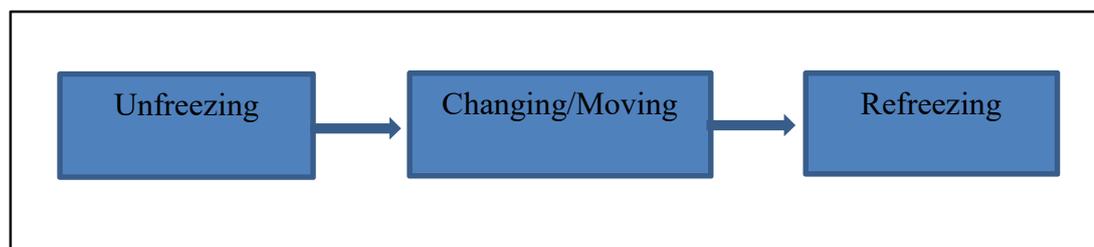


Figure 2.1
Lewin's Model

Bridges' Transition Model (1986)

Bridges (1986) developed a model for organizational transition that consists of three phases, which are:

- 1) The Ending Phase
- 2) The Neutral Zone Phase

3) The Vision or New Beginning

The first phase is called the ending phase, which means that dismissing old situation, role or old identity as the new purpose cannot begin without letting go the old way (Bridges, 1986). When change happened within the organization, they have to leave the existing ways such as particular jobs, location or associates (Brison-Banks, 2010). Neutral zone is the phase between old and new reality in which people are still unclear and experience confusion along with feeling of loss and meaningless due to new rules, responsibilities and environment (Bridges, 1986; Brison-Banks, 2010). The last phase is where people have to make new beginning, which may require developing new competencies, establishing relationship, becoming comfortable with new procedures and policies, and learning to think in line with new requirement (Bridges, 1986). It is a period for last adjustment to perform jobs in a new way and manner (Brison-Banks, 2010).

Although the phases in Bridges' model are different from the phases in Lewin's Model, all the phases have almost similar meaning and role as the phases in Lewin Model. It can be seen that Lewin's Model has become the basis in Bridges' Model. The change process in each phases are in accordance with the phases in Lewin's Model which are Unfreezing, Moving and Refreezing. Both model, distinguish the phases to change into three which are the earliest / introduction phase to change, the transition phase of change and the implementation phase of change. Although both model offers similarity in term of dividing the phases, there are still differences between both models especially in terms of their focus. The Lewin's model focus on

the steps required during the change process while the Bridges' Model focus on the change stage or the condition that occur during the change process.

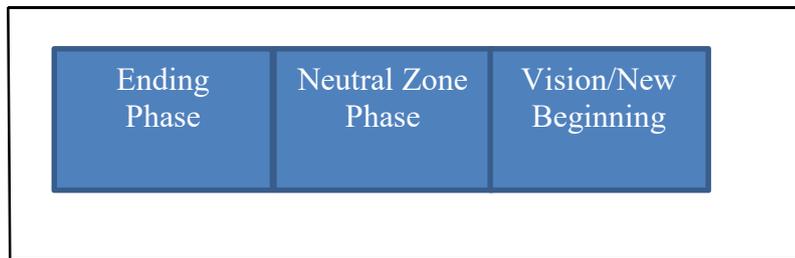


Figure 2.2
Bridges' Model

Kotter's 8 Steps Model (1995)

Change program has to be planned according to objectives and processes, and framework/model is suggested by Kotter to be used as a guideline to assist manager in addressing issue in logical order (Okumus & Hemmington, 1998). Kotter (1995) has listed eight steps for organization transformation, which are:

- 1) Establish the sense of urgency
- 2) Form powerful guiding coalition
- 3) Create a vision
- 4) Communicate the vision
- 5) Empower others to act on vision
- 6) Plan short-term win
- 7) Consolidate improvement and produce more change
- 8) Institutionalize the new approach

According to Kotter (1995), in the first step, the sense of urgency can be established by identifying crises and opportunities while the next step is to form a group to lead and encourage teamwork in the group. The third and the fourth step are about vision

in which need to be created and then to communicate it using every possible way for the employees to understand. In step five, people should be empowered to work toward achieving the vision and any obstacles that occur along the way should be rid of. Step six has to be done by planning and creating visible improvement, recognize and reward people that involve in change. In step seven, any system, structure or policies that do not fit the vision should be changed, people who can implement the vision should be promoted ,and process should be reinvigorated with new projects, theme and change agent. The last step that is step eight, involves expressing the link between new behaviour and the success, and find ways to develop leadership and gain success. The steps should be followed accordingly because Kotter (1995) mentioned that if the steps were skipped, it would result in dissatisfied outcome. If any critical mistake occurs during any phase, it will slow the momentum, thus, hindering success to be achieved within the stipulated time.

This model provides specific step by step to be followed in the process of managing change. This will benefit the new organization that has lack of skills and knowledge in change management to follow the steps provided by Kotter, since they may not have experience to develop their own change program. However, for the organization with more knowledge on managing change, they may develop their own steps that suits their need and not restricted with the steps developed by Kotter. Since this is the last fundamental model explained, the next two models are the model from the point of view of practitioners.

2.6.2 Practitioner Model

The Mckinsey Center for Government Model (2012)

The main stages/phases of a lean management program by The Mckinsey Center for Government are Aspire, Assess, Architect, Act and Advance. During transformation process, organizations typically go through these five stages (Gebre et al., 2012). The first stage requires an organization to develop aspiration to start the transformation. During the aspiration stage, senior leaders learn about lean management to get a clear understanding on how to improve the organization, the mission and the objectives. It is also the phase to set the vision, start to build the case for change and design the transformation journey to ensure that all the leaders are agreeable. The second phase focuses on assessment on the organization conducted by running rapid diagnose to highlight areas to be focused for improvement. It is the time to select and prepare for pilots and the team with the change leader should be developed to drive the first transformation project in the next stage.

The pilots are launches in the architecture phase to show the impact and to refine the approach for further transformation. During this phase, the capabilities of the change leader will be built. The result from the pilot will convince the managers and the employees to use lean as a new way of working. The next phase is the Action phase where the rollout program across the organization will be performed, usually after lean management has begun in the organization for a year or more. The last phase is the Advanced phase where philosophy and practices are continuously embedded in the organization.

The advantage of this framework is it consists of the stages that include some guidelines on things to be done on each stage of transformation into lean in the government organizations. It also provides the timeline as the reference for conducting each phase. However, the disadvantage of this roadmap is it does not mention about lean knowledge distribution and training given to the employees. The focus in the stages is more on the leaders. The leaders are given opportunities to learn about lean management on the first stage. However, the knowledge of lean should also be imparted to the employees for a better understanding of lean, and thus can avoid resistance from the employees. Although the Mckinsey Center for Government has provided the stages in their lean management program, it consists of the general steps for whole transformation and not focusing on the change program for transition into lean. Thus, there is still a need for the researcher to design a framework for managing change that will suit the need of local context, the Malaysian public service organization.

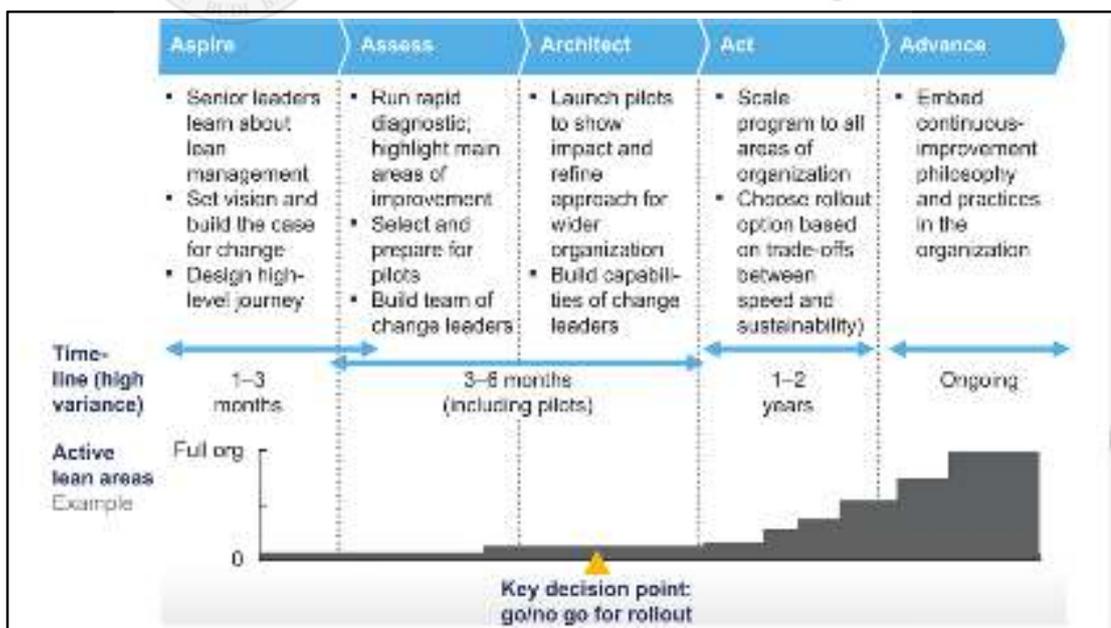


Figure 2.3
Stages in Lean Management Program by Mckinsey

Lean EIIP Roadmap by MPC (2013)

Malaysia Productivity Corporation have produced a roadmap called Lean EIIP (Enterprise Innovation Intervention Programmes) Roadmap for lean implementation in Malaysia (Malaysia Productivity Corporation, 2013a). This roadmap starts with Lean health check to diagnose the business according to lean metric. After the diagnostic, the roadmap moves to the first phase, which is Lean Mindset. The focus of this phase is to change the mindset into lean by conducting programs such as train on trainers, lean awareness program, local and international best practices exposure and hands-on workshop. The second phase focuses on Capacity and Capability Building, which emphasises on Lean Project Deployment that consist of Process Mapping Tools and Techniques and Lean Process Improvement. The next phase (phase 3) is Connectivity that focus on connecting the knowledge of implementation through Best Practices Sharing, produce publications, and conducting and sharing case studies. The roadmap exits by the assessment from MPC for recognition through involvement in programs such as Lean Creanova and Asia Lean Summit.

Although MPC have produce a roadmap for lean implementation in Malaysia, this roadmap is focusing on how they (MPC) conduct their lean program in the organizations that need consultation on Lean from them. It is not a framework that guides the organizations on implementing lean in terms of providing the enablers for a successful implementation or the necessary steps to be undertaken and the elements required in managing and implementing lean. It consist more on the programs that can be provided as a consultant and not necessarily to be fulfilled by the organizations that intend to implement lean. However, this roadmap also has its own advantage in term of the phases, which focus on lean culture development of lean

thinking, which is the most important prior implementing lean, and to ensure a continuous lean improvement. This roadmap is used by MPC in consulting all types of organizations whether in manufacturing, healthcare, education and not solely for public organizations context. Thus, this roadmap may not be the match for public service organization in managing change towards transition to lean, and there is a need to provide a framework for lean in the public service context.

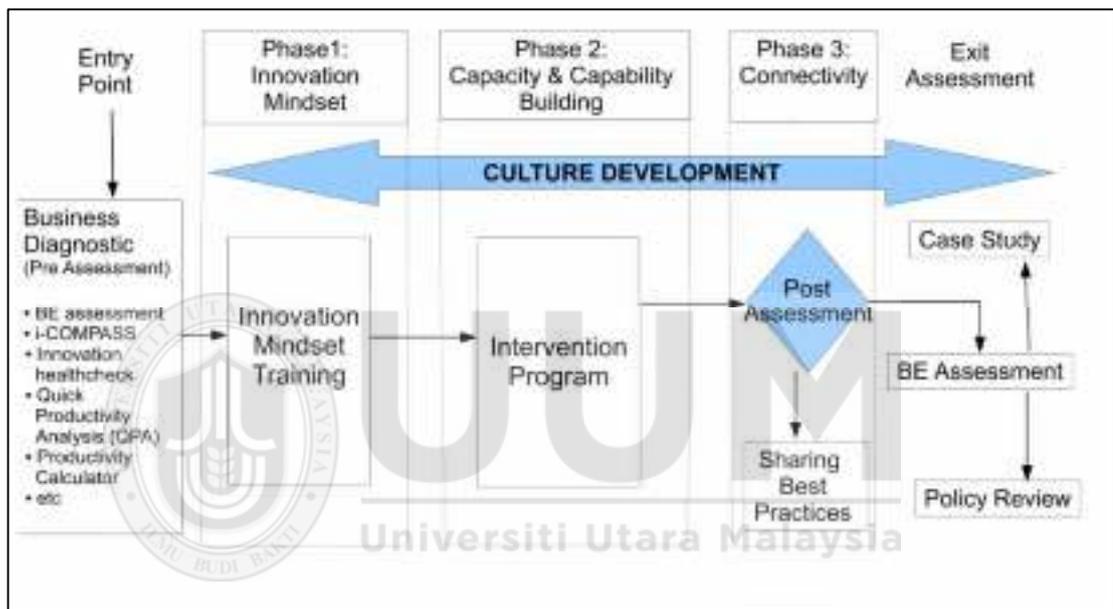


Figure 2.4
Lean Roadmap by MPC

The last model to be discussed in the next section is model by academician. In Malaysia, it is the framework that relates change management with lean implementation as done by Nordin et al. (2011) in manufacturing context.

2.6.3 Academic Model

Organizational Change Framework for Lean Manufacturing Implementation (2011)

Nordin et al. (2011) have developed an Organizational Change Framework for Lean Manufacturing implementation which was adapted from Organizational Change Framework by Oakland and Tanner (2007). The development of this model was based on Kotter's Eight Step Model. The framework had been further refined and modified after it has been validated using Delphi technique (Nordin, Deros, Wahab, & Rahman, 2012). This lean manufacturing implementation framework focuses on the change management perspective. It represents the major stages in the process of lean implementation that have been divided into two cycles, which are readiness to change and implementing change. The stages of lean implementation starts with identifying the Need for Change, having a clear Vision & Strategy, and creating a Change Agent System in which it is linked to the Development of Team. The sequence is continued with the Empowerment of Workers and System & Control. Effective communication had been removed from the sequence and placed outside the loop of circles to show that communication should continuously exists from initial stage until the final stage of implementation.

The advantage of this framework is on its simplicity and it is a straightforward roadmap that focuses on the aspect of organizational and change management, a crucial element in lean implementation. It is the only academic based framework from Malaysia for lean manufacturing implementation focusing on change management. The numbering given to each element shows the sequence of stages to be followed. However, the last element which is 'Effective Communication' should

not be given/ asserted with the number (7) as the other stages since it is not one of the stage in the sequence as mentioned earlier.

Furthermore, the existence of the arrows should help to visualize the sequence. However, there are two arrows that may cause confusion to the reader. The first arrow is between stage six and stage four. It shows that the sequence to be followed after ‘System & Control’ (stage 6) is ‘Team Development’(stage 4). It is the same with the two way arrow between Stage 4 ‘Team Development’ and Stage 3 ‘Change Agent System’. If the last stage of sequence in stage 6, thus there should have been an arrow that directly connects stage 6 to stage 1 to show the whole process is continuous and begins again from stage 1 to stage 6. Therefore, there is a need to further clarify and distinguish the arrow and its direction between each stages. Although this framework is about the change management in lean implementation, the context of the study is manufacturing. The elements in this framework may not fit with the public service context. Therefore, there is a need to deduce with change management framework for lean management in public service.

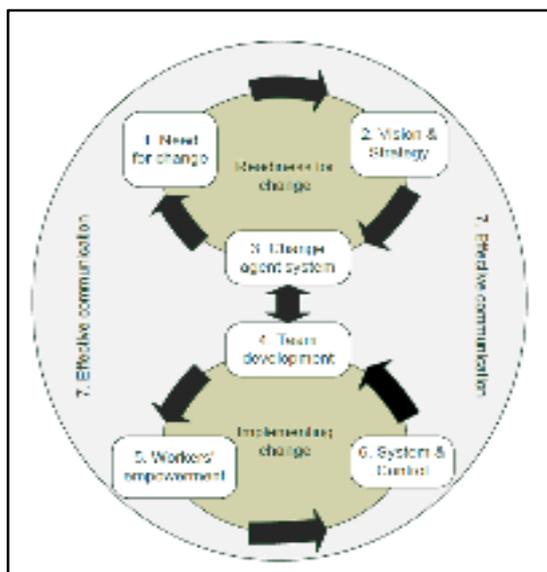


Figure 2.5.
Organizational Change Framework for Lean Manufacturing Implementation

Since all six models/ framework associate with change management and lean implementation have been briefly discussed in previous section, the next section will select the model to be used as the guide in this study and explain the reason on the selection of the model.

2.6.4 The Selection of Model for the Basis in Conceptual Framework Development

Among the change models described earlier, the Lewin's Change Management Model will be incorporated in the proposed framework and used as a guide in change management aspects. This model is chosen as Lewin proposed only the major stage with simple guidance and did not restrict the implementer to follow certain detail steps. Since there is no study on lean in public service the focus on change management process, the selection of simpler and general model as the basis of the research is more relevant compared to other model with specific steps that is used in different situation and environment. The general model provides the opportunity to make adjustment and allow each stage to be specified according to change types without being constrained with the detail steps by others. This will allow everyone who needs a guide in change management to use it according to the change condition and suit the need.

According to Burnes (2004), the critics towards lean model are unfounded as those were based on narrow interpretation of his work. Burnes (2004) believed that the approach by Lewin is still relevant in the modern world and Levasseur (2001) believed that Lewin's model is the most fundamental and the most powerful tool that should be used in every change such as during introducing new technology to the

organization and remind people not to underestimate the simplicity of the model. Changing into lean requires a change in technology, especially the change in people in which largely involves behaviour and attitude. Lewin's model concerns with the process of changing the behaviour of individual, group or organization, which should be begun from the top and followed by participation from everyone. Lewin promoted humanistic approach and identified that the key process to achieve behaviour change is through learning and involvement. This approach suits the lean concepts, which focused on human aspect, the importance of lean knowledge and incorporate all people to participate during the process. The humanistic approach by Lewin is also suits with the issues and challenges in lean implementation, including in Malaysian context where human factor mostly restrict the change into lean such as in term of resistance to change and misunderstanding the concepts and principles.

Besides, Lewin's Model has become the basis in the other change management models. The steps provided in the other models such as Bridges and Kotter are based on the stages in Lewin's Model. The general and simple stages for change in Lewin's model can provide guidance and direction on the stages that are important to be focused for change and from that, other researchers and practitioners can develop their own specific steps or stages that appropriate with their need but still based on the stages by Lewin. Although the newer models do not mention any reference to Lewin's model, it can be seen that their models consist of the steps that fill the required stages in implementing change which are unfreezing, change and refreezing. Since Lewin's model is the theoretical/fundamental model for change that has become one of the established models that guide other models, it is also relevant to be used as the guide in developing the change management framework for lean

transition in this study. The mapping of stages/steps of other described models/frameworks according to stages in Lewin's Model are shown in Table 2.3.

Table 2.3
Mapping of Other Models to Lewin's Model

Fundamental Model			Practitioner Model		Academic Model
Lewin	Bridges	Kotter	McKinsey	MPC	Nordin et al. (2011)
Unfreezing	Ending	Establish the sense of urgency	Aspire	Lean Mindsets	Need for Change
		Form powerful guiding coalition			Vision and Strategy
		Create a vision	Assess		Change Agent System
		Communicate the vision			
Changing/Moving	Neutral zone	Empower others to act on vision	Architect	Capacity & Capability Building	Team Development
		Plan short-term win			Worker Empowerment
Refreezing	Vision/New Beginning	Consolidate improvement and produce more change	Act	Connectivity	Systems and Control

This section stressed on the important of managing change during transition to lean. The change management models that have previously described could help in guiding the process of change. Lewin's model has been chosen as the basis of the study and will be incorporated in the conceptual framework. Since the study is conducted in Malaysia and the focus of the study is Public service organization, the next section will discuss about lean management initiative in Malaysia and explain about Malaysia public service organization.

2.7 Lean Management Initiatives in Malaysia

The implementation of lean management initiative in Malaysian service sector is still new. In Malaysian context, although many manufacturing companies have been implementing lean, the implementation of lean in public and private sector is still lacking (Malaysia Productivity Corporation, 2013b). Many manufacturing companies in Malaysia, especially in automotive, electrical and electronics industries have been implementing lean manufacturing to some extent (Nordin et al., 2011; Wong, Wong, & Ali, 2009). Based on the cluster analysis performed by Nordin et al. (2011) to classify the level of lean manufacturing implementation among their 61 respondents, they found that 8.54% companies only implement little lean manufacturing practices, 18.3% companies are in-transition toward lean while 10.37% companies are extensively implementing lean in their operation.

Besides the manufacturing sector, other sectors in Malaysia have also been adopting lean in their operation such as in healthcare, education, private services and government services (Malaysia Productivity Corporation, 2013b). However, the number of organizations in Malaysian public service organizations that implement lean management is not on par. Based on the record from the MPC Headquarter, only 32 government organizations in Malaysia have implemented lean management using the MPC program whereby twenty organizations are public service organizations from state and local government offices while the rest are organizations in healthcare and education sector. Although the number of public service organizations that received 5S certification (from 2000-2012) are high, at 835 organizations (Malaysia Productivity Corporation, 2013a) as shown in Table 2.4, they were not considered as implementing lean management as a whole because 5S is only one of the tools.

Table 2.4
Number of Organization with 5S Certification

Sector	No of organization	Percentage (%)
1) Public	835	59
2) Private		
a. Multinational (MNC)		
b. GLC companies	23	1.6
c. Services	135	9.5
d. SME	313	22.0
	109	7.7

The Malaysia Productivity Corporation (MPC) plays important roles in introducing Lean Management in Malaysia. It is a Government-linked company under Ministry of International Trade and Industries (MITI), which was established under the name of National Productivity Centre in 1920. The objectives of Malaysia Productivity Corporation are to provide value-added information on productivity, quality, competitiveness and best practices through research activities and databases, to develop human capital and organizational excellence for building a knowledge-based society through training, systems development and best practice, and to nurture innovative and creative culture for productivity and competitiveness through partnership programs (Malaysia Productivity Corporation, 2014).

In order to coordinate lean activities, MPC has set up their LEAN Centre of Excellence (CoE) in MPC's East Coast Region. This CoE will become a reference centre for all lean programs. Lean has been actively promoted by MPC through various programs such as public training program, seminars, hands-on-workshops and overseas study missions. MPC has also organized LEAN Summit to provide a sharing platform session, produce LEAN Bulletin to create awareness and provides the latest update on the programs and providing recognition and award to the best lean practiced organizations through LEAN Creanova.

This section highlights the level of lean implementation in Malaysia and the roles played by the Malaysia Productivity Corporation in promoting lean in Malaysia. Since the context of this study is in Public service organizations, the next section will briefly explain about Malaysian Public Service in term of the definitions, the differences between public and private, the characteristics and types of public service organization.

2.8 Malaysian Public Service Organizations

There will be differences between the services provided by public organizations and private organizations. Public service differs from private service due to the different environment in which they operate. Public service sector operates in environments that are characterized by constraints in resources and increasing expectations from customer (Agus et al., 2007). Meanwhile, the government controls the economic activities of the public service. In contrast, the private service sector operates in an open market and has decentralize decision-making (Agus et al., 2007). Their focus is on increasing economic efficiency and thus they are competing in providing service for customers (Agus et al., 2007). Thus, the private service is envisioned to improve their service quality to achieve profits and returns compared to the public service that are almost free of charge, unless they are pushed by the government and the citizens to improve their service quality.

As previously mentioned in chapter one, the study will be conducted in Malaysian public service organization. Thus, the researcher should clearly define what does public service means and distinguish the type of public service organizations involve in the study. Public organization refers to government institution performing public

service (Mansor & Ariffin, 2014). In the Guideline for Developing a Transformation Plan, Public Service is defined as “Services provided by the Government involving the administrative machinery at the Federal and State levels (Public Service Department of Malaysia, 2015). While in Article 132 of Federal Constitution, public service in Malaysia is defined as entire government administration that consists of federal and state general public service, health service, joint public service, education service, judiciary and legal service, police force and armed force (Mansor & Ariffin, 2014). Local government is not included within this definition, but it operates in the same way as other public service organizations (Yusof, 2005).

In the sixth Malaysia Plan, the definition of public service organizations has been widened where it includes quasi-government bodies in which comprise of Federal Government, State Government, Local Government and Non-Financial Public Enterprise (Yusuf, 2005). For a more clearer picture of the categories of public service organization in Malaysia, the study refer to an overview of government sector reported by the Royal Malaysian Custom Department (2014). In the report, the government sector is divided into four categories which are Federal and State government, Local Authorities, Statutory Bodies and Government Linked company (GLCs).

For this research, the scope is on general public service where other types of public service, which are education, health, judiciary and legal, police and armed force, are excluded. State department, state district and state secretary’s office are the organizations under the category of State Government, while City Hall, Municipal Council and District Council are the organization under Local Authority. Statutory

bodies are the public regulatory bodies performing duties on enforcement and regulatory function in accordance with government objectives (Royal Malaysian Custom Department, 2014). The public service for this study is limited and refers to the state government, local authority and state statutory body only. This is because all the public organizations that have received recognition on lean management by MPC and became the participant of the study are the organizations under the categories mentioned.

2.9 Summary

This chapter mainly reviews two main aspects of this study, which are lean and change management. Lean philosophies are based on three important aspects, which are waste removal, resource optimization and establishment of right culture in order to continuously improve and satisfying customer's need. Whether it is been implemented in manufacturing or service, both shares the same philosophy and principle in which could be adjusted to suit the characteristics of different environment. Besides, the four factor which were identified to influence on the success of lean are top management commitment, lean knowledge, lean culture and communication, in which should be exist and properly manage in transition to lean. To ensure that the concept of lean can be accepted and embedded within the organization, a proper change management to manage the change to lean especially to overcome the resistance to change is required. Few models related to change management and lean were reviewed and Lewin's model was chosen as the basis of the stages of steps required in change process to be incorporated in the framework. The last part of the chapter focused on lean initiative in Malaysia and Malaysian public service context to justify the scope of the study. .

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Chapter three consist of a brief explanation about the research process involved in the whole research. The philosophical assumption and paradigm related to the research and the conceptual model are provided for the basis of this research. The important terms used in the research are defined under the Operational Definition section. The instrument to be used, the method to collect data, the technique to select the sample and the steps in analysing data are further explained.

3.2 Conceptual Framework

This conceptual framework is based on literature reviews and from information gathered during the preliminary study. An emerging conceptual framework is been developed as shown in Figure 3.1 to guide the research. The conceptual framework will be referred during data analysis (Baxter & Jack, 2008). The conceptual framework could emerge after the data has been analysed. The final framework will include the new themes that emerge from the analysed data (Baxter & Jack, 2008).

The framework shows the factors required for successful transition towards lean management in service operation, which are lean knowledge, top management commitment and lean culture. A continuous communication throughout the process is required to ensure that the purpose, knowledge and support could be clearly disseminated and ensuring an effective two ways communication.

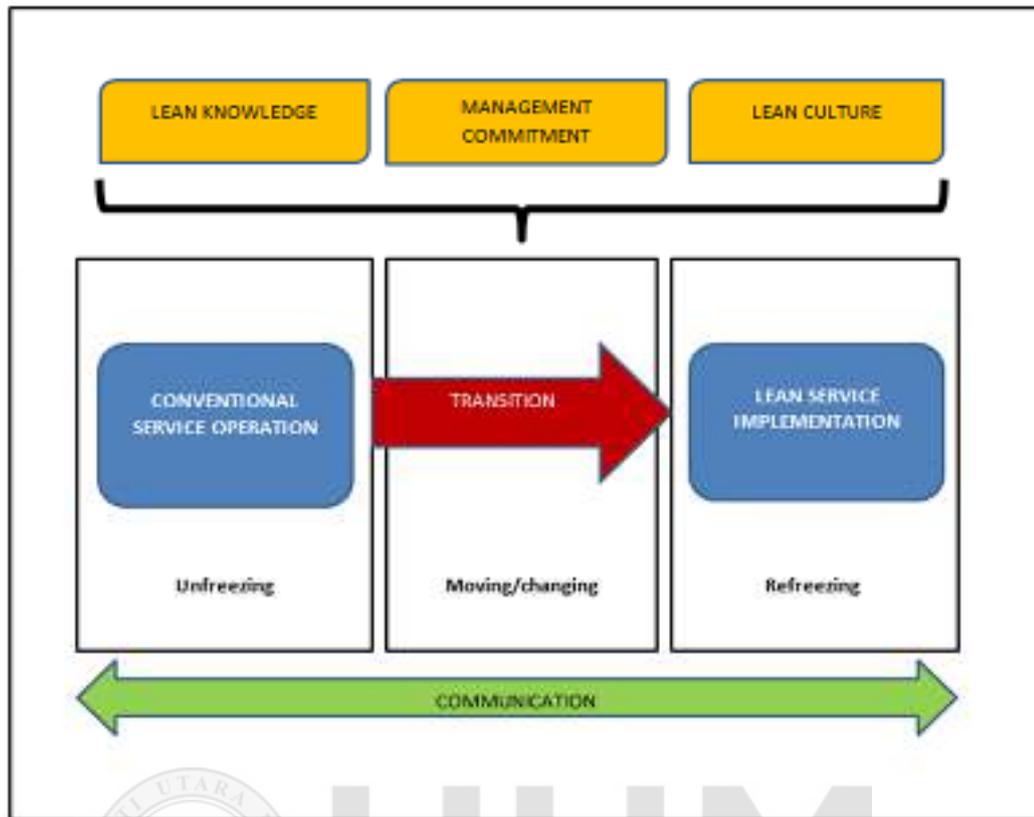


Figure 3.1
Conceptual framework

The basis of the stages for change in the framework is referred to Lewin's model that consists of three stages, which are unfreezing, moving/changing and refreezing. Unfreezing has to be done in the earliest stage where the organization still operates using the old ways. The changing is the transition stage from existing practice towards the new change, which is very important and should be well managed. After the organization has transformed their operation into lean management, the refreezing is required to ensure the sustainability of lean implementation. Revisiting the main objective of this research which is to investigate how the public service organizations manage the changes in transition to lean, the focus will be given on the second stage which is Moving/Changing. The information regarding the change program used and the steps taken by the organizations in managing change during this stage were gathered to develop more specific model that can guide other public

service organizations to manage the change in lean transition. The variables on this proposed conceptual framework are operationalized in the next section.

3.3 Operational Definitions

The operational definitions of the variables are as follow:

- a) Top management commitment is the act done the top management to show that they support the lean initiative such as by providing active supervisory management support, resources, training and time to ensure that the implementation run well .
- b) Lean knowledge is the knowledge regarding lean, which consist of the concept, principle, philosophy, tools and technique that should be disseminated and understood by everyone in the organization in order to avoid misunderstanding and failure in implementation.
- c) Lean culture is the culture that is based on the lean principle, which is to continuously improve and respect other people that should be embedded in the heart and minds of everyone within the organization.
- d) Communication is a process used to transfer the information (i.e. lean knowledge, benefits, goal and achievement) and erve as a channel for the top management and the employees to communicate between each other.

3.4 Philosophical Assumption and Paradigm

The philosophical assumption reflects the researcher's stance when they choose to do qualitative research while the paradigm will then further shape the research practice(Creswell, 2012). The research process should start with the philosophical assumption about the nature of reality (ontology) and how they know the knowledge

(epistemology) (Creswell et al., 2007). The axiological assumption, which is about the value judgment, will complete the philosophical alignment for the qualitative research. Paradigm will be used to address the philosophical assumption (Creswell et al., 2007). The appropriate philosophical assumptions that stance this research which are ontology, epistemology and axiology are further explained in the next section followed by the research paradigm which is the constructivism-interpretivism.

3.4.1 Ontology

Ontology is about the nature of reality. This philosophical assumption stressed on the existence of multiple realities in any condition (Lebar, 2014). Reality is subjective and it can be seen from perspective of participants in the study (Creswell, 2007). The researcher has to report the realities based of the voice and interpretation of the respondent. The ontological issue of whether or not the social reality independently exists from human interpretation and conception is related with two ontological positions, which are realism and idealism (Ritchie et al., 2013). Realism is an existent of external reality that is independent of individual understanding, beliefs and their interpretation of meaning, while idealism opposed by stressing that reality is mind-dependent where the knowledge can only be known through human mind and socially construct meaning, and no reality exists independent of belief and understanding (Ritchie et al., 2013).

The ways researchers view the world are based on two ontological stances, which are nomothetic or ideographic. If the researchers assume that the reality is objective and independently exists as a structure, it is called nomothetic while on the other hand, the stance is ideographic if they believe that the world is socially constructed and can be understand from participant's perception (Farquhar, 2012). Based on the research

context which is to understand the change management aspects through the experience of the public service organization during their transition to lean, this research undertake ontological assumption where the researcher believed that the reality are based on the views of the lean practitioners. Since the nature of reality could be obtained from participant's view by both onto-logical positions and ideographic stance, thus this study will use themes and quote the participants' words and provide evidence from different perspectives of lean practitioners in Malaysian public service organization.

3.4.2 Epistemology

Epistemology is about the basis of knowledge and how to obtain the knowledge (Ritchie et al., 2013). It is a core area of philosophical study related to the knowledge including its sources, limitation and justification of the knowledge (Given, 2008). The debated issue in epistemology is on what is the best way to acquire knowledge. There are two main views regarding this issue, which are either knowledge can be obtained using bottom-up process or top-down process. The bottom-up process is an induction process where through the data collected, the patterns will be derived and from that the knowledge is built while the top-down process is a deduction process in which the pattern will be developed first before collecting evident to support it (Ritchie et al., 2013).

In this study, both types of the process, which is bottom-up (inductive) and top-down (deductive), will be used in different stages of the research. First, the top-down process will be used to identify important themes to guide the study and later, after the data is collected and analyzed, the bottom-up process will be used to identify if

there is new emerging themes. Epistemological assumption is about the knowledge basis, which relate to how someone understand the world and relate it as the knowledge for other people (Lebar, 2014). With this assumption, the qualitative researchers try to get closer to their participant during conducting the study to acquire the knowledge (Creswell, 2007). In this research context, to understand the knowledge on how the public organization manage the changes during lean transition, the researcher interact with the research participants in public service organizations to understand and gain the knowledge from them which is in accordance with the epistemological standpoint of this research.

3.4.3 Axiology

Axiology is about the role of value in research. The value theory or axiology discusses on values and ethical context of research which includes the truth and goodness of the study, obligation and right conduct (Given, 2008). Ethics is intrinsic to the constructivism paradigm due to values of participant that is included in the inquiry (Guba & Lincoln, 1994). This philosophical assumption is very essential in the research process regardless of any paradigm used by the researcher because ethics must be integrated along the process. The researcher must know the ultimate purpose of their inquiry and how they value the knowledge. By practicing this assumption, the researcher discusses the value openly using his or her own interpretation in conjunction with the interpretation by the participant (Creswell, 2007).

According to Creswell (2007), the characteristic of the axiological assumption is that the researcher acknowledges that the research is value-laden and that biases are

present. Unlike positivism and post-positivism paradigm that is claimed to be value-free, critical theory and constructivism paradigm placed the role of values in shaping the outcome of inquiry (Guba & Lincoln, 1994). In accordance with the constructivist researcher, the interpretivist researcher believes that the values will determine the facts and the interpretation from the facts, which may lead to the existence of bias that will be acknowledged by addressing and explaining it (Farquhar, 2012). By applying the axiological assumption in this study, the researcher will value the knowledge constructed by the participants in the public service organization, respects their opinions and interpret the findings in ethical manner based on the value presented by the participant and from the researcher interpretation.

3.4.4 Constructivism- Interpretivism

Social constructivism is often combined with interpretivism (Creswell, 2007). Constructivists claim that the truth is relative and it relies on perspective of people (Baxter & Jack, 2008). In this paradigm, people try to understand the world by developing subjective meanings of their experiences and thus, the researcher should rely on how their participants view the situation (Creswell, 2007). Constructivist-interpretive paradigm has roots in philosophical hermeneutic, phenomenology and symbolic interaction (Carlo & Gelo, 2012). Philosophical hermeneutic stress that the hidden meaning should be reflected out and understand from individual perspective, and thus the meaning is interpretive (Carlo & Gelo, 2012). Phenomenology is about investigating subjective experience of the subjects in which requires to assume the first-person perspective while symbolic interactionism asserts that the action of people and how they derive, handle and modified meanings are influenced by their

interaction with other people through the interpretative process (Carlo & Gelo, 2012).

Qualitative research is known as an interpretive research as researchers interpret the meaning by others (Creswell, 2007). Constructivism paradigm is used as basis approach for the case study (Baxter & Jack, 2008). In the constructivism paradigm, the purpose of inquiry is to understand and reconstruct the construction hold by the participant and the researcher (Guba & Lincoln, 1994). Since this research method is the case study, which requires researcher to construct and interpret meaning from the interview with the participant, the constructivism-intrepretivism is an appropriate paradigm for this research.

This section explains the philosophical assumption and the research paradigm that reflect the researcher's stance in conducting the research. The combination of ontology, epistemology and axiology will guide the researcher to gain understanding on the reality from the view of participant, provide ways on how to acquire the knowledge and stressed on the role of value and ethics to ensure the credibility of the research. In addition, the combination of constructivist and interpretivist paradigm as the stance for conducting case study that will lead the researcher to construct and make interpretation of the meaning as well as acknowledging the construction and the interpretation held by the participants of this study. The next section explains about the conceptual framework of this study.

3.5 Research Design

Qualitative research concerns with exploration of phenomena from perspective of research participant using the interpretative approach (Ritchie, Lewis, Nicholls, & Ormston, 2013). Unlike quantitative research, qualitative research does not answer the questions relate to quantity, numbers or strength of relationship between variables, but it is used to provide understanding through social processes. There are five designs or approaches in Qualitative, which are Narrative Research, Ethnography, Grounded Theory, Phenomenology and Case Study (Creswell, 2012). Narrative Research is used to understand an individual or more individuals through their detailed stories by using interview and documents, and their live experiences are being analyzed in chronological order (Creswell, Hanson, Plano, & Morales, 2007). Ethnography is used to describe and interpret the culture shared by a group, primarily using observation and interview (Creswell, 2007). Grounded theory focuses on developing theory grounded in participant view when no theory exists or inadequate existing theory in studying a process, interaction or action of many individuals primarily using interview (Creswell, 2007; Creswell et al., 2007). When the researcher seeks to understand the essence of live experience about a phenomenon, Phenomenology is the suitable research design (Creswell et al., 2007).

One of the characteristic in choosing which qualitative approach to be adopted is the type of problem that best suited for the design. In providing an in depth understanding of a case or cases, case study is the best-suited qualitative approach (Cresswell, 2007). Case study is conducted to obtain an in-depth understanding of an issue in a case or multiple cases (such as event, program, or activity) which can be obtained using multiple forms of data collection (interview, observation, document

review) and analysed by describing the themes (Creswell et al., 2007). Since this study explores on how the public service organization manages the change in transition to lean, the study is a qualitative research using the case study approach. The use of case study approach will provide an in depth understanding on the change program used by the Malaysian public service organization and the way they manage the change during lean transition, the challenges and problems that they have encountered, and understanding the factors that contribute to the success of those organizations in applying lean management. The next section explains the research process, which consist of the steps involved in conducting the research.



3.5.1 Research Process

The research process is shown in Figure 3.2.

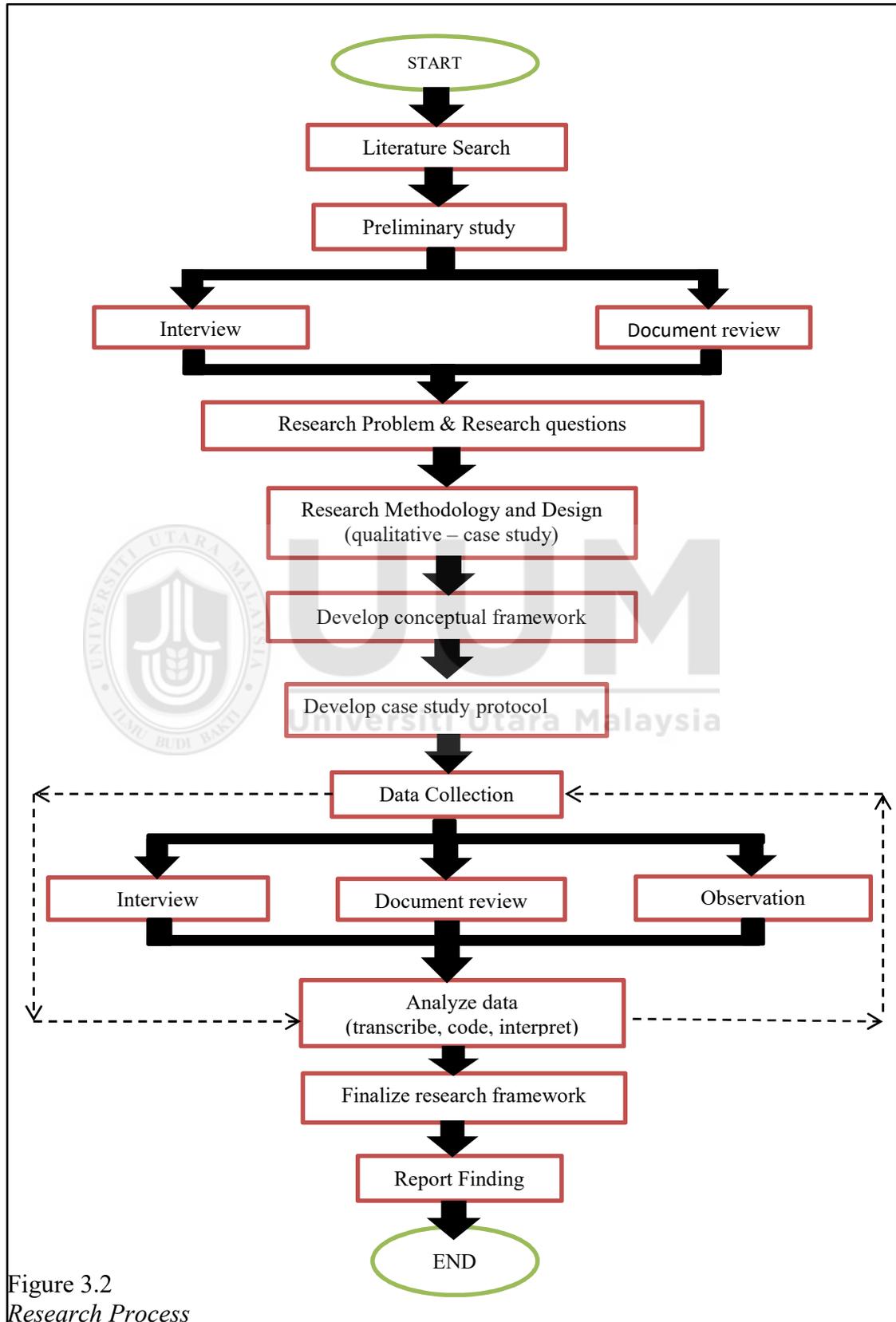


Figure 3.2
Research Process

The study begins with the literature search to understand the concept and identify the problems. A preliminary study was conducted at the Malaysia Productivity Corporation, East Coast Region to gain insight about the real problems and to collect related information regarding lean implementation in the service sector. Based on the literature and the preliminary study, the research problems were identified, and the research questions were developed. The objective and research questions will determine the methodology to be used. Qualitative approach is used in this study as it is useful for exploration purpose on particular subjects. In this study, the particular subject to be explored is on the process of managing change during transition to lean, which is still not being fully explored. The case study method is used to understand the participant's perspective towards managing change for lean implementation.

The main data collection method used in this study is interview, and supported using documentation review and observation. All the research questions (RQ1-RQ3) pertaining the challenges, critical success factor and how the public service organization manage the changes, were answered using the main data collection method used, which is the interview. In addition, the use of data collection method, which is document review, will further strengthen the understanding on the change program and the steps involved in managing changes in which can answer the main research question (RQ 3). Furthermore, the use of observation during conducting the case study can provide clearer picture of lean management implementation in the organization such as in terms of the way they perform their jobs and arrangement in the organizations. The use of various data collection method is for the triangulation purpose to strengthen the finding and enhance validity. "Triangulation occurs when

multiple sources from different data collection methods support the same conclusion or at least, do not contradict it” (Miles & Huberman, 1994).

The type of case study design used in this study is the collective/multiple case study. In the collective/multiple case study, the researcher chose multiple cases in illustrating the same issue of concern and to seek different perspectives on that issue (Creswell, 2007). The researcher should replicates the procedures for every case in conducting multiple case study (Yin, 2003). For this study, the issue to be explored is on managing change in lean implementation among Malaysian public service. The number of public organization for the case study is more than one organization where it involve few cases (multiple bounded system). The case study was conducted to collect the data and the data was analysed. The conceptual framework is finalized, and lastly the finding is reported.

3.5.2 Instrumentation

A semi-structured interview protocol was developed as a guideline during the interview sessions. It consists of open-ended questions to give opportunities for the interviewer and respondent to discuss certain topics in detail. The questions are based on management of change, which focuses on how they manage the transition to lean in their organization, identify the challenges experienced and the factors for successful transformation. The digital recorder will be used to record all the conversation between the interviewer and interviewees. The interviewer took field notes to record important points and in addition record their observation during the interview session.

3.5.3 Case Study Protocol

Case Study Protocol is a guideline that consists of procedures to guide the research and to ensure uniformity in data collection and data analysis (Yin,1994). The case study protocol for the research consists of two parts which are the introduction to the study and the interview questions. The purpose of the first part is to give an overview about the study in which consist of the objectives of the study and techniques of data collection. The second part which is the interview protocol is used to elicit the data and information about the lean implementation in the organization. The interview protocol consists of three sections containing questions that capture both general and specific information regarding respondent information, lean Implementation and managing change to lean. For the first section which is respondent information, the interviewees were asked about their current position, year of employment, involvement in the lean transition and their function in the organization.

The questions in second section which is lean implementation covers the history of lean in their organization, the drivers for implementing lean, activities and training involved, and the status of their lean implementation. The third section which is managing change to lean consists of the questions about the challenges/ problems experienced by this organization during transition to lean, the success factors in implementing lean and the questions on how they manage the change into lean. The manager and the projects leader were also been asked about their involvement and roles played by them in lean to further understand the their managing process used for lean implementation. The case study protocol can be referred in Appendix A.

3.6 Data Collection Process

The main data collection method used is interview. The other two methods used are document review and observation. The process of data collection using all the methods are explained below.

3.6.1 Interview

Interview is one of the most important source of information in conducting case study (Yin, 2003). The main data was collected during the interview session. The purpose of the study had been clearly explained during the briefing session before the interview start. The interviewer stressed to the respondent that their information will remain anonymous and will be kept as confidential to make sure the interview is not bias and to gain trust. The time to interview each respondent is approximately one and a half hour. An In-depth interview was conducted with the project leaders and the manager. The information of the participants and the date of interview are shown in Table 3.1. All the interview data was transcribed directly after the interview session. After the transcription process, the researcher returns to the interviewees for verification process, to ensure accuracy of the transcribed data. The researcher communicated with the interviewees through telephone conversations and email for further clarification. This process can improve internal validity of the research.

Table 3.1
Participant's information

Organization	Name	Category	Interview Date
Case A: DBKU	Ajing Kartini Binti Md Ramlee	Manager	9 July 2015
	Zainal-'Abidin Bin Bolhassan	Project Leader	
Case B: PDT	Nurul Aini Binti Mohammad	Manager	17 August 2015
	Mohamad Ramli Bin Majid	Project Leader	
Case C: MPK	Rosli Bin Osman	Manager	21 August 2015
	Norkamawati Bt Kamal	Project Leader	
Case D: PKNP	Rasli Bin Jamil	Manager	19 November 2015
	Nooremi Binti Musa	Project Leader	
Case E: MBSA	Wan Suraya Binti Sahabaludin	Manager	15 December 2015
	Aziahtul Sakdiah Binti Mustapa	Project Leader	

3.6.2 Document review

The researcher also requested the document to be reviewed after the interview session. Document review is a method of collecting the data by reviewing the related document. According to Yin (2003), the strength of document are stable (can be review repeatedly) and exact (contain exact names, references and detail of event). Documents is a good source of evidence which could provides details information which cannot be observed directly and could not be understood clearly just from the verbal explanation during the interview. Thus, the process of reviewing the documents can support the information obtained from interview sessions. The related documents reviewed are the change program or lean implementation plan and progress report. The participants also shared the details of their lean projects in form of posters and printed presentation slides.

3.6.3 Observation

Direct observation can be made during the field visit to observe the environmental conditions and relevant behavior (Yin, 2003). Creswell (2007) guides some steps to be followed for observation such as asking for permission to assess the site, identify what and who to observe and writing reflective notes or record the information observed. The observation was conducted during the visit to the organizations. The participants offered to guide the visit inside the organization after the interview sessions finished. The researcher observe the surrounding in terms of the layout and the arrangement in the offices, the information board, achievement section and the also the staff itself. The researcher took some pictures and make some notes during the observation process.

3.7 Case Selection

The study population is the public service organizations in Malaysia. Purposive sampling technique was used to choose the sample based on the predetermine criteria and their willingness to participate in the study. The type of purposive sampling technique used was criterion sampling where the case that meet the predetermine criteria was selected (Patton, 1990). This sampling technique is suitable for the study because the researcher already had determined the desired criteria of the sample. The predetermined criteria is the public service organizations that have been implementing the lean concept in their operation and still sustain the implementation, and have certified by MPC that the organizations had demonstrated excellent practices in Lean Management . The respondent of the study is the manager and the change agent/project leader for lean. A change agent or change champion is a member of the organization who acts enthusiastically to have the lean idea implemented by interacting and exchanging information between people from

different departments and engaging all the people in the organization to support the implementation. The reason why the manager was chosen as respondent of the study is that the study focuses on change management aspects which is under control of the management and specifically lead by the managers. While the change agent is the person that lead, initiate, plan and responsible in ensuring that lean is been implemented smoothly. The change agent is usually the lean project leader in the organization that provides clearer information regarding lean implementation for the researcher.

The number of sample is five organizations. This is because only five government organizations in Malaysia has fulfilled the predetermined criteria which is the public organizations that have received lean recognition from MPC for excellent practices in Lean Management. The list of public organizations under recognition is provided in Table 3.2. The data was continuously collected from the samples until the saturation point was reached. Saturation point is when the same recurring patterns appear from the analysed data and the researcher convinced that the new data will add little to the understanding that already surfaced (Suter, 2012). The case study was conducted from one organization to another based on the list provided by the MPC until the data collected reached the saturation point.

Table 3.2
List of Sample

	Name of Organization	State
1	Perbadanan Kemajuan Negeri Pahang	Pahang
2	Pejabat Daerah dan Tanah Kuantan	Pahang
3	Majlis Perbandaran Kuantan	Pahang
4	Majlis Bandaraya Shah Alam	Selangor
5	Dewan Bandaraya Kuching Utara	Sarawak

The data collected from the interviews was transcribed and analysed. The data analysis is explained in the next section.

3.8 Techniques of Data Analysis

The analysis method used in this study is thematic analysis, that involve the process of deriving the themes from the data (text). Thematic analysis is a method used to identify the themes, analyse and report patterns from the data set in order to organize and describe it in detail (Braun and Clarke, 2006). Thematic analysis seek to extract the themes which are prominent in a text and the use of thematic network is to assist in structuring and representation of the themes (Attride-Stirling, 2001). There are three stages of analyzing qualitative data suggested by Miles and Huberman (1994) which are data reduction, data display, and conclusion drawing/verification. Data reduction refers to the process of organizing and reducing the qualitative data such as by coding and discarding irrelevant information.

After the data collection process, the data was prepared for data analysis by transcribing all the words from the digital recorder and all the unnecessary words such as any interruption during the interview session were removed. The researcher then read through the data to obtain general sense of the data. The transcribed data was coded by locating text segment and assign a code to label them. A code is defined by Miles and Huberman (1994) as “a label or tag that assigns meaning to a piece of data”. The coding process assists the researcher to arrange and organize the large amount of data gathered from the interview. The process of labelling and grouping the data provides the researcher with the opportunity to clarify the unclear aspects. The codes were combined into themes.

For the second stage of data analysis which is data display, Miles and Huberman (1994) suggested that the data is displayed in the forms of network, table, chart and other graphical format. The data was analysed and organized using qualitative computer software package named Atlas.ti. Atlas.ti is a qualitative data analysis software, which can easily process and categorize the codes according to theme in the visual form and network for the interpretation purpose. Atlas.ti was used for analysing data in this research because it offers many benefits such as in terms of speed, consistency, easy to learn and easy to understand what it does and how it works (Given, 2008).

It also has strategic operation modes that allow visualization of all aspects of data to be analysed on-screen at once and encourage creative processes to be performed such as stimulating the ideas and recognizing the patterns. Atlas.ti can assist the researcher not only in analysing textual level such as basic coding and retrieving data but can also perform more sophisticated analysis for model-building activities for conceptual level (Given, 2008). The use of Atlas.ti software in this research help to visualize the themes through the network view and also generate two types of output which are numerical output and textual output based on the thematic analysis performed by the researcher. The last stage in data analysis is drawing conclusion based on the analysis performed (Miles & Huberman, 1994). So finally, the meanings of data were interpreted and the findings were reported. The steps in analysing qualitative data are simplified in Figure 3.3.

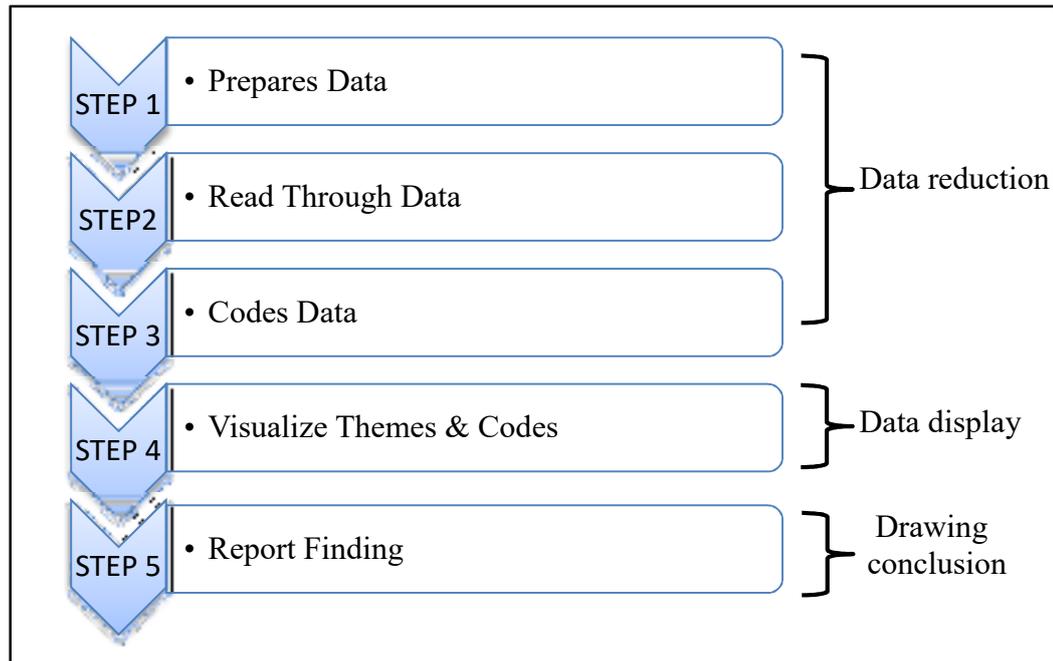


Figure 3.3.
Steps and Stages in Analysing Qualitative Data

3.9 Validity and Reliability in Qualitative

Validity is highlighted in qualitative study to ensure that the research procedures are transparent, the result is evident and the conclusion is convincing. Golafshani (2003) conceptualised validity and reliability as trustworthiness and the quality of qualitative study. Unlike in quantitative research where the reliability can be specifically defined and measured to ensure that similar results will be obtained if the same study conducted by multiple researchers, the reliability in qualitative is not been described with such uniformity. Qualitative researchers had proposed few parallel concepts that correlate with reliability such as credibility, consistency, dependability and conformability (Given, 2008). Credibility and dependability are commonly indicated using methodological coherence (a thorough process of data collection, analysis and interpretation), researcher responsiveness (finding's

verification with participants of the study) and audit trails (transparent description of the whole research) (Given, 2008).

Validity procedures such as triangulation, member checking, external audit, thick description and peer reviews are among the strategies used by the researcher to enhance the credibility of the qualitative research (Creswell & Miller, 2000). Denzin and Lincoln (2000) mentioned that the conflation between method and interpretation is one of the issue in validity. There is no method that is the most suitable and could deliver the truth ultimately without the interpretation process (Denzin & Lincoln, 2000). Since the interpretation process is utmost important along with the method to deliver the truth in social reality, the researcher has to make sure that the interpretation is rigorous and can be trusted using the validation procedures. One of the perspectives that governed the choice of validity procedures is the lens used by the researcher. The lens is the viewpoint used by the researcher to establish the validity of the qualitative study in which is divided into the lens of researcher, the lens of participant and the lens of individual external to the study (Creswell & Miller, 2000).

For this research, the researcher validated the findings based on all lenses, which are the researcher lens, the participant lens and the lens of people external to the study. Within the lens of the researcher, the validity procedure used is the triangulation method. Biasness and inaccurate information can be eliminated by using triangulation (Pinheiro, 2010). Denzin (2006) identified four types of triangulation; data triangulation, researcher triangulation, theory triangulation and methodological triangulation. The methodological triangulation is used in this study.

This involves different methods used to collect the data which are interview, document review and observation. Another type of triangulation used is data triangulation, where the data was gathered from different participants (multiple unit of analysis) and from different organization (multiple case site) of the study and compared. Furthermore, to increase validity from the lens of participant, member checking procedure was adapted. For the member checking process, the participants were asked to clarify the transcribed data and comment on the researcher's interpretation to ensure accuracy and to optimize the validity of the findings (Given, 2008).

Thick and rich description is the validity procedures used to increase validity through the lens of the readers which are the external individuals of the study. The rich description of the study will provide as much details for the reader to understand the setting and situation and the credibility through the reader's lens can be established (Creswell & Miller, 2000). This procedure which involves contextualizing the participant by employing constructivist perspective is in accordance with the paradigm of the study which is constructivism- interpretivism

Besides, validation of the framework by the expert is used to enhance the validity of the study through the lens of people external to the study. A manager from Malaysia Productivity Corporation who has 10 years experience in consulting Lean Implementation in Malaysia, has validated the framework developed by the study. The validation form can be referred in Appendix H. In term of reliability, one of the strategies to enhance reliability of the case study suggested by Yin (2009) is the case study protocol. Reliability is concerned with representing the same findings which

are gathered by repeating the procedure of collecting the data (Baskarada, 2014). The development of case study protocol can ensure the reliability by standardizing the interview process. The validity and reliability procedures used are summarized in Table 3.3.

Table 3.3
Reliability and validity procedures

Criteria	Lens/ Viewpoint	Techniques	Research Level	Action
Reliability	Researcher	Case study protocol development	Data collection	Using a same case study protocol in every case.
Validity	Researcher	Triangulation <ul style="list-style-type: none"> • Methodological triangulation • Data triangulation 	Data collection	<ul style="list-style-type: none"> • Using three methods of data collection (interview, document review, observation). • Data gathered from different participants (multiple unit of analysis) and from different organization (multiple case site)
		Participant Member checking procedures	Data analysis	Participants were asked to clarify the transcribed data and comment on the researcher's interpretation
	Reader (external individual of the study)	Thick and rich description	Report writing	Provide as much details for the reader to understand the study conducted.
		Framework Validation		Asking expert in the field of study to validate the framework developed.

3.10 Summary

Chapter three discussed the methodology for this research. A qualitative research was employed using case study method. The data collection technique are interview, document review and observation. Based on the purposive sampling technique used, the study was conducted in public service organizations that have received recognition of excellent practices in lean management from MPC and still implementing lean in their operation. The data was transcribed and the codes and

themes were assigned through thematic analysis using Atlas.ti software. Three validity procedures which are triangulation, member checking and thick description was used to ensure the validity and case study protocol is used for reliability of the research.



CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

Chapter Four presents the outcome from the data analysis conducted using Atlas.ti software along with the interpretation of the researcher towards the data obtained. This chapter begins with the background of the organizations involved in the case study and the overview of their lean management initiative. The chapter is divided into themes, which consist of two main parts. The first part of each theme introduces the code using network view and displays the numerical output of Atlas.ti, while the second part answers the research questions based on the textual output of Atlas.ti.

4.2 Background of the Case Organizations

Five organizations were chosen as the case samples. Each sample is denoted with Case A, Case B, Case C, Case D and Case E in which are used to represent each sample throughout the report. These samples are Dewan Bandaraya Kuching Utara (DBKU), Pejabat Daerah dan Tanah, Kuantan (PDT), Majlis Perbandaran Kuantan (MPK), Perbadanan Kemajuan Negeri Pahang (PKNP) and Majlis Bandaraya Shah Alam (MBSA). These organizations are all five public service organizations in Malaysia that have received recognition of practices in Lean Management by Malaysia Productivity Corporation (MPC).

4.2.1 Case A : The Commission of the City of Kuching North / Dewan Bandaraya Kuching Utara (DBKU)

The Commission of the City of Kuching north (Case A) started its operation on August 1988 after Kuching was conferred as city status. The administration of

Kuching city is divided into two parts, where Case A administrates the northern part while the southern part of Kuching is under the administration of the Kuching South City Council . Case A has 1007 number of employees under its employment that consist of 35 individual from the group of management and professional, 696 staff from the group of support and 276 daily workers. A Mayor who needs to report directly to the Chief Minister of Kuching leads case A. Besides the Mayor, a Director assists him in daily administration along with five Deputy Directors leading each department. The departments in Case A are Department of Corporate Services (CPS), Department of Financial Services (FCS), Department of Regulatory Services (RES), Department of Planning, Building and Landscape (PBL) and Department of Infrastructure Services (INS).

Case A strives toward making Kuching as a rapidly developing city, prosperous, lovely, safe, clean and a well-planned city that not only can be proud by its people but also promote a good image to foreign visitors. With the mission to enhance the quality of life by creating a conducive environment, citizen engagement and best-in-world service delivery, Case A always works on improving its quality image and Lean Management has been accepted as one initiative that could increase their service quality. Transformation and Innovation Division (TRI), which is under Department of Corporate Service (CPS) is responsible to manage the quality image of Case A.

Lean Management in Case A

Lean Management was started in Case A on November 2013. Lean Management is introduced by the Malaysia Productivity Corporation (MPC), which also acts as the consultant. The lean secretariat for Case A is the Transformation and Innovation

Division (TRI), now led by Pn Ajing Kartini Binti Mohamad Ramlee. The secretariat is responsible in planning and monitoring lean management implementation for the whole organization.

The implementation of lean project in Case A begins with a small scale. It commensurate with only four groups and two groups completed the process. A competition was conducted within the organization to encourage the involvement of staff in lean management. The winners were accorded prizes and had the opportunity to compete with other public service organization in the competitions conducted by MPC. The lean secretariat has its own plans in order to ensure that lean implementation continues. Although the secretariat itself did not has its lean project, but they were also imparted with the knowledge of lean and had the opportunities to share the knowledge with other organizations such as the university in Sarawak. It means that the secretariat also understands the knowledge of lean and keeps updated with the knowledge because it is needed in planning and managing the lean implementation for the whole organization.

The first batch of lean implementation involves four groups, conducting four lean projects. Two groups have completed the process of their projects which are MAREQ group from (VAL) and I-BLACK group that consist of Audit division, Committee Secretariat Division, Legal affair division and Business development division. A Lean project in DBKU that was conducted by Valuation and Rating Division is named 'The evaluation process of new residential holding for the purpose of tax assessment'. The problem with the existing process is there was many backlog, which caused the customer (tax payer) to feel unsatisfied because the residential holding was not evaluated in a fast and efficient way according to the stated

schedule. Through lean management, the activities or processes that add no value and were wasteful, were removed and improved. The work process that usually involved 26 processes was reduced to 14 processes that saved 46 hours of processing time. There is also a own record system known as “e-daftar”, “Unit Rental Value directory”, and “File directory” though application of Microsoft Excel and Microsoft Access to record all the evaluation cases in a more efficient and faster way. The development of the system by Case A staff had reduce the office equipment cost such as A4 papers and logbook which previously used to record evaluation cases. The project leader of this project also revealed the impacts from the project implementation such as in the following quotations:

“ our lean project implementation had given impacts on the customers’ charter where we have provided the services in more efficient and faster way to the customers. By performing faster evaluation process, more official notice and bills for the taxpayer can be released. Thus, the revenue for the upcoming year is estimated to increase because we can handled more properties than before” (Project Leader)

“ up to now, there was no more complaints. We evaluate customer satisfaction based on the complaints’ call received. There was no call regarding the lateness of service provided in this year.” (Project Leader)

From the above quotations, it can be seen that Case A had gained many good impacts from this lean project implementation, which are faster service delivery, increase the revenue and achieve customer satisfaction. Besides, the implementation of lean project saved cost, workforce and time. Furthermore, the implications fulfilled Case A’s client charter, increased tax received by Case A and educated staffs towards

integrity and innovation. The client' charter is fulfilled by performing public service works in a fast and efficient ways according to the schedule. Besides, the increase in new holding that can be evaluated every year has directly increase DBKU revenue outcome.

In order to encourage the implementation of lean management, Case A has organized a mini convention as one of the lean program as a platform for the group members to present their projects. Awards were accorded to the winners. Furthermore, the winner of the convention acquired the opportunities to compete in state convention and convention organized by MPC such as Lean Creanova. Case A has received certificate for recognition of practices from MPC, which was issued on 18 September 2014 and valid until 17 Sept 2016.

4.2.2 Case B: Kuantan Districts and Land Office / Pejabat Daerah dan Tanah, Kuantan (PDT)

Kuantan district, which was administered by a District officer since 1805 has broad authority in land development affairs, social and taxation. To facilitate the administration of the district, the first district office was built in Medan Pelancong. Then, Kuantan Districts and Land Office (Case B) operated in Jalan Masjid since 1907 until 27 June 2011 where it then moved its whole operation to Bandar Indera Mahkota. Case B employs 178 staff. The mission of Case B is to manage the administration of district and land continuously in effective, fair and efficient in line with government policies while its vision is to become a leading organization in 2020. The District Officer manages four sections in Case B, which are Management Service, Development, Law and Land Management. Land Management Section is

the largest section that consists of five units, which are Land Development, Disposal, Registration, Enforcement, and Revenue & Account.

Lean Management in Case B

Lean Management was introduced in Case B since end of 2012. The decision to accept lean management approach is due to high number of complaints received by the organization. The public commented that the department's work was slow. The development in Kuantan district is very rapid. Backlog was increased. The staffs need to work faster to ensure that all the applications can be processed on time. The aim is to ease their customers so that they do not have to wait for a long time in dealing with the land office. The project leader as in the quotation below states one of the reason of implementing lean management:

“ we received a lot of complaints regarding the lateness of application’ approval. For example, when they dealt with land officer, the complaints that he received was the long time required to complete the process. So we thought that why do we have to wait for two or three month, and from there we found out on how to reduce the long process to one week”

Thus, in order to overcome the issues, Case B has signed memorandum of understanding (MOU) with MPC and automatically become the consultant to train and advise Case B on lean management implementation. Land Management Section under the lead of Head of Deputy District Officer is responsible in planning and monitoring the lean implementation in Case B. A lean management committee was formed to provide explanation on lean management to the employees.

The implementation of lean in Case B started holistically, where all six units were required to have their own lean project. The manager was excited to implement lean management. The manager learned and introduced lean, acquired the budget to provide trainings and was actively involved during the lean implementation process. The secretariat planned for regular monitoring where the managers and project leaders joined the discussions or meeting sessions to check the progress and to provide ideas in solving the problems experienced by the staff. The secretariat also arranged the meeting with the top management to be updated with the progress. It is also shown that the top management was committed to support lean management implementation. The first batch of lean projects did not just end. They had test to implement the project for a year. The completion of the first project initiated other projects to be solved using lean management. The uniqueness of approach used by Case B was in the context of building the teamwork among the staff. They believed on the importance of working as a team to ensure the success of lean implementation. The lean culture found to be existed through the action taken by the staff to improve their work continuously.

Six groups from different units conducted the first implementation of lean. The six lean groups formed are Land Disposal, Land Registration, Land Development, Enforcement, Revenue and District Development. Each group has their first lean project named 'Application to renew temporary residency license', 'Land transaction registration', 'Application for resubmission under section 204D/KTN', 'Application for monthly stone permit', 'Land revenue receipt' and 'Contractor appointment for quotation project'.

A project leader explained about one of their other projects, which is called ‘1WP/ One Week Process’. This project was introduced to overcome the lateness in the land development process for the approval of District Land Administrator. This project has successfully reduce the work process from 14 processes to four processes, lessen the working time from 45 days to seven days , save operational cost for the amount of RM 81911.32 and increase the state government revenue by six times (RM 569624.00). Besides, the other impact of lean implementation was shown by the project leader as in the following comment.

“ The impact from lean implementation has given us free time. Previously, we had time constraint. Our core business is ownership transfer. So three of my staff handled the process of grant ownership transfer. The main/ official job is so many and they did not have enough time to handle other task such as replying feedback letter, which require extra working time after the office hour. After the implementation, the time taken to perform main job and other task is enough to be completed within the office hour. So no overtime is required anymore.”

After the unnecessary steps in the process had been removed, the process become simpler and can be completed within the short time. All the applications can be solved faster and the staff has many extra times to do their other tasks during the office hour. Thus, overtime is not required, and leads to a cost saving for the department.

The other lean project is the application for monthly stone permit by Land Disposal unit. The process for application of stone permit had been changed from every month renewal to two times permit renewal yearly. A permit is valid for six months.

Previously, there were nine steps involved and require 43 days for the process to be completed. Then the next month, they need to come and apply again for the permit. It is a same process done repeatedly. The nine steps had been were reduced to only three steps. Therefore, the time to process the renewal of permit was reduce to weekly. The project leader of this stone permit renewal project had further explained the impact from the project.

“ for every permit renewal process, the officer need to go and visit the land in which will involve the claims for the use of company vehicle. It also involves time. So instead of they need to visit 12 times a year, they only have to do it twice. Thus, we save more on the financial aspect. Previously the process involves six staff but now only two person involve. We have save in term of time, cost and workers.” (Project Leader)

Besides the specific impact from the projects, the general impacts that have been achieved from lean managements was also been mentioned such as increasing productivity, creativity and innovation, increasing quality and integrity, reducing cost, improving service delivery, increasing workers' moral, and increasing customer satisfaction. The general impacts can also be seen from the next excerpt.

“ the benefits from the lean implementation are the work place become nicer, tidier, and safe, encourage the creative work flow, and efficient work processes. While the impact from the lean process is the improvement in service quality and work quality, save cost, and the increase in workers' morale.” (Project Leader)

After the implementation of the projects completed and the evaluation process finished, Case B has been certified with the recognition of excellent practice from MPC start from 4 June 2013 until 4 June 2015.

4.2.3 Case C: Kuantan Municipal Council / Majlis Perbandaran Kuantan (MPK)

Majlis Perbandaran Kuantan (MPK) or Kuantan Municipality Council was established on 1979. As the local authority for Kuantan, Case C performs four main functions which are administration, development, municipality services and societal. In order to administer the Kuantan area of 2065 km² with 490 000 people, Case C employs 1400 staff. This organization has a Yang Di Pertua (YDP) to lead 14 departments and 35 sections. Case C ascertains that Kuantan is developed efficiently and effectively through conducive municipal development, outstanding development of Kuantan people, the best administrative system with courtesy and integrity, complete and high quality infrastructure facilities, and preservation and conservation of sustainable environment.

Case C pledges to deliver high quality services efficiently, fairly and warmly for the clients. That is why they have been implementing many quality instruments such as Business Process Reengineering (BPR), Innovative Creative Circle (ICC), International Organization for Standardization (ISO), Innovation, Strategic Plan, 5S, Value Audit and also Lean Management. Due to excellent and passion in work in the area of quality management, Case C has won many awards in quality management such as Gold, Silver and Special Award in Geneva Invention, Local authority Innovation Award in Teluk Intan, Winner in National ICC Convention in

Sarawak, First runner up in ICC Convention-Public Sector in Kuantan and Gold Award in National ICC Convention East Coast Region.

Lean Management in Case C

The first idea to implement Lean Management in Case C was derived from the informal discussion with the MPC top management during National ICC Convention 2012 in Kuala Lumpur Convention Centre. Later, detailed information about Lean Management was received from the Director and the officers of MPC East Coast Region. Based on the reviewed document, there are three main reasons of why Case C decided to implement Lean Management, which are to reduce the operating cost through waste elimination, to improve service efficiency towards the customers and stakeholders, and to improve organization competitiveness using the best practices as a continuity to the existing quality instrument.

The implementation of lean management in Case C involved all the departments in the organization. The secretariat planned and managed the transition to lean by providing internal and external training, and disseminating the knowledge of lean management to the staff such as through information board and booklets. Lean was introduced through executive talk program along with hi-tea session with the staff for a glimpse of the change prior implementation of lean. The monitoring was conducted through meeting sessions where the top management showed their commitment by encouraging, challenging and motivating the staff to implement lean management. Before lean management was introduced, Case C had implemented many other quality instruments/ tool and quality improvement has become their corporate culture. Thus, the staff was ready to accept the change into lean management implementation. The management was interested in lean and was ready to implement

lean. They were able to provide budget for implementation due the size of organization that can generate high income.

The projects for lean management were chosen based on the vision, mission, and customer charter, and in term of complaints received. They have recorded the complaints from public such as lateness in service delivery. They focused on lean project that could benefit the public and fulfil their external customer expectation. However, they also have lean project that could benefit their internal customer, which is the staff. Out of 12 lean project, ten projects focused on satisfaction of the external customers while the other two project for the staff is on the application of housing loan and information technology called known as generation of attendance process for the staff.

A steering committee for lean management led by YDP and comprising of all Department' Managers and Section' Managers was developed to prepare the plans and ensure that lean management implementation in Case C is conducted smoothly. The secretariat for lean management in Case C is the Quality Management and Training Section managed by Mr. Rosli. Twelve groups were formed and twelve lean projects were proposed for the first implementation.

One of the lean management project in Case C is the verification order submission to the corporate management of solid waste and public cleansing. The project is conducted by the Department of Environmental Health and Services, which consist of eleven members. The reason for selecting this project is to make the process of verification order submission faster. Before implementing Kaizen, the verification order submission involved eight work processes. The number of work processes was

reduced to five process after Kaizen and the number of employees involved to handle the form was reduced from four to only two employees. The measurement of performance is shown through activity ratio, which increased from 25.7 % on current map to 60.35% on future map after kaizen. The long waiting time was reduced from 18 days to only one day. The prompt submission of verification order (VO) to Corporate management of solid waste and public cleansing (PPSPA) therefore allowed the cleaning process to be conducted faster.

Besides, during the interview session, one of the lean project explained by the project leader interviewed in Case C is application for bungalow plan approval. It is to obtain approval for the land to be used to build houses. Once the applicant submits his or her application, it needs to be addressed in the meeting and acquire the approval from the planner. The process usually took 14 days. For the approval, the requirement from the planner to be fulfilled is regarding the zoning where the land is located. If the land is located within the zoning of zoning area and not the industrial area, it will get the approval. The project aims to simplify the application process, make the process easier to the customer and can be approved faster. Therefore, the building department suggested to the applicants to ask their architect to get the copy of the zoning area before they send the application. The impact of the project is quoted as below.

“ so it will not waste the time especially if their application is rejected due to the zoning area. So, the architect should get the zoning and advise their client whether the land is acceptable. Then we can proceed with the plan. They need to submit their application along with the zoning statement. After they sent it here, our technical team just check at the counter passes to me to be signed and they directly get the approval. The applicant can get the approval

within an hour instead of 14 days” (Project Leader)

Besides the bungalow project, the building department also strived to ease public to build low cost house. Public mostly have financial problems to hire the architect . The solution for this problem is Case C has provided equivalent plan book with the cost of RM90. The applicant can fill the information, pay and obtain the approval as briefly mentioned below:

“ they do not need to hire architect. It becomes easier for them. The important thing is we work closely with the lawyer and make sure that anything that we want to do is not conflict with the act.” (Project Leader)

The general impact from lean management implementation in Case C is expressed by the manager as below:

“ our department’s image has increased after we have implemented lean. Our staff has become more motivated because we have seen many benefits and convenience thing from the implementation. Our staff has become more knowledgable. They are more open minded to accept change. Lean is about making change towards improvement.” (Manager)

Lean management implementation has not only increased customer satisfaction due to better and faster service provided, but it also gave benefits to the department in term of the company image and to the staff by increasing their knowledge, changing their mindset, and striving to make improvement in their work. From the lean implementation, Case C received certificate of excellent practices in lean management which was issued on 24 June 2014 and end on 24 June 2016.

4.2.4 Case D: Pahang State Development Corporation / Perbadanan Kemajuan Negeri Pahang (PKNP)

Pahang State Development Corporation (Case D) which performs its core responsibility in providing facilities and driving economic and social development in Pahang, was established on 27 December 1965 through Enactment Bill 12/56. Case D has 153 number of employees under its employment. Case D's main activities and functions focused on four sectors, which are Industrial Development, Property Development, New Commercial Hubs and Township Development, Investment, and Bumiputera Entrepreneurial Development. The vision of this company is to continuously be the main driver of economic development for the welfare of people, while the mission is to drive and generate state's economy through industrial development, real estate, and selective investment towards improving the socio-economic standing of Pahang.

The top management of Case D comprises of the Chief Executive Officer (Dato' Haji Abd Rahim Bin Mohd Ali) and the Deputy Chief Executive Officer (Dato'Hajah Khalijah Binti Abdul Malek) along with 13 managers that lead 13 departments in Case D. The departments are Internal audit, Investment monitoring, Strategic planning, Legal, Corporate communication, Industrial, Finance, Project development, Community & entrepreneurship development, Information & Communication Technology, Management services, Administration and Asset management, and Technical.

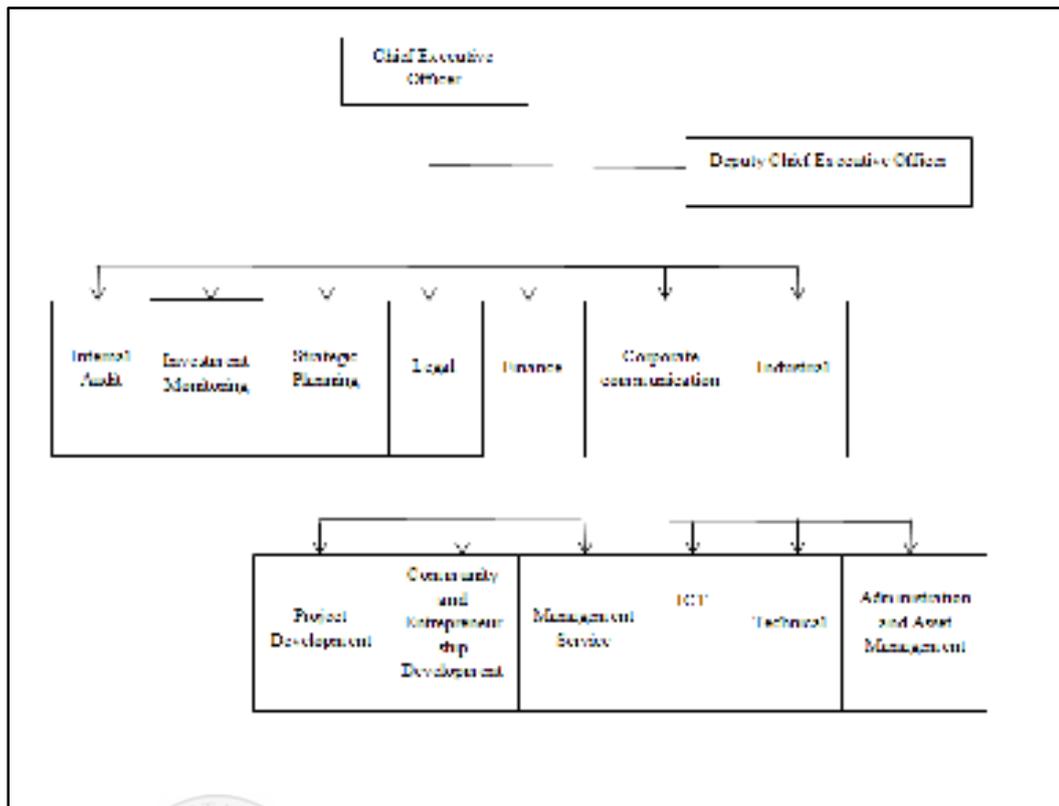


Figure 4.1
Case D Organizational Chart

Lean Management in Case D

Lean Management was started in Case D since 2011. Case D is the first public service organization in Malaysia that has implemented lean management under the consultation of Malaysia Productivity Corporation. The main reason of this organization chose to implement lean management is because many of the activities and function of the organization relate directly to the customers. Although Case D is a public organization, but as a Statutory Body, they also need to generate own income to pay the salary for their staff. Case D does not receive budget from the government so they have to make businesses to gain income. Therefore, the organization has to improve by satisfying their customers in order to encourage the customers to buy the service offered. Since their focus is on customer, Case D

believed that lean could help to improve the service delivery by identifying the waste in the work processes and therefore, their customers will obtain the positive benefits.

The Department of Management Service plays the role as the Secretariat for Lean Management in the organization. The manager, Mr Rasli Bin Jamil drives and monitors the implementation of lean for the whole organization. Every unit and section in Case D was required to involve in lean. Almost all units and sections have their specific lean project. Although there are few units that do not have their own projects, they are still involved in lean through cross- functional project. This means that the staff of the sections that do not have project, need to involve in the project handled by other sections and units because their function are required in the work process that have been chosen for the lean project.

The uniqueness of Case D was through the development of many lean programs to encourage the staff to participate and to cultivate the lean culture. They had organized lean competitions and prepared the rewards as the motivation for the staff to actively involve and gain the lean knowledge. The top management had prepared budget for the use of lean implementation. The chief executive officer was directly involved along the process from the beginning by attending the training and personally monitoring the progress of every group.

There are many lean project in Case D that were conducted using Value Stream Mapping tool such as Publishing Management, ICT hardware maintenance, Sales of Land / Industrial Site, Preparation of Purchase Agreement, Sale of Residential Premises that have ownership and to obtain bank financing, Rental Property Management, Training Management, Entrepreneurship training, Legal process for

rental premises, Consultant control, Exploration and Mining Agreement, Review and Determination System Specifications, Buyer Loan Financing Process and Claims Disbursement, Management of Premises for rent and Process Payments to Farm Contractors. While the example of Kaizen projects are Toner Management, Management fees from third parties, Tender Evaluation (Technical), Supplier Evaluation (Non - Technical) and Entrepreneurs Directory. Besides value stream mapping and Kaizen, some other lean tools used in Case D are Visual Management, Kanban, and Gemba.

The manager of management services explains the impacts from implementation of lean project in the following quotations:

“ the impact of lean implementation on the organization is in term of generating our income (cash flow) and our corporate image has become better” (Manager)

“ we found that lean can solve many problem occurred in the organization and it is not only can generate income to PKNP but it has improved the administration, the staff’ effectiveness and increasing the productivity. The staff solve problems based on facts and data.” (Manager)

As mentioned by the manager, the general impact obtained from the implementation is the increase in staff productivity, generating more income and increasing corporate image of the organization. Moreover, in order to show the specific impact of lean project implementation, one project is chosen, which is ‘The Sale of Residential Premises which have Ownership and Get Bank Financing’. The impact from this project is the increase of productivity, for example, preparation of purchase

agreement that had been stamped only requires three days instead of 18 days. This project has also impact on the conditions of architect appointment where before Value Stream Mapping (VSM) performed , 30 days are required to get a certificate of the architect but after VSM, the average time required to get the architect' certificate is five days. The implementation of this project also have the impacts in terms of the quality in which no errors in the document of Purchase Agreement and buyers can sign the complete agreement. There is no error because the information is in the specified format and the architect appointment is more systematic due to the use of certificate issuance system format.

Besides, the project leader interviewed had also shared one of the impact from lean project implemented by law section as shown below:

“ the project has save cost for about RM99 thousand and they got RM3000 for the reward from the company for their achievement. The project has not only save a lot of cost, but it has caused faster court action to be taken.”

(Project Leader)

The project was not only beneficial to the organization in term of getting huge cost saving, but it also benefit the group members of the lean project because they were given cash reward as the motivation on their achievement.

The department of management service itself has its own lean project. One of the project handled by the secretariat is 'training management'. It is conducted to improve the planning and monitoring process of the trainings provided for the staff. The following quote by the project leader explains the project and its impact.

“ the online system has also contributed in cultivating lean. For example, the training management project. Previously we had problem with the staff who were not submitting the evaluation form after they had attended the training. After we have the online system for the training, we use pop-up sytem to alert the staff to fill the training evaluation form online or elsewhere they cannot sign in for their online attendance. We also provide information and check their training status using the online portal”. (Project Leader)

As the lean secretariat, the management services department has to become a role model for other departments in encourage them to implement lean management. The project conducted has made the monitoring session by the management become more effective and in the same time has benefited the staff in term of fulfilling the training requirement.

Their first attempt in the implementation of Lean Management has gained recognition of practice from MPC, which shows that they demonstrated excellent practices in the area of Lean Management. The recognition of practice certificate was valid for two years from 4th June 2013 to 3rd June 2015. Case D continued its lean projects and renewed their second certificate for the next two years.

4.2.5 Case E: Shah Alam City Council / Majlis Bandaraya Shah Alam (MBSA)

Majlis Bandaraya Shah Alam (Case E) or originally known as Majlis Perbandaran Shah Alam (MPSA) was established on 7 December 1978 and started its operation on 1 January 1979. When Shah Alam was upgraded into City status on 10 October

2000, MPSA was changed into MBSA and managed by a Mayor. Case E has 1642 total number of staff . As the administrator for the capital city of Selangor, Case E tries to create a balanced council development in terms of social, environmental and economy for the well-being of its citizens. Case E is responsible in providing council services such as planning, provision of basic infrastructure, development, cleaning, public health, and beauty of the landscape. Case E's tasks include the development of people by organizing the community programs for the society, aids poverty, natural disaster, combating social ills and helping elderly and single mother. With the mission to enhance their service delivery system and administration to be efficient, effective, dynamic, and competence, Case E aims towards achieving the vision of transforming Shah Alam into a quality, conducive, peaceful and renowned city.

Lean Management in Case E

Lean was started by Case E on 2013. The lean management approach in Case E is known as Business Process Re-engineering based on lean. It is to re-generate new ideas in improving work process to fulfil customer satisfaction, improve quality, reduce cost, and save time towards increasing the productivity. An external consultant, which is Inno Global Consultancy, conducted a series of workshops for the Case E staff. The function of the workshop is to provide understanding and guide their lean projects. The coordinator for lean in Case E is Pn Wan Suraya Binti Sabahaludin, which is from Training & Quality Unit under Department of Management Service.

The participation from every department in Case E is necessary, thus there are 26 groups involved in the projects. Few examples of the projects in Case E are ‘ Refunding of deposits of permits’, advertisements license, and banners for the

collateral value less than or equal to RM50 in cash', 'Application of food control card', 'Application for building a telecommunications structure for one day approval' and 'Claims management of confiscated goods'. The impact from the 'Application of food control card' project is the reduction in time from 14 days before the implementation to three days. For the project of 'Application for building a telecommunications structure' the time taken starting from the application at the counter until the letter of application is received had decreased from 14 days to only eight hours where the approval can be given in one day.

The project leaders explain the evidence of impacts from the projects as below :

“ our client had complaint about there was so many procedures to be followed and involve so many forms. Previously we had 74 forms. So sometimes they become confuses about which form to be used and they made mistake submitting the wrong form. Once we have the lean culture, we start to think on what can be done to overcome the problem. We came out with an idea to composite the form. We grouped the 74 form into four forms only. So, we had save a lot. From lean, we have structured our mind to make people ease. We did something which can make things become better, faster and easier.”(Project Leader)

The quotation shows that by reducing the number of forms required has benefitted the customer and the staff in term of reducing work load and contribute to the cost saving for the organization. Next, the project leader explained about the projects by the Planning department.

“ The project conducted by planning department which was 'material change planning process' had reduced the time to process from 83 days to 60 days.

The change in term of material needs faster approval. For the letter, previously we have 14 days but now we cut it to seven days. Any part that we thought that we could make it short, we have done it” (Project Leader)

“For the planning department, the outcome from the project is the ‘doc maps’. They had prepared a complete document that is required to be filled by customer in one document so that they can just buy the document and fill it. Previously they encounter problem with uncomplete document submitted. But when everything is compiled in one document, it make their job easier.” (Project Leader)

“The implementation of ‘material change planning process’ project had reduced the time taken to complete the process. While the problems with confusion related to forms had also been solved through the lean project. They also get the feedback from the customer regarding their improvement made through the feedback form. The customer agrees that it is easier for them after the doc maps have been introduced.” (Project Leader)

Another project mentioned by the project leader is a project by the finance department as quotations below:

“ Refunding of deposits of permits, advertisements license, and banners for the collateral value less than or equal to RM50 in cash’ are conducted by finance department. The one- stop counter will check the document submitted in the system and the claim is released.” (Project Leader)

“The customer has to directly make the claims because we don’t want to hold their money for a long time and requires extra cost to take out the notice for them if they do not claim. After the customer submit the document, we straightly process in five minutes” (Project Leader)

The implementation of this project had saved a lot of time and cost. The customer just needs to show the original recipe and gets the claim on that day instead of eight days. Previously, when the claiming process was complicated, the customer might hold the claiming process. So, further work has to be done in term of sending them the letters for the reminder in which had cause more workload and cost.” *(Project Leader)*

The implementation has caused many good impacts in general such as reducing the cost, generating income and improving service delivery. The impacts are also shown in the following quotation:

“ the impact is good because it has contributed towards our service delivery which are better and excellent.” (Manager)

“ Because lean has make our job become easier, the process become faster and reduce time to go back and forth to many department” (Project Leader)

The implementation of lean project in Case E involved all departments and generally had contribute to cost saving and improving the productivity. Case E was the only organization among the five-sample organization that did not receive direct consultation from MPC. Although the improvement process shown was not in the form of VSM, the flow charts still able to show the improvement and impacts from

the project that has been conducted. They even prepared the feedback form for their customer to fill in order to rate and assess the effectiveness of the project implemented. Case E received certificate for recognition of practice from MPC on 2014.

4.3 Summary of Case Organization' Background

The above section reviews the background and lean management initiative of the study samples. All five organizations are the public service organization but is categorized into different type of public organization which are local authority (Case A, C, and E), state statutory body (Case D) and state government department (Case B). Case D differs from other four cases because although it provides service for public as other public organizations, it has to generate its own income. So the need to implement lean is not solely for the public benefit in providing better services, but also related on profit based which can also help in increasing their income. Case D is the first public service organization that received certificate for recognition of practices on Lean Management from Malaysia Productivity Corporation (MPC). Out of five cases, only one case, which is Case E that obtained consultation from other external consultant that, was invited to give lean training. The other four cases signed memorandum of understanding with Malaysia Productivity Corporation (MPC) to hire them as their consultant.

MPC introduces lean and focuses on conducting workshop for Value Stream Mapping (VSM). They guide the staff on using VSM to their lean project. Based on the document review during interview session with Case E, the terms used in their project report is Business Process Re-engineering based on lean. Their project improvement shown is in form of simple flow chart instead of in VSM form as

shown by other four organizations trained by MPC. Before lean was introduced to all the public organizations, they have implemented 5S, which is actually one of lean tool. The involvement of staff in lean was based on the lean projects. Every department/section/unit was required to form a group and prepare with a project. Therefore, each group has one project to be leaned. All organizations have lean project for each department/ section/ unit except for Case A which only started with four groups and has completed the process for two groups. However, only lean secretariat (Department of Management Service) in Case D and Case E have involved themselves in lean project. The other lean secretariats only manage and monitor the progress but do not have their own lean project. Information about the background of every case organization is shown in Table 4.1 and the lean management implementation in all five organizations is summarized in Table 4.1 below.

Table 4.1
Information on Company Background by Each Case Organization

Organization/ Case	Type	Year Establish/ Start Operation	Functions/ Mission	No of department
Case A	Local authority	1988	Making Kuching as a rapidly developing city, prosperous, lovely, safe, clean and a well-planned city	5
Case B	State Government Agency	1907	Manage the administration of district and land continuously in effective, fair and efficient	4
Case C	Local authority	1979	Develop Kuantan efficiently and effectively through conducive municipal development, outstanding development of Kuantan people, the best administrative system with courtesy and integrity, complete and high quality infrastructure facilities, and preservation and conservation of sustainable environment.	14

Table 4.1 continued

Organization/ Case	Type	Year Establish/ Start Operation	Functions/ Mission	No of department
Case D	Statutory Body	1965	Drive and generate state's economy through industrial development, real estate, and selective investment towards improving the socio-economic standing of Pahang.	13
Case E	Local authority	1979	Create a balanced council development in terms of social, environmental and economy for the well-being of its citizens.	26

Table 4.2
Information on Lean Management Implementation by Each Organization

Organization/Case	Start	Certificate issued	Consultant	Involvement in lean project
Case A	2013	Sept 2014	MPC	4 group
Case B	2012	June 2013	MPC	6 group
Case C	2013	June 2014	MPC	12 group
Case D	2011	June 2013	MPC	27 group
Case E	2013	2014	Inno Global Consultancy	26 group

4.3.1 Observation record

Based on the observation during the company visit, the implementation and information on lean management is displayed in the organization such as on the information board and on banners in which can be seen in Case A, Case B, Case C

and Case D. However, less information can be seen in Case E. According to the participant, the information is displayed when there is an event such as the innovation day. Besides, this may be due to the condition of the office, which is under renovation process. For all other four organizations, the arrangement and condition of the office are clean and tidy. Their implementation of 5S can be seen everywhere. Their staff were also all very helpful, polite, and treated customers politely, performed work fast and willing to share their knowledge.

4.4 Interview Data Analysis

The analysis is divided into three themes in which representing the three research questions as mentioned in Chapter one. The themes are challenges during transition to lean, critical success factors and managing change in lean. For every theme, the first section is on the numerical output while the second section discusses the textual output of the analysis.

4.4.1 Challenges During Transition to Lean

From the interviews done, there are four sub-theme for the Challenges during transition to lean, which are Resistance, Knowledge, Time and Resource as shown in the network view in Figure 4.2.

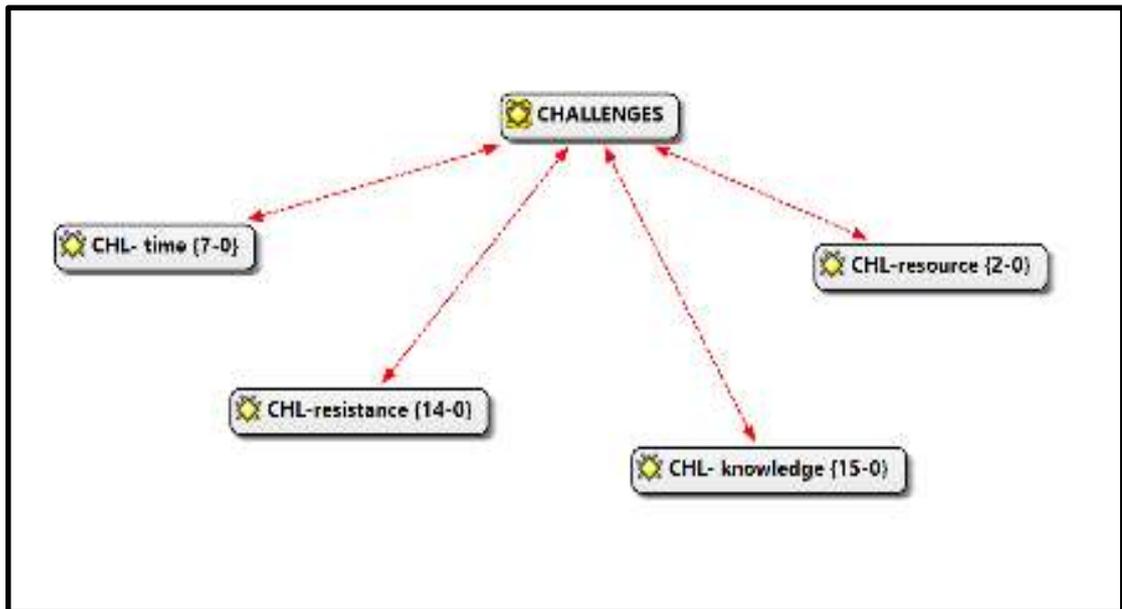


Figure 4.2
Network View for Challenges

Based on participant's perspective, 'resistance' refers to the act of the employees to resist the change to lean which occur at beginning such as giving excuses, delaying in doing work instructed and trying to avoid from involving in the activity. The challenge in term of 'knowledge' is on how to get the staff to understand lean knowledge, which related to training and the level of academic background. While the challenge in 'time' refers to the time constraint experienced by the employees such as to gather the group, prepare the documentation and to focus on training due to many main job in the office. Lastly, the challenge in 'resources' are related to constrain in resource provided for lean projects such as equipment and money allocation. This first part of this section displays the result of numerical output from the data analysis.

Numerical Output

The total number of quotations related to this theme is 38. The number of quotations for each code is shown in Table 4.3.

Table 4.3
Number of Quotations for Theme 'Challenges During Transition to Lean'

Sub-theme	Number of quotations
Knowledge	15
Resistance	14
Time	7
Resource	2
Total	38

The number of quotations for each code can be displayed according to each cases as shown in Table 4.3. From the graph in Figure 4.3 below, the lean challenge in 'knowledge' was mentioned by all five organizations followed by sub-theme 'resistance to change' which was described by four organizations. Case A,C and E experienced lean challenge in 'time' while only one organization mentioned about the sub-theme 'resource' which is Case B.

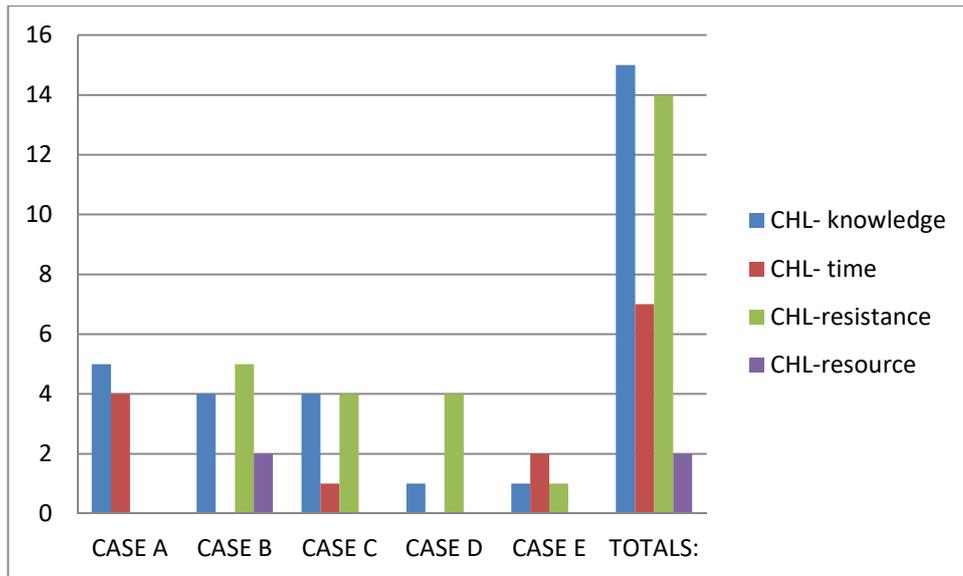


Figure 4.3
Challenges in Lean Transition by Case Organizations

Besides comparing the number of quotations for challenges according to cases, the analysis was done to compare the number of quotation for challenges in all cases based on different category of participant, which are Manager (P1) and Project Leader (P2) as shown in Figure 4.4. Both of the participants mentioned all four challenges. More quotations regarding lean implementation challenge in ‘knowledge’ and ‘time’ came from the managers while larger number of quotations regarding ‘resistance to change’ is from the project leader. This finding means, as the knowledge provider, the managers were experiencing more challenges in providing the lean knowledge to the employees. Whereas, the project leaders were facing resistance from the employees directly compare to the top management because the employees tend to share their thought or feedback directly with their immediate leader.

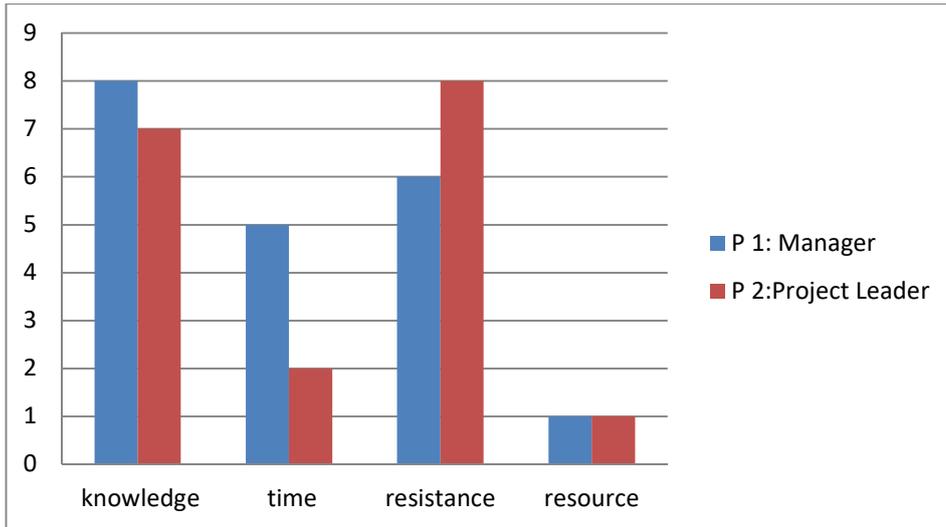


Figure 4.4
Challenges in Lean Transition by Participants

The comparison between the quotations of Manager (Participant 1) and Project Leader (Participant 2) can also be separated by each case as shown in Figure 4.5 below:

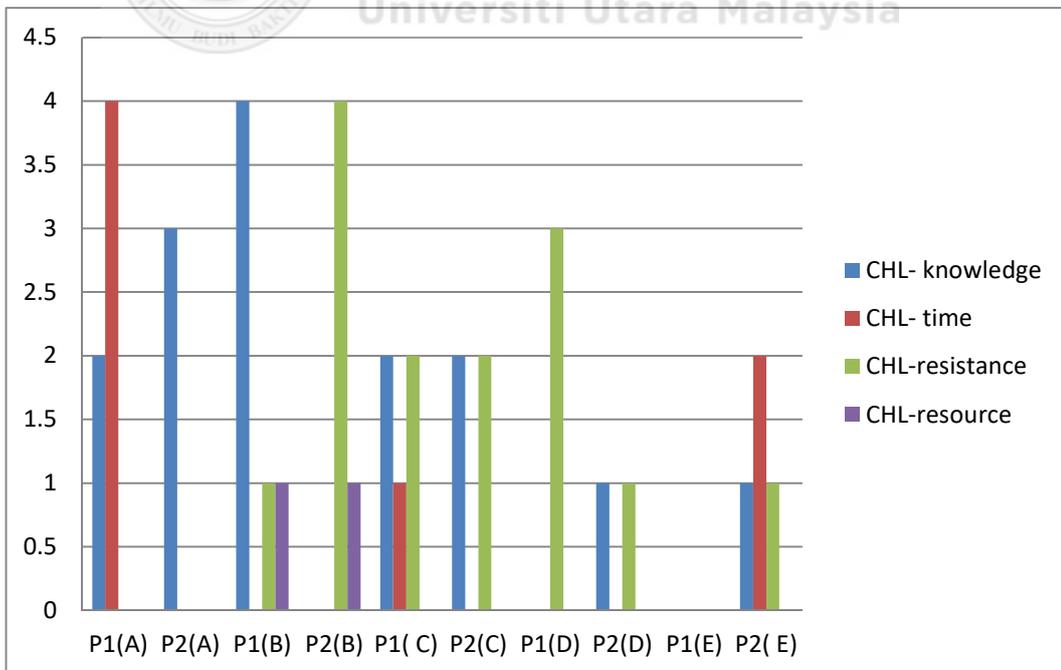


Figure 4.5
Challenges by Participants in Every Organizations

Figure 4.5 shows the comparison in the number of quotations by the Manager and Project Leader in each case. Case A only experienced lean challenge in ‘knowledge’ and ‘time’. The manager of Case A and Case C. mentioned the challenge in ‘time’. For Case B, only the manager emphasized about the lean challenge in ‘knowledge’ while the project leader was more concerned about the resistance to change. Both, the manager and the project leaders of Case B stated about the lean challenge in ‘resources’. For Case C, both the manager and the project leaders equally exposed about challenges in ‘knowledge’ and ‘resistance’. For Case D, the manager only highlighted about the ‘resistance’ while the project leader mentioned about the challenges in ‘knowledge’ and ‘resistance’. For Case E, the manager stressed that they had no challenge or experienced any problems. However, the project leader mostly revealed about the challenge in ‘time’. Besides, she also mentioned about the ‘resistance’ and ‘knowledge’. The challenges in lean transition stated by each participants for every organizations are summarized in Table 4.4.

Table 4.4
Challenges by Participants for Each Organization

	P1	P2
Case A	Knowledge Time	Knowledge
Case B	Knowledge Resistance Resource	Resistance Resource
Case C	Knowledge Resistance Time	Knowledge Resistance
Case D	Resistance	Knowledge Resistance
Case E	-	Knowledge Resistance Time

Textual Output

This section explains each sub-theme for the first theme, which is ‘Challenges during transition to lean’ based on the textual output from the data analysis.

4.4.1.1 Resistance

The sub-theme 'Resistance' refers to the resistance to change, which usually occurs at the beginning of the lean implementation. Initially, the staff resists the lean project assigned to them. The reason is that they are yet to understand and see the impact or benefit to them. As mentioned by the manager (P1) of Case B:

"...at first, there are few staff that resist. They said that they don't have any project and they cannot think ...".(BP1)

The manager of Case B also revealed that asking people to change is difficult. However, when the employees can see the benefit of lean implementation, there were no more complaining or resist. This is mentioned by the manager of Case B.

"...it is not easy to ask people to change, it is normal. But when they start to do it and they can see that it gives good effect to their work, so they are OK and go with the flow. They are no more complaining or resist until the end."(BP1)

The manager of Case C also experienced a challenge in term of resistance to change to lean management. However, in Case C, the resistance was from senior staff.

"..they have been in their comfort zone. Especially the senior staffs with age of 40 - 50 years old, they do not like the change. They thought that the way they do their job is supposed to be like the existing. When lean was first introduced, they do not fully understand what it is yet. So they said 'aah, we need to learn and go to workshop, it's so stressful to think and brainstorm'."(CP1)

The manager of Case D also highlighted that resistance to change can restrict the ability of the public sector to implement lean management due to the mentality of some of civil servant which is hard to accept change. Besides, the project leaders (P2) in Case B and C also have the same thought with the manager regarding the resistance to change during the beginning of lean implementation. It can be seen in the quotations from project leader of Case B and Case C as below:

“..normally, human nature just want to do the easy task, they do not want something stressful. At first, people will resist but later, they can accept and involve..” (BP2)

“.. at first, to change the mindset , especially the senior staffs is quite hard. They thought of what they could get from the change into lean.”(CP2)

Regarding the resistance to change, the participants believed that it occurs due to the mindset and habit that used to do jobs using the old way. The staff feels comfortable with their existing way and it is quite hard for them to accept before they understand and see the benefit. It is not mainly about they resist on lean but is more to the nature of human to resist change.

4.4.1.2 Knowledge

Beside the resistance to change, knowledge is also identified as the challenges in lean implementation. This sub-theme can be separated into three:

- i. Understanding lean knowledge

Understanding lean knowledge refers to the challenge to ensure the staff understands the knowledge of lean, both in lean concept and its application. The management is

required to conduct a few trainings for the staff to get them clearly understand the lean knowledge. Below are the quotations from the manager of Case B and Case C:

“.. During our first lean seminar, the staff still does not understand what is lean. They cannot see how it is because we have not do it yet. Then, after the training with MPC, they understood the lean concept and its application. MPC taught us on how to do it ...”(BP1)

“.. the biggest challenge that I see is in term of knowledge. That is why we have to do two or three workshops. Before that we also do the eye-opener session so that they are prepared since lean is a new thing.” (CP1)

Besides, the project leader of Case B found that the staffs have problem in understanding lean knowledge when they directly ask their project leader on the reason to do lean project and the benefits from the implementation. This is where the project leader has to explain to the staff to make them fully understand. As shown it quotations below:

“.. the staff asked: ‘ why we have to do lean?’. They cannot see it or understand it. Then we explain, if we do like this; this is before and this is after. Visually they can see the difference between before and after. Once they have understood, they want to do it.”(EP1)

The participants of Case A have different views regarding understanding lean knowledge. It seems that the staff still lack of understanding in lean knowledge because sometimes they had conflict in using Innovative Creative Circle (ICC) tool for lean project.

“.. we don't have much barrier during the process except regarding the lean understanding. The understanding is sometimes different. For example, when they used to solve problems using ICC tools and then come into the Lean project, sometimes they were confused. So, there is conflict between Lean and ICC. They use tools that are unnecessary in Lean.” (AP2)

This may be because the staff was more familiar with using ICC tools and the same members of ICC group were asked to do lean project. Since the staff expressed the problems in understanding the tools, the manager of Case A expressed her opinion regarding the conflict in using tools as in following quotation:

“.. my staffs said that ‘ it's very difficult to change the tools, the tools are different’. So, if we want to make it easier, I think you don't have to get a different tool for Lean or for KIK (ICC), standardize it so it will be easier. The process is you want to simplify something and you want to solve the problem. That is the way how I see it. We have to think, to make it easier in improving the quality..” (AP1)

The idea of the manager of Case A shows that she believed that making improvement is the most important instead of focusing more on the tool used. Lean is more than a quality improvement tool. It is more about accepting the principle of doing continuous improvement for the organization.

ii. Academic Background

Both participants (manager and project leader) in Case C said that the challenge in knowledge is due to different levels of academic background of the staff. The staff

with a higher academic qualification can understand the lean knowledge easier. The manager of Case C quoted:

“.. the staff that we had assigned to do lean project in their work process, have different knowledge and academic background. Not everyone has the same level of understanding. When the lean expert shows it, they do not know how to do it. But for the technical team that consist of the engineers and architects, they are very good and fast in understanding the knowledge that was taught.”(CP1)

For example, the manager also mentioned that the staffs with a lower level of academic background have difficulty to understand the calculation such as the waiting time where they have to multiply and divide. The project leader of Case C also stated the same issue.

“.. There is a little issue, it is from the staff on the ground. Because they have problem to write paperwork, report and all those things. It is a little hard for them. The boss has to prepare the format. We cannot expect them to come out with their own idea. The boss need to guide them on how to do it. But for us in this office, no problem.” (CP2)

The staff with the lower job position such as the clerk were having difficulty to prepare the documentation for lean project and need to be guided by their boss. However, it is not a problem for the staff with higher job position and higher education background.

iii. Knowledge through benchmarking

Knowledge through benchmarking refers to the challenge experienced by Case D to get the knowledge through the benchmarking process from other Malaysian public organization. It is because Case D is the first public organization in Malaysia that implemented by lean management. As stated by the manager:

“.. the barrier and challenge that we faceis they is no example of other Malaysian Public organization that have been implementing lean. We are the first government agency that implements lean. We do not have a guide in term of best lean management practices from other organization.”

Since they were the pioneer, the other organizations have taken Case D as their benchmark in implementing lean management. The decision of Case B to adopt lean management was also based on Case D. After they had successfully implemented and obtained the certificate, many other public service organizations in Malaysia had come and visit them to gain knowledge.

4.4.1.3 Time

Other than the resistance to change and the knowledge, the constraint in time is also one of the challenges in implementing lean. The participants from Case A, C and E mentioned that they have time constraint to focus on lean project due to their main work. As explained by the manager of Case A, implementing lean is not difficult. However, it is time consuming because they have many main jobs to do. Preparing the documentation for lean project is an additional work in which they really need time to do it. This is also shown in the following excerpts:

“..the constraint in term of time...it is because of the documentation. That's the thing. If you don't have to make the report, it's OK, no problem. It is fine

for them if they just have to think that they need to cut the unnecessary process without need to do the report. But there is no document.”(AP1)

Besides, the manager in Case C said they have constraint because of their main jobs in the office, which become a challenge for them to focus on training and to gather in their group. The following quotation shows their time constraint:

“..Sometimes whenever we want to concentrate during the lean workshop, suddenly we were called back to the office. The main jobs sometimes cannot be put aside. Besides, to gather the entire group member at a time, we have to accept the fact that not all members can be there. Maybe some of them have to go to for other training or have something else.”(CPI)

The project leader of Case E also mentioned that it is hard for them to find appropriate time for project discussion as quoted in the following quotation:

“..we have to sit down, we have to discuss with our staff . To find the time with the staff itself is quite hard.”

According to the project leader, since they were also busy with their main job, sometimes they forgot about their lean project. This is where the project leader and manager play their roles to always monitor and remind them.

4.4.1.4 Resource

The third sub-theme under theme ‘Challenges during transition to lean’ is Resource constraint. As explained by the participants in Case B, the resources needed are in term of financial and equipment such as computer. The manager mentioned that as

the state government agency, they are not generating their own income for their use.

It is explained as the following:

“...we are, subjected to the state government. So, the money is one of the constraints because for us, the budget for innovation (including lean project) is only taken from our management budget. However, the management budget is a priority for the office operation (operating cost). So sometimes it becomes a constraint to them.” (BP1)

The manager explained that any project that requires money has to use the management budget that has been allocated yearly by the government. Compared to the organizations such as local authority, they have no problems with budget because they can generate their own income and can control their own money. The project leader of Case B also shares their resource constraint in term of equipment as in the following quotation:

“.. sometimes the equipment that we need is not enough, such as the Personal Computer (PC). We have to share the PC. My staff at the front counter has to give his PC to be used by the customer (outside officer who allowed to retrieve data). So we are lack of equipment.”

Although Case B has some constraint in term of resources, they have successfully implemented lean and has came up with great projects which has been used by all other Land and District offices in Pahang. The resource constraint does not affect them so much because they can do a lean project, which does not require any financial expenditure. The lean projects also made them save more, work faster and satisfy the need of the public that receive their service. The evidence of cost saving through lean project were proved through the document review based on the primary

data. For example, the project called ‘One Week Process’ in which was conducted to overcome the lateness in the land development process, has saved the operational cost of the department for an amount of RM 81,911.32. Besides, the reduction of work process from 14 processes to only 4 processes, had contributed to faster approval process where 99% of the application were completed within one day.

4.4.2 Critical Success Factor

Seven sub-themes were identified as the critical success factor for lean implementation in Malaysian public service organization. These factors are ‘Employee involvement’, ‘Knowledge’, ‘Management Commitment’, ‘Communication’, ‘Culture’, ‘Teamwork’ and ‘Organization readiness’ as shown in the network view in Figure 4.6.

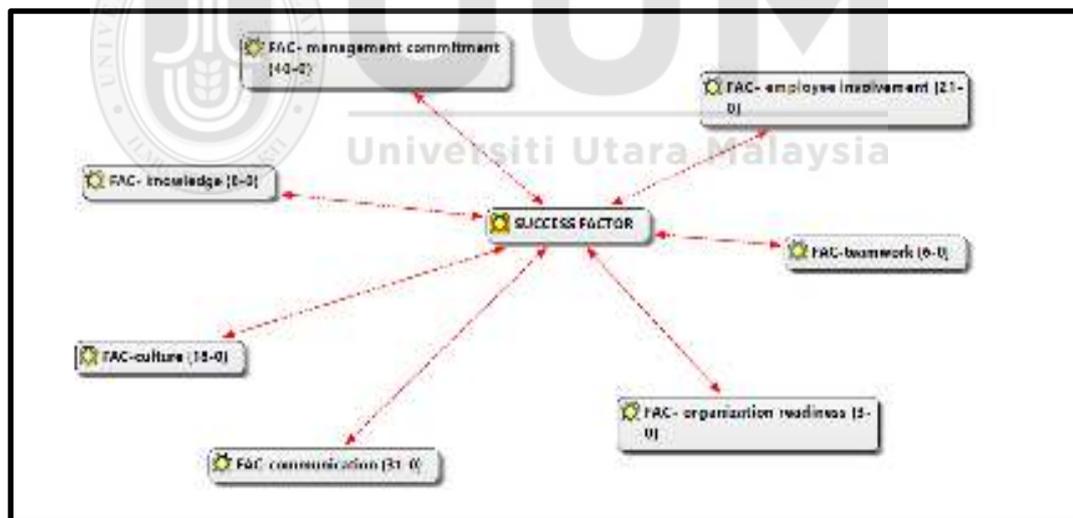


Figure 4.6
Network View for Success Factor

From the participants’ view, ‘Employee involvement’ is the acceptance and cooperation given by all staffs toward the lean initiative. ‘Knowledge’ refers to lean knowledge given to the employees, though trainings and knowledge sharing platform such as meeting, presentation and competitions to increase lean understanding.

‘Management Commitment’ is shown through the top management direct involvement, provide resources, monitor and motivate the staffs. ‘Communication’ mostly relates to the internal communication where everyone can communicate well between each other, such as discussion, express their thoughts and provide suggestions. ‘Culture’ focus on lean culture which is seen to develop when the employees continuously find ways to make improvement to their work process. While the ‘Teamwork’ means the cooperation of everyone in the organization, including the managers and all levels of staff that work together in lean projects. Finally, ‘Organization readiness’ refers to the readiness of the organization to adopt lean which is shown through their willingness to support and provide necessary resources for implementing lean.

Numerical output

The total number of quotations related to this theme is 127. The number of quotations quoted for each sub-theme is shown in Table 4.5.

Table 4.5
Number of Quotations for Theme ‘Critical Success Factor’

Codes	Number of quotations
Management Commitment	40
Communication	31
Employee involvement	21
Culture	18
Knowledge	8
Teamwork	6
Organization readiness	3
Total	127

Figure 4.7 shows the number of quotations for all sub-themes according to cases.

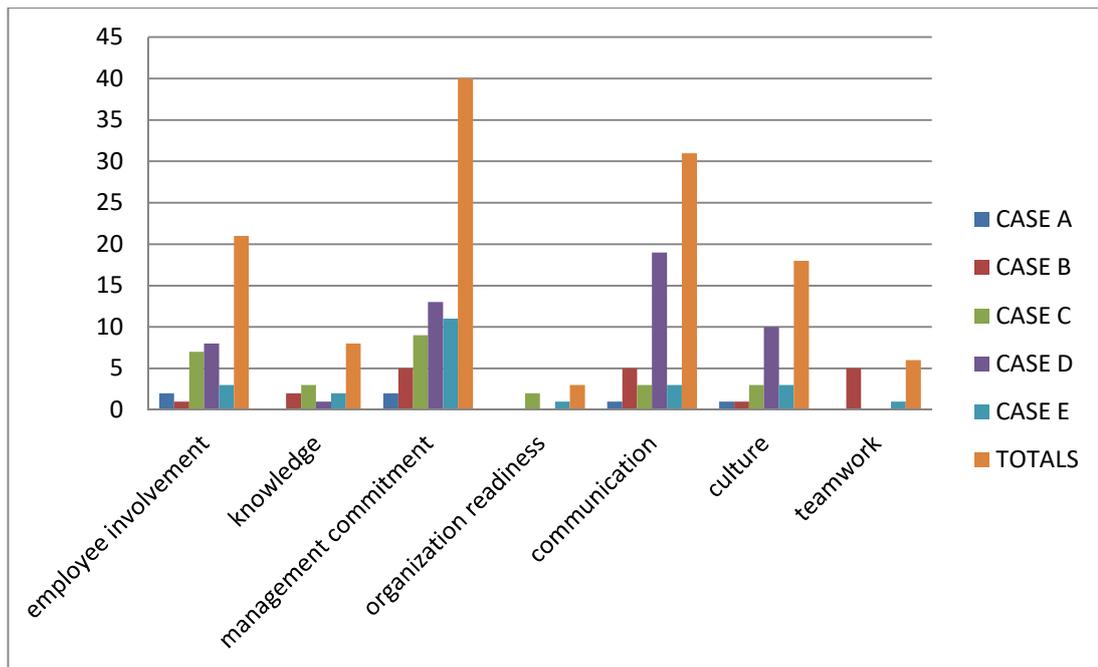


Figure 4.7
Success Factors by Organizations

Employee involvement and management commitment were recorded among the highest number of quotations from Case A, while for case B, three factors which are management commitment, communication and teamwork shared the highest number of quotation mentioned. Case C mostly mentioned about management commitment while communication was the factor with highest number of quotation recorded from Case D. For Case E, the highest number of quotation was related to the factor of management commitment. The graph has revealed the highest number of quotation recorded is management commitment and the lowest number of quotation mentioned is organization readiness.

As shown in Figure 4.8, the quotations regarding the success factors are separated into two which is P1 that represent the quotations from the manager or the lean secretariat and P2 representing the project leaders. Among the seven factors, there is only one factor that was mentioned by the managers which is organization readiness.

As the manager, P1 know about the organization better and thought that the organization's readiness is important to implement lean. They were also part of the top management that made a decision in the organization. The highest difference in term of number of quotations mentioned by the Project Leader (P2) compare to Manager (P1) is regarding the factor of 'employee involvement'. This may due to the status of project leaders as the implementer. They were directly involved in implementing lean and closely work with the employees.

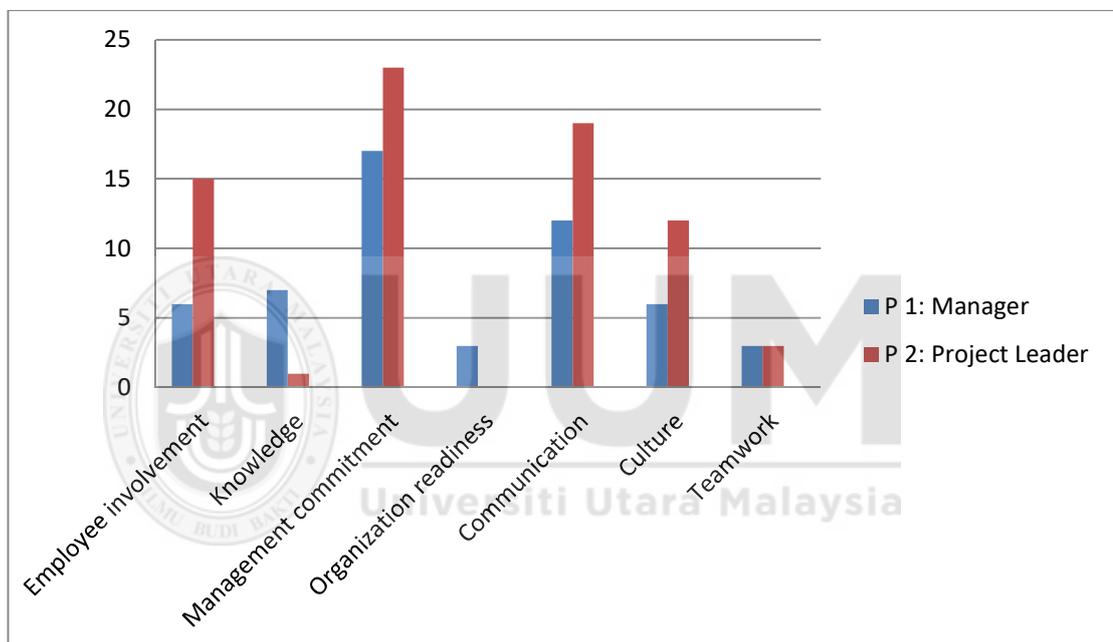


Figure 4.8
Critical Success Factors by Participants

The comparison between the quotations of P1 (manager) and P2 (project leader) are separated by each case as shown in Figure 4.9 below:

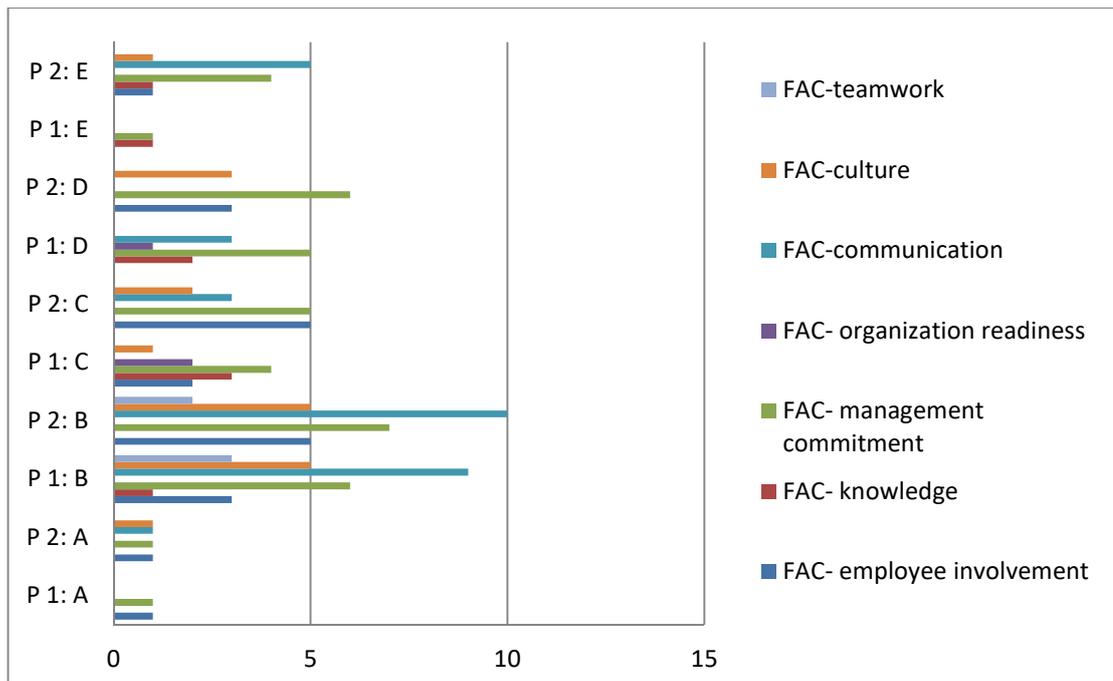


Figure 4.9
Success Factors, by Participants in Every Organization

From the graph above, the number of quotations stated by P1 (manager) and P2 (project leader) regarding the success factors can be compared within each organization. The factors mentioned by the managers and the project leader were separated and summarized in Table 4.6 below.

Table 4.6
Success Factors, by Participants from Each Organization

	Manager (P1)	Project Leader (P2)
Case A	Employee involvement Management Commitment	Employee involvement Management Commitment Communication Culture
Case B	Employee involvement Knowledge Management Commitment Communication Culture Teamwork	Employee involvement Management Commitment Communication Culture Teamwork
Case C	Employee involvement Knowledge Management Commitment Organization readiness Culture	Employee involvement Management Commitment Communication Culture

Table 4.6 continued

	Manager (P1)	Project Leader (P2)
Case D	Knowledge Management Commitment Organization readiness Communication	Employee involvement Management Commitment Communication Culture
Case E	Knowledge Management Commitment	Employee involvement Knowledge Management Commitment Culture

Based on Table 4.6 above, it can be seen the ‘management commitment’ is a factor that was stated by all P1 (manager) in every organization while the factor ‘employee involvement’ was mentioned by the P2 (project leader) of all five organizations. As the employees, the project leaders believed that ‘employee involvement’ is the factor that contributes to the success. However, the project leaders also acknowledge that ‘management commitment’ is one of the success factors as indicated in the quotations by project leader (P2) for all five organizations. Among all cases, only Case B mentions about ‘teamwork’. Case B is a unique case because both P1 and P2 believe that lean is about teamwork and can contribute to the successful lean implementation. They even conducted few teambuilding sessions prior introducing lean to create bonding and eliminate any dissatisfaction among the staffs in order to ensure that everyone can work together as a team.

Textual Output

This section explains each sub-theme for the theme ‘Critical Success Factors’ based on the textual output from the data analysis. From the proposed conceptual framework, four success factors have been identified which are management commitment, lean knowledge, lean culture and communication. Therefore, the deductive coding is conducted using the four codes which are FAC-management

commitment, FAC- culture, FAC- knowledge and FAC-communication. The short form 'FAC' is a theme which refers to the Success Factor. From the data, few emerging codes were identified through inductive coding. The three new codes are FAC- employee involvement, FAC-organization readiness and FAC- teamwork. Thus, a total of seven success factors are explained below with the support of the quotations from the interviews.

4.4.2.1 Management Commitment

All cases mentioned that the management commitment is the critical success factor for lean implementation in their organization. The manager of Case A, C, D and E stated that the management commitment is the main success factor as shown in the quotation below:

"..the main success factor for lean is the top management commitment.."(AP1)

"..the main success factor of lean in this organization is the commitment from the top management. Datuk, as the leader, his leadership is been brought not only by words."(DP1)

From the interviews, the management commitment was shown through their direct involvement, providing resources, support, and gives instruction. The top management of Case B, C and D showed their commitment in lean implementation through their direct involvement with the staff. It is proved in the following quotations:

"..Everyone is involved. The Director is also in the group. So when we propose to him, he can make decision on the spot."(CP2)

As explained by the participant of Case C, the top manager of Case C was said to be directly involved because he had attended the training session and become one of the group member for the lean project. So the staff can directly discuss with him and he can make the decision during that session. The top management of Case D is also directly involved throughout the process of lean implementation from the beginning where she attended all the lean training session, project presentation and audit process. Although the top management of Case A and E did not attended all the training session with the staff, they were still involved and aware of the project proposed by the staff. It is because the staff will meet their top manager after the training and present to him as shown in the quotation from the project leader below:

“..After our last workshop, we bring back our project and discuss with our big boss which is the department director whether he agree or not with our suggestion. The boss go through and said’ok, we can proceed’..”(EP2)

Besides the managers’ involvement, the commitment from the management is shown by providing resources. As mention by participant of Case C:

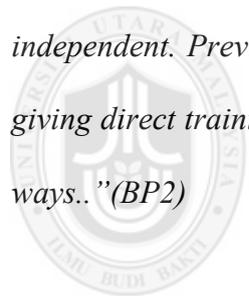
“.. if the top manager is not interested, we can’t do anything, because the power is in his hand. If he say don’t do it yet or we have no budget to do, the implementation will end. All the decisions are from him. Our top manager is not only interested but he is committed. That’s why he urges to get that (lean certificate).” (CPI)

From the aforementioned, it can be concluded that the top management of Case C was committed and provided resource in term of budget for lean implementation. The participant of Case D also mentioned about the management commitment by providing resource such as money allocation and changing the policy as below:

“The first thing is the top management must have strong commitment. Not just lead commitment by only talk but not do it. The top commitment is needed because it involves policy, the change in rules and involves money allocation. If the top management is not dare to allocate money and change the regulation, so it cannot be done..”

The third way to demonstrate commitment is by giving support to the employees. The project leader of Case B said that their head department gave strong support. Besides, they also show support in term of closely work with the staffs and personally trained them as quoted below:

“..he put a big hope on us so that we do our job. He trained us to be independent. Previously he trained me but now I can do it myself. He is not giving direct training. Silently he trained. Continuously trained using various ways..”(BP2)



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The project leader of Case B always mentioned about the commitment shown by his boss. He does not only monitor but also personally gives training to his staffs so that they feel confident and able to work independently. Based on the above quotation, the indirect/silence training given by the manager refers to the training given outside the class (seminars/workshop) where he indirectly trained his staff during work and coffee table time.

According to participant of Case E, the management gives support to involve actively in any quality program as shown in the next quotation:

“..The management gives support. Without the management support, we cannot even do it. Our organization is active in many quality programs. If

possible, we want to join all so that we will not left behind. Anything that will improve our work, we will join.”(EP2)

The above quotation shows that the management of Case E supports any kind of quality improvement program that has been introduced including lean management. The manager of Case A and Case C also mentioned about the same things in which their management is committed to support any quality program. The fourth way that shows the commitment by management is through their work instructions to the employees. As quoted by the project leader of Case D:

“.. If the Lean Champion is given to the clerk, maybe they don't want to listen to him. That's why the mover has to be the big boss. Even if the lower staff resist, the boss who handle the project know that it can happen. He gives order and said we do it and we will see..”

The employees have to follow the order especially when it comes from the top management. The top management of Case D has structured that the Lean champion is the Section leader. It is because the staff will follow the instruction from the section leader because he has the highest position in the section. The project leader of Case B mentioned about the push or pressure from the management, which had triggered the staff to think and prepare the lean project as instructed by the management. The quotation regarding commitment by giving instruction is shown below:

“.. the top management pushed us and we had to think what to do. When the management said that they want to look at our project, we sat down together and thought about what are the problems that we faced. I asked my staff and we thought of what to improve” (BP2)

Without the urgency from the management, the staff may postpone fulfilling the instruction and may find that it is not important. However, when the management keeps pushing, asking about their progress, they know that their managers are committed, and they are willing to contribute their efforts.

4.4.2.2 Employee Involvement

All five cases stressed on employee involvement as one of the factors contributing to the for success of lean implementation in their organization. As quoted by Manager of Case A:

“..Other factor would be the staff itself, their involvement.”(AP1)

The involvement of employees is important for the success of lean implementation. Without the involvement of the employees, the management initiative to implement will not succeed. As mentioned by Project Leader of Case D:

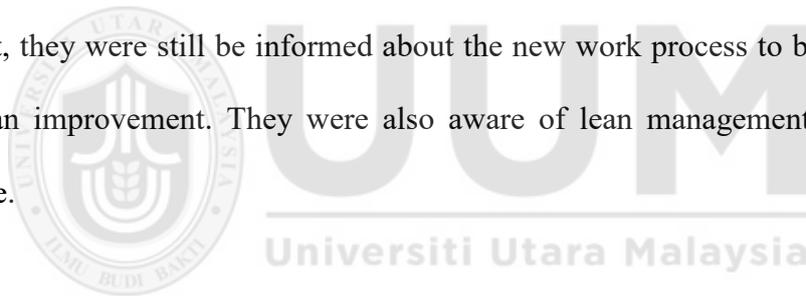
“.. If we make the program but staffs are not involved, we could not make it. All of them involved and gave full cooperation.”(DP2)

The manager of Case B shares the involvement shown by the staff in doing lean project. She was very satisfied with her employees' involvement in lean initiative where the staff showed their effort and enthusiasm in lean project and also have the initiative to give their ideas for their work improvement in which has become a culture in the organization. As stated in the following quotations:

“.. We can see. They enjoy doing it, they were excited. They bought paper using their own money. They collected money among them. MPC doesn't mind on how they want to present, it's their own effort to make it nice. They bought the cork paper, make it nice. These are their group effort.” (BP1)

“.. my opinion is..when I see them, they have the initiative to give their ideas. It not just us (management) who have to think what to do. We can see their commitment in which I think is very interesting.”(BP1)

The employees were involved and committed with their lean project. They did not mind using their own money for small things such as to buy the papers used in presenting their project. They were also willing to share ideas and discuss with their project leader and manager to find the suitability of the project to be ‘lean’. To ensure involvement from all staff, they were required to present different lean project associated with their work process. Therefore, each group will have their own projects. For the staff that is not directly involved in finding solution for the lean project, they were still be informed about the new work process to be followed after the lean improvement. They were also aware of lean management and willing to partake.



4.4.2.3 Knowledge

Knowledge of lean has been identified as one of the important factor. Lean knowledge is required to give understanding to the management and the employees. The managers mentioned on the importance of knowledge in lean implementation, which is to reduces the resistance that occur and make the implementation process easier, as stated by a participant in Case D:

“..After we have explained to them about the benefit of lean and what are the impact for us, then we show with the proof of the impact, and then the negative view slowly disappear. Now almost 100% involve.” (DP1)

The resistance only occurs at the beginning before they understand the knowledge and see the benefit to them. Once they have the knowledge, they can accept it and be involved. Besides, based on the view of the manager regarding the understanding of knowledge, he said that to attain success in lean, they have to understand it, which means they have to look at their condition and the level of their understanding. The manager of Case E also mentioned about the understanding of knowledge as the success factor in which it eased the implementation process. The quotation from Case E is as below:

“.. the other success factor is.. the staff is clear and understand what to do. We have to understand the knowledge of lean. Once we understand, then we can do it. If we do not understand, it hard to do it..”

Besides the new lean knowledge given before the implementation, the existing knowledge especially related to management and quality contributed to the success as stated by managers from Case C and D.

“ ..for example, our top management, most of them had attend courses in overseas, their academic background, most have masters. Previously they have also been sent to the management courses in Manila, India, etc. so when this thing (lean) come , they can absorb it faster.” (CPI)

“...before lean came, we already have quality stories. So we have the basic knowledge. Our staff was not shocked when we introduce lean”(DPI)

As the aforementioned, the manager of Case D also stated that the existing knowledge in quality have help them to accept lean as one quality improvement initiatives that have been previously introduced to them.

4.4.2.4 Culture

All cases mentioned about the existence of lean culture in their organization in which could ensure the success and sustainability of lean implementation. The excerpt from project leader of Case C below proved that the lean culture exists and the staff understood the concept of lean.

“..We cultivate it and once it has become the culture, every time we see things are cluttered such as ‘ oh, there are so many processes’, then we find way to solve it. They always think that we have to eliminate this (waste). We have to make it easy. As long as the way we do is to simplify work. Our target achieved and it is simple.” (CP2)

The participant above believed that the most important part is that lean need to be cultivated. She saw the lean culture develop from the improvement that is continuously made by the staff to their work process. The project leader of Case B also showed example of the lean culture existence in their organization based on what she experienced from her staff as shown in the following quotation:

“..when they saw that it can be done using new way instead of that old way, they told us. And we said ‘ok, you can change it, just do anything that could make your work easier’. Previously the job is performed by other staff and now when he/she do it, an easier way to perform it has been found,” (BP2)

The employees of Case B were also able to identify waste and suggested ways to make improvement to their work processes in which this proved that the lean culture exist. According to the project leader, when the staff thought of something in their mind regarding the improvement that can be done to their work process, they informed her (BP2). As an example from the above quotation, previously other staff

performs the job and now when the new staff does it, they found an easier way to perform and asked their project leader to obtain approval to do the change. The project leader of Case D also shared the lean culture demonstrated by her staffs as quoted below:

“ I can see the culture. They can come out with their issues by their own. Previously, we have to discuss the issue with them. Now, during the monitoring, there is no problem in approving the project. There is no more illogic project such as fixing the ceiling.” (DP2)

Furthermore, the project leader stressed that they have understood what is suitable and which work procedure that can be eliminated. Previously they were not sure on the suitability of the project to be ‘lean’, but now, they have clear understanding. All their suggestions on lean project can be approved. She observed that the culture has been developed in the organization. The project leader of Case D also shared the existence of lean culture where the staff is able to come out with new ideas and can accept the lean initiative well. All the quotations regarding the example of lean culture by the staff were mostly from the project leader of every case. This shows that the project leaders understand the employees act and attitude more than experienced by the managers since they were also in the category of implementer and they monitor their staff closely.

The organizations used their own approaches to cultivate the lean culture. The approaches used are through posters and lean competitions. The manager of Case C focuses on disseminating the lean knowledge around the organization where the lean posters were positioned on the information board. Besides, they also distributed

books and booklets to the staffs. One of the example is shown in the following quotation:

“.. in term of visual, we place the lean posters everywhere. It’s not because you are coming so we stick them. No. it is one of the way how we cultivate.”(CPI)

Besides, the manager of Case D mentioned about organizing lean competition to cultivate the lean culture. Through the competition, the staff can relate and use the knowledge of lean that they have for the competition. The competitions organized by Case D are unique because it is not the competition of the best lean projects, but it is the competition to make lean become interesting such as the photo voice out as in the quotation below:

“.. we also cultivate the lean culture using competition such as photo voice out because its more fun. The senior staff also involve. We make it as the competition so that it becomes more interesting. Although all those technical term in lean it quite hard to understand, don’t make this things become dull.”
(DP1)

According to the manager, the basic of lean must be there, for the project, the calculation remains and they cannot avoid that, but the organization introduce change in more friendly and exciting way which is, through the competition such as in photo voice out. The example of conversation in their photo voice out is as follow:

“ do they think doing transaction is simple? They ask us to stop payment?, it a waste’. ‘ I just come back from the bank, now I have to go again because they asked to cancel’. This involve many staff, journal and everything that

need to be handle.. By only cancelling the cheque, 4 out of 7 wastes have occurred.”(DP2)

Photo voice out is the competition where the staff act and take photo of them at work and include their voice in term of words that shows their issues and problem in their work process which is considered as waste and can be eliminated. Through the competition, the project leader found that they understand the lean concept and the staff can identify the waste in their work process. The competition has also developed the lean culture in the organization.

4.4.2.5 Teamwork

The manager and project leader from Case B mentioned about teamwork. They stressed on the important of having the same thought, united and work as a team. The quotations related to teamwork are as the following:

“..In one group we combine different level of staff’s grade including staff with grade I7 and N11. Lean is about we work as a team. In the work process, the lower grade staff such as the file finder, PRA or PAP also involved. For example, to find the grant is the responsibility of N11. But when he cannot find it effectively, it will slow down our work process at the officer level.”(BP1)

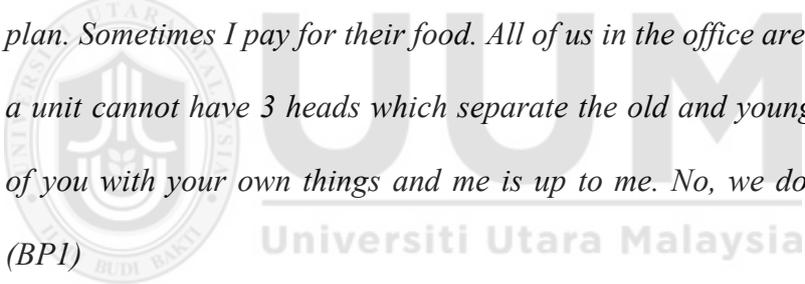
They combined different level or different position of the staff in a team so that they can work well together because each staff has their own function in the work process. Therefore, it means that along the way, every staff in the work process has to know and realize for the need to make improvement. Besides, she discussed on the need of

having teamwork between the management and the staff to ensure the sustainability of lean implementation. As quoted below:

“.. for the change management is we work as the team. If only us who work for it, top down, top down, it will last shortly, not sustain. Although they feel like being pushed, it is to move them. So at the end of the day, they feel happy because it makes their work easier.” (BPI)

As one of the effort to inculcate teamwork, the project leader of Case B shared an approach used to improve their teamwork, which is called a ‘coffee club’, as shown in the following quotation:

“.. we have our coffee club. We eat and discuss about our work. We have plan. Sometimes I pay for their food. All of us in the office are like siblings. In a unit cannot have 3 heads which separate the old and young or the thought of you with your own things and me is up to me. No, we don’t have that..“
(BPI)



They use the coffee-club platform to have food together and discuss about their work in informal meeting to develop teamwork among all staff and show respects among each other within the section. The project leader took this approach to create bonding among the staff and between also between him and his staff.

4.4.2.6 Communication

From the interviews, it can be seen that communication is an important factor that can contribute to the success of lean implementation. Good communication among the management and employees can be found in all five organizations. The communications ensure that the objective, order, ideas, support, and knowledge can

be disseminated well within the organization. Two way communications found to be occurred, in which can be divided into two, which are:

a) Two-way communication between management and staff

Two-way communication refers to the communication that occurs in two directions in which the management communicates with the staff and the staff communicates with their management. From the interviews, it is found that the staff communicates with the manager to obtain approval for their project. The manager will review the project and give the approval to proceed. The staff is also free to share their ideas. Besides, the top management communicate his vision and thought to his staff. From here, the staff will get ideas and work for the improvement. They also provide support and motivate the staff through communication. The quotations related to two-way communication between management and staff were mentioned by participants from all five cases. In Case B, the management heard the problems mentioned by his staff and he tolerated with them. This is shown in the following quotation:

“..During the meeting, when the management asked about why they do not prepare the project, they gave the reason such as we do not have enough time due to short notice. Then the management said, ok we accept that and we give you 2 more weeks to prepare it. So the staff will have to do it ..”(BP1)

The above quotation shows that both, the staff and the management communicate between each other. Since the management can accept their excuses, so they have to follow the management’s order. Another example of communication between the management of Case B and the staff is shown through the quotation from the project leader:

“.. once we got the project and have the improvement, we will show to him. He will give comments and he will go direct to those related to the process and inform them. He informs on what are we doing, what need to be done. He by himself communicates to other staff.” (BP2)

From the above quotation, it can be seen that the communication occurs regarding the lean project. The communication is through discussion session on the project. After the project has been approved, the management will communicate any information to other staff that related to the work process as well. The manager of Case C also mentioned about two-way communication between the management and their staff as in the following:

“..We do the project presentation so that everybody else could see it. If they have questions they can ask. For example ‘how did your project achieved this?’. So if the staff do not understand, the other staff can help. So the communication move in two ways. Two ways communication. Bottom up and top down. There is no problem..”(CP1)

They use the presentation medium to communicate regarding the project. Everyone can learn from each other during the presentation. The management also can keep track of their status and show his commitment to the staff through the communication that occurred during the presentation sessions.

b) Two- way communication between Project leader and staff

Two-way communication between project leader and the staff means that the project leader communicates with the staff and vice versa regarding their thought and their projects. Each of them are willing to contribute ideas so as a group, they discuss for

the most appropriate solution. The project leader of Case C shares an example of communication that occurs between her and her staff as shown below:

“.. we have to, not only ask them to do but we have to do it together. ‘why not we do it like this. Then they said ‘oo.ok’, ‘Madam, we got stuck in here’. Then I replied ‘ its ok, I’ll go and discuss with the management’.”(CP2)

The above shows that the project leader communicates with the staff during the process. The project leader works closely with the team members. The staff feels free to ask and discuss with their project leader. Although the project leaders mostly have higher grade (job position), they always discuss with their staff to get them involve in solving the issue. Besides, the project leader also communicates with the top management to solve the issue that they faced and to report their progress.

Communication Medium

From the explanation given by the participant regarding the communication, it is found that they have used different communication medium to communicate. The face-to face communication occurs through mediums such as meeting, workshop, presentation and discussion sessions in which used to communicate the lean knowledge and discuss on lean project. Besides, the communication is also performed through online medium such as WhatsApp in which usually used as the reminder for them or updating the status and share information. Furthermore, memos, online portal and radio are also used as the communication medium to disseminate information. The quotation related to one of the communication medium used by Case E is as the following:

“.. for each of our program, we will create one WhatsApp Group. So we will write ‘ submit now’, so everyone get it and will submit. It is unrecorded, just

for us as the reminder. Formally we will meet monthly to monitor the status of the project.” (EP2)

From the above quotation, they have used online medium called ‘WhatsApp’ to communicate among them regarding their work. It is the fastest and easiest way for informal communication since everyone is familiar with the medium. The project leader also uses it to remind the staff on the important date of submission. While the manager of Case D mentioned about three types of communication medium used as in the following quotation:

“..We also communicate through memo, online portal and radio. We take care of everything.” (DP1)

The mediums of communication used by Case D are online portal for written communication and radio for verbal communication. The memo is sent through online portal to the staff. The online portal is used to take the attendance of the staff. They do not have punch card as other organization. Through this, the management can monitor and remind to the staff if they have yet to fill the required form such as training assessment form because the reminder will appear (pop-up) and they cannot record their attendance before they fill the form. The information is also communicated through company radio. In a meanwhile, Case A also use have the company radio for communication. During the visit to Case A, the state anthem and a prayer were broadcasted through the company radio in the morning before they start to work. The prayer that is recited every day comprises of their hope to become a worker that is honest, efficient and work hard in fulfilling their responsibility towards customer. All staff stands and remains silent to focus on the radio. The company radio seems to be a good platform to communicate any other information.

4.4.2.7 Organization Readiness

The last factor to be reviewed is Organization readiness. It is referred to the capacity of adaptation of an organization. The readiness of the organization to implement lean is believed to contribute to the successful of lean implementation in Case A, C and D. They mentioned that their organizations were ready to accept lean since they have already familiar with other quality improvement tools. Their management is really conscious on making improvement for the organization and able to provide necessary resources in order to successfully implement lean management in their organization. All the quotations for organization readiness were mentioned by the managers of the organizations. The manager of Case D states the organizations' readiness as follow:

“..i think the second is, organization readiness as whole. Before we have lean, we already have the quality culture. We grew the quality culture from time to time. So when we introduced lean, it just continues. It is not totally a new thing. The quality culture is already moving. This make the lean movement easily happen in this organization.”(DPI)

The manager said that they were ready to implement lean because they already have the quality culture in their organization. The staff was familiar with other quality instrument before lean was introduced so they can accept it easily. Besides, the management was really supportive and ready to provide large budget for lean implementation such as organizing a study visit in overseas to give exposure and knowledge on lean. The manager of Case A and Case C also shared the same thought regarding the readiness of their organization to accept lean was due to their focus, which are already on quality improvement and therefore lean can be implemented easily. Furthermore, the manager of Case C mentioned that the success of lean

depends on the organization. The type and size of an organization will have influence on successful implementation as shown in the quotation below:

“..depends on the organization. Lean is closely related to the thinker. I mean, if the organization is called a thinking organization, then they can make it. It is also influenced by the size of the organization.”(CPI)

As explained by the manager of Case C, if an organization is called learning/thinking organization, they will be ready to implement lean because they were always willing to learn new things. While in term of size of the organization, the larger organization will be more ready to implement lean since they have larger resources in term of money and the number of employees that will move it and make it work.

4.4.3 Managing Change in Lean Transition

There are three codes for the theme of ‘MANAGING CHANGE’, which are ‘Monitoring’, ‘Motivation’ and ‘Training’ as shown in the network view in Figure 4.10. Referring to perspective from participants, ‘Monitoring’ is conducted regularly by the management to observe the progress and the status of lean projects. ‘Motivation’ is usually given by the management to the employees through word of encouragement and providing reward while ‘Training’ is provided to give lean knowledge which is conducted either internally or externally.

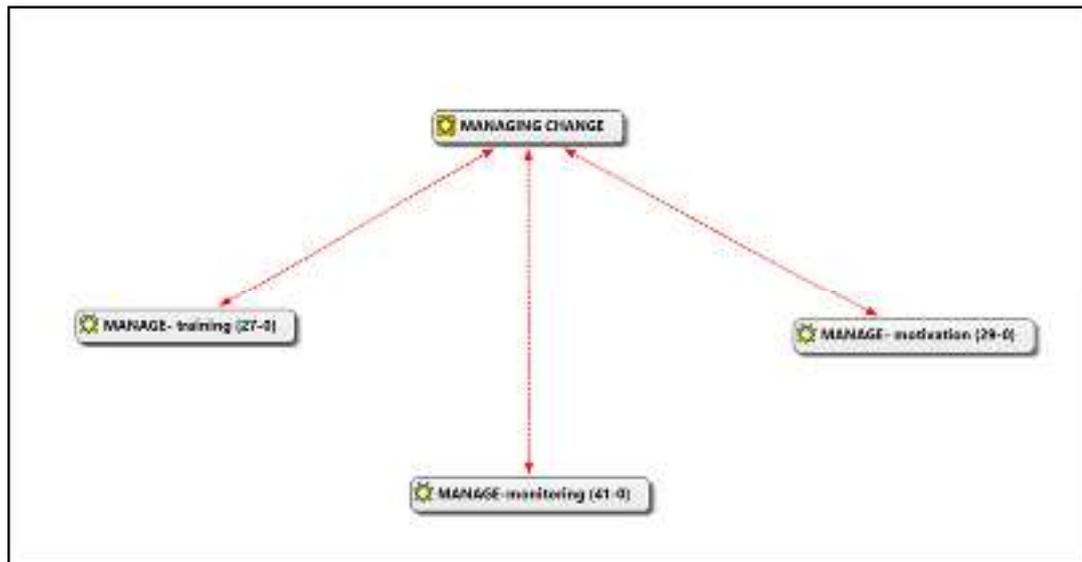


Figure 4.10
Network View for Managing Change

Numerical Output

The total number of quotation for this theme is 97. The number of quotations for each code is shown in Table 4.7.

Table 4.7
Number of Quotations for Theme ‘Managing Change’

Codes	Number of quotations
Monitoring	41
Motivation	29
Training	27
TOTAL	97

The number of quotations for each codes can be displayed according to each organization as shown in Figure 4.11. From the graph, it can be seen that all three codes were found in every organizations. This means that in managing change towards lean transition, all of them use monitoring, motivation and training.

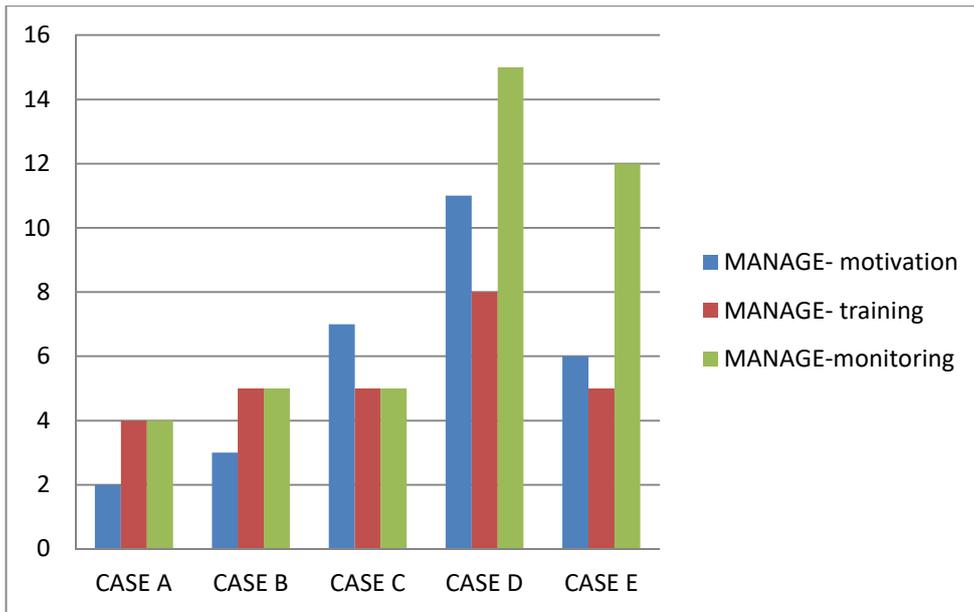


Figure 4.11
Managing Change by All Organizations

The figure 4.12 below shows the number of quotations by manager and project leader for each of the three codes.

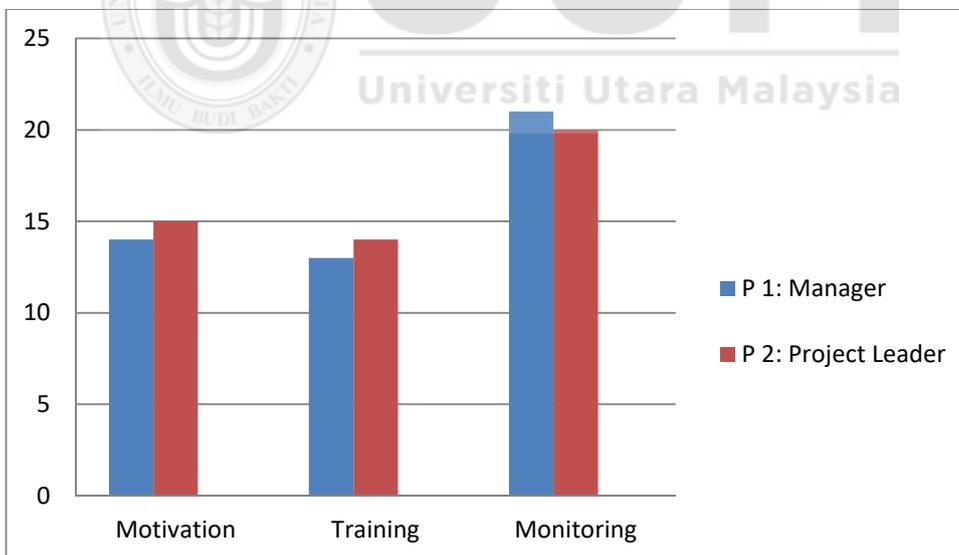


Figure 4.12
Number of Quotations for Managing Change Separated by Participants

In term of quotations to answer RQ3 about managing the change, the number of quotations from the managers and the project leader are almost equal. Among the three codes, which are Motivation, Training and Monitoring, none of the codes show

that there is a slight difference in term of quotations from the managers and the project leaders. Both type of participants that are the managers and project leaders share the same responsibility in term of giving motivation, providing the training and do the monitoring to the employees.

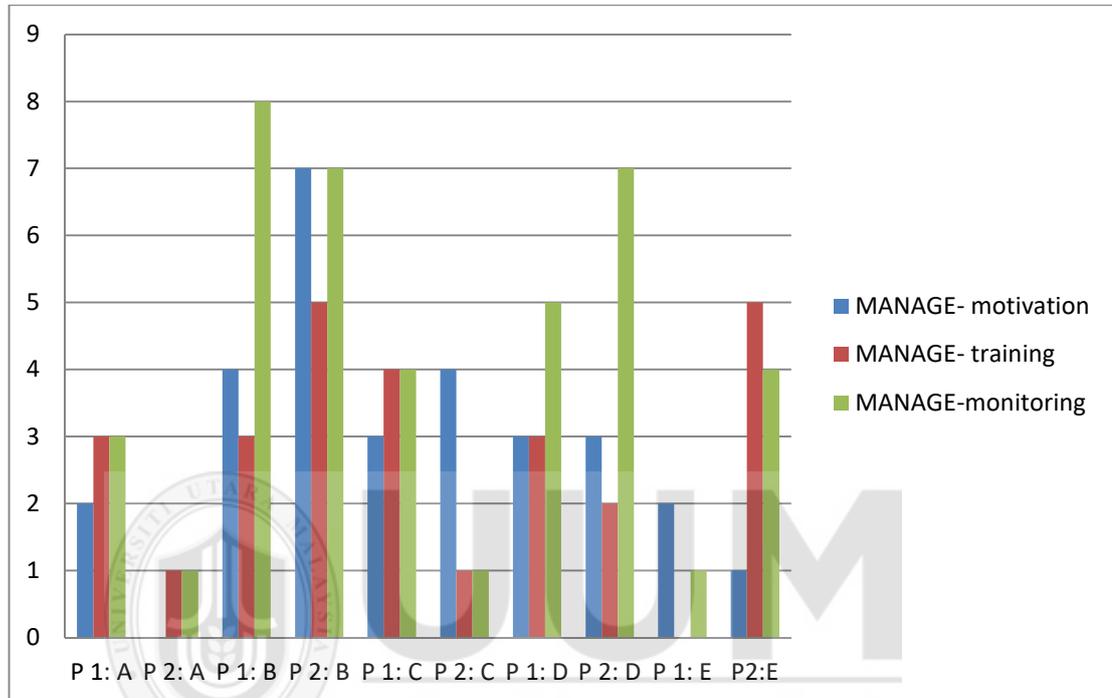


Figure 4.13
Number of Quotations for Managing Change by Participants in Every Organization

The number of quotations by P1 and P2 for each code can be displayed according to each cases as shown in Figure 4.13 above. Almost all participants from all organizations quoted on the three codes. The only code that was mentioned by all P1 and P2 from every organization is ‘Monitoring’. The next section explains the textual output from the data analysis related to managing change in which will start with the brief introduction of the lean secretariat and the steps involve in implementing lean and followed by the explanation of each three codes for this theme.

Textual Output

In order to implement lean management, the organizations have formed the lean secretariat that has responsibility to plan and manage the implementation of lean for the whole organization. The main function of the secretariat is to prepare the implementation plan in which includes providing the training, performing lean promotion, monitoring and reporting the progress, and motivating the staff. All the managers that have been interviewed are the leader of the lean secretariat of their organization, as explained by the manager of Case A:

“So we are doing this entire plan. We are the secretariat, we monitor what they have to do and then we push. I think our secretariat is the one who mostly push them.”(AP1)

The secretariat provides a general Gantt chart to guide the implementation. It is their responsibility to move and monitor the progress of the projects. Each group of the section involved have their own specific planning according to their project in which will be closely monitored by the project leader and their section manager. The secretariat of Case B also monitor their staff progress regularly and after they had made sure that their staff was well prepared, they will set an appointment with top management for progress presentation. The project leader of Case C explained on the roles played their lean secretariat in term of providing the knowledge to them as in the quotation below:

“..he is the mastermind of all these. He is the one who arranged the training with MPC. He distributed the lean booklets. The management also gave some explanation. He explained on the benefit. He did all the lean promotion, gave awareness, conducted workshops and taught us.”(CP2)

He, in the above quotation refers to the manager of corporate department which is also the lean secretariat of Case C. His responsibilities includes arranging the trainings, performing lean promotion, conducting workshops and motivating the staffs. While the manager of Case D, which is also the lean secretariat of the organization explained on the planning that they have developed to move lean implementation and to monitor the staff. Their roles are shown in the following quotation:

“..we have our program. As the secretariat, every year we come out with the program which called periodical table. We have one meeting timetable for us to control the monitoring for all section. The other one is Presentation timetable. It is for the presentation of lean projects by every section. We also have plan on that.”(DP1)

The timetable has helped them to keep track of the status of the projects by the entire sections involved. Besides, the lean secretariat for Case D did not only make the planning and monitoring, but they also have their own lean project to become the role model for other sections as quoted below:

“..as a head section, every monthly meeting I will stress on lean. My section is the secretariat for the whole organization. So we have to be strong, we must be the role model because they will refer to us when they have problems. So for me, I work hard in implementing lean because other section will look at us. We do planning for the whole program.”(DP1)

Furthermore, the lean secretariat functions includes preparing lean information for the staff, conducting lean programs such as lean competitions and providing report regarding lean training for the auditor.

From the above review, it can be seen that the lean secretariat is responsible in managing the lean implementation of the organization. Their roles include preparing the implementation plan, organizing the lean programs including the trainings, monitoring the progress and motivating the staff. In order for them to manage the transition to lean, they have prepared their implementation plan to be followed. The participants explained on the steps taken from the beginning of the implementation until they have implemented their lean projects and obtain the certification. Most of the organizations are willing to share their document such as their Gantt-chart and the steps taken during the transition to lean towards the implementation stages.

Their plan or the steps involved that have been obtained from the interview and document review are compiled in Table 4.8.

Table 4.8
Steps Involve in Lean Implementation

CASE A	Identify group → training → monitoring → convention
CASE B	Lean awareness talk → lean implementation committee → 1 ST training: lean management/office → team building/ project selection → 2 nd training:VSM → consultation visit → evaluation
CASE C	Team formation → identify work process → lean management workshop bil 1/2013 → Seminar on public service transformation through lean management → lean management workshop bil 1/2014 → Program Enhancement Excellence Clinic (EEC) → 2nd lean management workshop bil 2/2013 → document preparation workshop → evaluation visit
CASE D	Lean office courses → group formation meeting → workshop on VSM 1 → workshop on VSM 2 → workshop with executive sponsor → evaluation
CASE E	Talk on lean management → Form group → Workshop with consultant → 2 nd workshop → Discussion with manager → Follow up discussion with consultant → Implement

The steps taken for lean implementation in all cases can be summarized as in Figure 4.14 below.

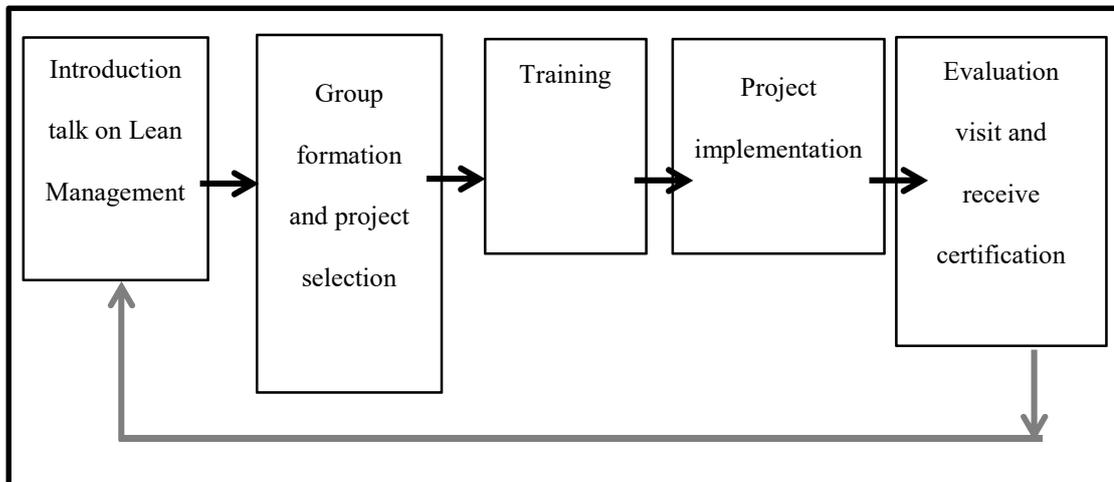


Figure 4.14
Steps in Lean Management Implementation in Malaysian Public Service Organization

For every organization, the lean process (starting from the training until they implemented the projects and get certification) took approximately a year to be completed. Based on the plan/ steps taken above, it can be seen that the plan mostly focuses on trainings. The talk or courses on lean management were conducted to introduce and give awareness for the staff. It is then followed by few series of training in form of workshops, which focus on the tools and the projects. Besides training, monitoring process has occurred either through discussion, meeting or project evaluation. Thus, it can be seen that the organization focuses on training and monitoring in managing change in transition to lean. The next section looks into how the organizations manage the transition to lean in which consist of three ways which are training, monitoring and motivation.

4.4.3.1 Training

One way on how they manage the transition is by providing training. Training was provided to give knowledge on lean. Based on the interview, two types of training were mentioned, which are internal and external. Internal training refers to the training conducted by the organization and usually held inside the organization. External training is the training provided by the outsider such as the Malaysia Productivity Corporation or other external consultant. The quotations regarding the internal and external training are listed below:

“.. we don't have problem to provide training but we collaborate with MPC. We can't give training by ourselves but we give awareness... They were being guided because we paid to MPC. They taught them on how to do it. So we are in constant learning. We have never give up in helping our staff to do it.”
(AP1)

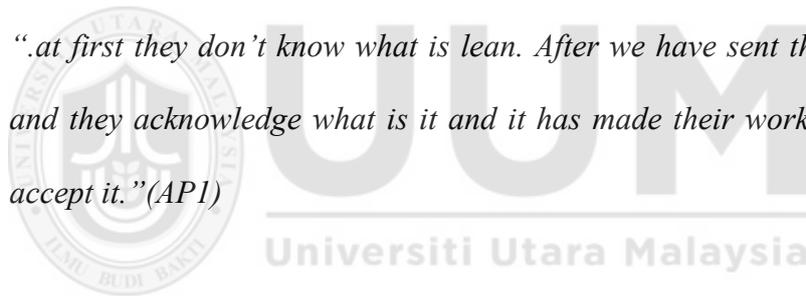
“.. when I attended the lean seminar in Sunway, I learnt new things from the lean champion masters around the world. I found that they are many other tools that relate with lean but in the scope of lean project that we did, we never thought that the scope is wider. So we get information from there. It was organized by MPC and lean applied.” (AP2)

The above two quotations were taken from the manager and the project leader of Case A. They mentioned about the training by the consultant from Malaysia Productivity Corporation was delivered to the staff and they gave internal training to the staff. While the project leader shared the experience that he gained from the external training in which was sent by the company to gain more knowledge on lean. The participants from other cases also mentioned about the training conducted to the

staff either internally and externally. Both, the manager and the project leader believed that training is very important to obtain knowledge and understanding for everyone before they can start to implement lean.

The training conducted internally was to introduce lean which focuses more on theory. For practical knowledge, the organizations usually hire consultant to conduct the training for the staff. Four out of five organizations were trained by MPC. Only Case D used another external consultant. Training is very important to be conducted especially during the transition to lean. The main purpose of training is to give lean knowledge so that they understand and can accept it. It can be seen from the quotation from the manager of Case A:

“..at first they don't know what is lean. After we have sent them for training and they acknowledge what is it and it has made their work easier. So they accept it.”(API)



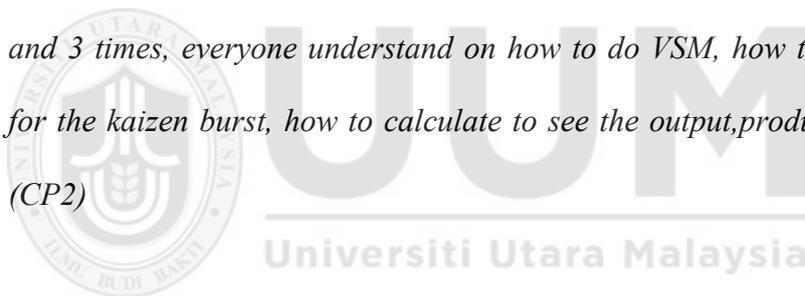
Providing training will not only deliver the knowledge on lean implementation, but it is also required at the start to increase their acceptance towards new way of doing thing in which at the same time can prevent the resistance to occur. The other purpose of training is to cultivate lean culture in the organization through deep understanding of lean knowledge, as explained by the manager of Case C:

“..at first, the staff thought that it is a work load. How we change their thinking is through civilizing. We did many lean promotions, many training, we ask outside expert to come and give talk. We use all the training to guide them. We also sent them elsewhere outside to give them experience, exposure, training and seminars.”(CPI)

The manager believed that lean will make the job become easier if the staff really understands it. He also stated that lean provide satisfaction to their job because through data and facts, it can dismantle the hidden thing that they cannot see it before. The series of trainings were conducted to give better understanding and to ensure that the lean culture is developed within the organization. Meanwhile, the project leader of Case C also shared the same thought with the manager where she stressed that few numbers of trainings is needed to provide understanding on technical aspects and its practicality. It is explained in the following quotation:

“.. before the workshop, everyone blurr. Take the papers, stick and stick them. We want to see the process. the VSM, we stick at the wall and then do the simulation. The understanding.. can't get after one training. But after 2 and 3 times, everyone understand on how to do VSM, how to do kaizen.and for the kaizen burst, how to calculate to see the output,product and so on..”

(CP2)



The understanding regarding lean knowledge and how to apply the lean tool cannot be achieved from just one training session. It requires few series of training to give them more understanding on it and after that they can implement it well. The third purpose of training is to act as a platform of discussion and to gain knowledge from lean consultant. As explained by the project leader of Case E in the following quotation:

“.. firstly we gave talk. Then we ask them to find project so that we can discuss during the training .He discussed with us and provide suggestion. We told him what was our problem and how we want to solve it. And then hel said, why not you do it this way so that your problem is settled. That's what special about the consultant; he can see the most suitable approach.”(EP2)

During the workshop with the consultant, the staff had discussed their ideas and the consultant gave recommendations and advices to them regarding their projects. After the workshop, they still request to meet the consultant and arrange few discussion sessions with the consultant. The project leader also mentioned that errors might occur, thus they need for a quick recap with the consultant. Besides, training session can act as a discussion session among the group members and with the consultant where they can focus on their lean project without any distraction.

The training is given continuously from the start and along the implementation. It is not only for the new staff but it is also for existing staff to improve their knowledge on lean, as stated by the manager of Case D:

“.. here, for the whole year we have our plan /timetable. The lean training is separated with other training. We do it many levels. For the staff who never attend the training yet, we sent them. For the staff that already attend, we sent them for the training to improve their knowledge.” (DP1)

In Case D, the lean training is being given continuously to the staff either for the new staff of the existing staff. It is to give new knowledge and to refresh their existing knowledge on lean so that they can continuously implement it. Besides, the project leader / manager personally trained the staff that did not have the chance to attend outside courses in order to share the knowledge that they have gained. The project leader of Case D quotes:

“.. usually, the training and announcement are made during section meeting. So when they involve in lean, during the lean discussion they can also learn the things. In every project we have a champion, facilitator and team leader. All of them know because they have been exposed with lean courses. They

shared their knowledge with lower staff whose were not involve in the courses.”(DP2)

Lean champion, facilitator and team leader share knowledge with other staff during section meeting. Not all staff is given the opportunity for training. Thus, this platform is used by them to share the knowledge that they have gained with other staff that does not have chance to attend the training. For Case B, they have a unique approach regarding the training. Before focusing on lean workshop and project, team-building approach is used to create bonding between staff, provide knowledge on lean and motivating them. The project leader of Case B explained as the following:

“..to change is not an easy thing. During the team building, we explain to them what is lean management. .previously we have constrain in staff and very high backlog. We come to the office at 8 but at 5 we still cannot go back. I said to them ‘do you want to return home earlier,at 5pm?’.. So change the way we do our job. We have to change the culture, must change the attitude so that during our work, we do it in an easy way.”(BP2)

The team-building approach used is to create teamwork among the staff because they believe that lean is about teamwork. During that time, the project leader approaches them closely and explains to them in an easiest way so that they understand on the need to do lean. It is also one way of giving exposure and knowledge on lean. From the interviews with the participants in all cases, the quotations regarding the training approach show that they prioritize on training as the basis that is required to change into lean management implementation in their organization.

4.4.3.2 Monitoring

For the project leaders and the managers, monitoring means to keep track of the progress and the status of the lean project. Both, the manager and the project leader do the monitoring. The only difference is in term of whom they monitor. The project leader closely monitors the project of his/her group, while the manager has to monitor the progress of all groups in the organization. As the lean secretariat, the manager has to report the progress to the top management. As mentioned by the manager of Case A:

“I will report to the top. This one, we will report quarterly. We have to report and we have meeting on this ..we do the monitoring. So we will always get them to report to us. We send e-mail to them, asking the status of their project. (API)

The above quotation shows the way of monitoring performed by the manager of Case A which is through meeting and e-mail. She reports the progress quarterly to the top management during the meeting. The project leaders report their project status to the lean secretariat through e-mail. In Case B, they have conducted two separate presentations for the staff to present their progress. One of the presentation is for staff to present their progress to the lean secretariat, lean champion and the project leaders. Once they were ready, the manager set the second presentation that will be attended by the top management. The following quotations revealed their monitoring approach:

“..we just mention on when we want them to make presentation. So they will arrange their time to do it. By that time, they must present the project. They will plan within their group. We give the dateline.” (BP2)

“..after they have settle their presentation, the project leaders and the lean champion gave comments and provided them with the input for improvement. Then we presented to Datuk” (BP2)

The presentation session performed is not only to monitor the progress but is also used as the knowledge sharing session where the project leaders and the lean champion provide the input to the staff for improvement. They will make sure that the staff is ready before presenting to the top management. As the top man of the organization, he will spend time to attend the presentation session to monitor his staff's progress on lean projects and the work process involved. The project leader also closely keeps track of the project that has been implemented on the work process to trace any problems if arose. The quotation below explains his action:

“..we always cultivate attitude. Who cause the process to stuck, will be shoot. We know where the process stuck. Then we repair and repair again. If there is a need to change the staff, we will change it, internally. We monitor. At the back of our clip file project, there is a paper for the signature. So when the project stuck, we can trace where it stuck, at which section we will know.”(BP2)

The project leader observes the work process and monitors the status using project file. He will make sure that everyone does well and the process will run smoothly. Besides, the projects leader will guide and give order to their staff on what need to be done. The project leader mentioned that although they have the awareness, it does not mean that they do not have to be monitored. Sometimes maybe they do not know what to do so the direct order is important. A leader must know the work to be done and ask the staff to do it. The staff will follow the order.

For Case C, both the manager and the project leader stated that their management monitors the progress of work process that involve in lean during the meeting and follow-up the project closely so that the staff will see that they are committed. The project leader mentioned that in term of subordinate, if the top manager and the intermediate work on it, they will also follow and do it. However, if there is no one push, they will be stagnant. Such as at the operational level like the clerk, if no one gives order, they will work as usual. The manager will also visit the office to check the file and see the status of every work process.

As for the Case D, they also use meeting and presentation session to monitor the progress of lean project. The manager of Case D mentioned that the secretariat has to report the progress of the lean projects to the management every four month. The section leader and the section manager have to monitor the implementation of projects within their section while the top management uses presentation session to monitor the progress and provide the platform for the staff to learn from other groups.

“we make presentation so that everybody can see and learn. If they have question, they can ask. They have to update on their progress. If they do not do it, they will feel ashamed in front of other staff and Datuk. Datuk will ask why you do not do it?.so by hook or by crook, you have to do it. We have our plan. we control based on that. So we have no problem to move it.”(DPI)

Besides monitoring through meeting and presentation, they use online portal to monitor the staff. For example, it is used by the training section to handle and monitor the training of every staffs so that they fulfil their number of training required by the organization. The staff need to fill their training evaluation form

online after every training session. For Case E, they also use meetings to monitor the progress of each groups. The coordination meeting is held every month so that the secretariat will get the feedback and status of the project from every head department.

From the above review, it can be seen that the monitoring process is done by the top management, head of department/ section leader, the lean secretariat and the project leader. The project leader is the person who closely monitors the projects done by his/her group member. The section leader/ head of department monitor the progress of all groups within his department/section. Then the secretariat and the top management are responsible to monitor the lean projects for the whole organization. The monitoring process that is done regularly act as the reminder for the staff to continuously work for the improvement. It is required because sometimes they may forget on their lean project due to other essential jobs. The organizations use few medium for monitoring the progress such as meeting, presentation, online portal, e-mail and by observation. Monitoring through various medium is an effective way for the management to be updated with the progress of the lean projects and as the platform for the staffs to communicate and discuss together in order to ensure that improvement through lean continuously occur within the organization.

4.4.3.3 Motivation

Another way on how the organizations manage the transition to lean is through motivation. Motivation was given by the top management, the lean secretariat and the project leaders for the staff to encourage them to participate in lean implementation. Few approaches are found to be used by the organizations to motivate the staff. It is given from the beginning of lean introduction to make them

feel motivated to attend lean training. It has been done by conducting the training outside the organization such as in a hotel seminar room. The manager of Case B and Case C explained on how this approach has made them feel motivated to attend lean courses:

“..the staff also feel bored if always attend training in the office. So when we go outside, the environment is different. Besides, at the office has many distractions, in the middle of training sometime people called to meet. There is no disturbance when we do training outside the organization. We can focus.” (BP1)

Attending training in new environment has made them feel motivated and able to focus on their training. At the hotel, they can cover two sessions with MPC in only one workshop session. They also have session at night to complete the project and therefore, they can complete it within short time. The manager of Case C also mentioned about motivation using outside courses as in the following quotation:

“.. when there were lean courses outside the organization, we send them. Because they can also travel, for example to Langkawi. They were very happy. We gave them chance. There were also lean programs that we sent many of them. We feel happy when we went for outside courses. That's the kind of things to motivate.”(CP1)

The manager said that the staff were happy to attend training outside the organization because at the same time they can travel and feel encourage to open up their mind for lean. Another motivation given is by conducting the study visit as mentioned by the manager of Case A, Case D and Case E. An example of quotation related to study visit is as below:

“ in term of incentive, we don't have direct incentive. We sent the group for the study visit so that that they can learn some knowledge from it.”(EP2)

The group of the winning project will get opportunity to go for a study visit. Case A and Case E mentioned that they did not give direct incentive in term of money, but they were sent for a visit to give new exposure and knowledge on lean from other place. For Case D, they organized many lean competitions and prepared award and incentives for the winners as the motivation for the staffs. The motivation given is shown in the next quotation:

“ we have innovation day. We did many lean promotions to give encouragement for the workers to seriously involve in lean movement. So we have prepared some budget on it. We organized many lean competitions to encourage participation from everyone.” (DP1)

The management of Case D provided large amount of budget for the purpose of lean management implementation. They conduct competitions to civilize lean to all staff and giving the award and incentives to motivate them. Case E also gave award for the winners. The following quotation shows that they were motivated from the reward:

“ we do it as the competition. From the competition then we see what we get from lean. We receive award. We feel good that we win. So it not useless.”
(EPI)

The project leader of Case D explained on the motivation given by their top management through praises and recognition during the meeting. She gave an example as in the quotation below:

“..Even in the management meeting, the top management always gives acknowledgement ‘ this department is good’. He praised and he recognized them. When he is like that, it’s like rolling ball. Everybody else will say’ we also can do it, better’. He developed the competitiveness. When they seem to be slow, he said’ I challenge you to do it”(CP2)

When the top management gives award to the winner and praise them for their good effort, it develops competitiveness among the staff. They also feel motivated to try their best and get recognition from their top management. The recognition through words from the top management can motivate the staff to do their best. It is also can be seen in Case B where the word of encouragement is one way of giving motivation to the staff. As explained in the extract from the project leader of Case B:

“.. we said ‘this is important to be done, our project is like this,, our aims is to ease people. We give them encouragements through words. ‘today you give contribution, tomorrow someone else will also contribute.’ Beside I stressed that ‘ if we don’t want to do extra job, its better to do lean so we can avoid doing extra job’”(BP2)

The project leader said to the staff that they need to be innovative. He encourages them to contribute to their department. He explained the need of doing lean management to make sure that everyone understands and is willing to contribute. Furthermore, he explained on how he motivates himself and his staff through words as shown in the following quotation:

“I said to my group member ‘ we want to be happy with our work. When we do it, one day we will remember our contribution. So you will say to yourself, this it what I have done/ change when I work with this organization.

remember this. We doesn't need people to know what we are doing. Its inside your heart..(BP2)

He encourages them to contribute for the department in term of doing the improvement to their work. He believed that it would also be a happy memory for them after their pension. He motivates himself and his staff to do good things and serve for their own benefits without expecting anything in return.

Based on the quotations regarding the motivation, it is found that motivation shown can be divided into two which are through words and rewards. The words of encouragement and praise were given by the managers and leader to the staff in order to motivate and encourage them to support lean implementation in their organization. The managers used the meeting platform to motivate the staff by always praising and acknowledging them for their good job. The rewards given such as in term of sending them for study visit, organizing training outside the organization and giving awards and money for winning the lean competitions are among the approach used by the public organizations to make their staff happy and feel motivated to get involve in lean.

4.5 Summary

The data was analysed and the result or the output of the analysis from the Atlas.ti is displayed in three forms which are network view, numerical output, and textual output. The data analysis was discussed based on the themes. The first section of each theme shows the network view of the codes along with the numerical output that shows the graph of each analysis based on quotations counted. The second section of the result discussed the answer to all the research questions based on the

textual output. The challenges experienced by the organizations are Resistance, Knowledge, Time and Resource. The factors for successful lean implementation are Employee involvement, Knowledge, Management Commitment, Communication, Culture, Teamwork and Organization readiness. Lastly, three important aspects in managing change towards lean are training, motivation and monitoring.



CHAPTER FIVE

DISCUSSION

5.1 Introduction

The chapter consist of two parts, which are discussion and conclusion. The first part of the chapter consists of the findings from chapter four that have been summarized and discussed. The discussion is supported with findings from previous studies. This discussion part is divided into four main sections where the first three sections discusses the finding based on each research question followed by a section that discusses on the conceptual framework that have been revised based on the findings. While the conclusion parts consist of five sections which begins with the conclusion from the research finding according to the research objectives. It is followed by addressing some recommendations from the study, which are made mainly for the public service organizations and also for the government as well as for the consultant. Next, the contributions of the research toward the theory and practical are presented. The second last of the chapter subtopic reveals the limitation and suggests some recommendation for further study. Lastly, it ends with the overall conclusion of the study.

5.2 **RQ 1: What are the challenges experienced by the public service organizations during transition to lean?**

When asking about the challenges experienced by the organization during lean transition, the answer given by the participants can be categorized into four codes which are 'Resistance', 'Knowledge', 'Time' and 'Resource'. The challenges in 'Knowledge' had been mentioned by all cases and recorded the highest number of quotations among other challenges. The second highest quotation recorded is a

challenge in 'Resistance'. The least quotation recorded is regarding challenges in 'Time' and 'Resource'. Only one case was mentioned about the challenge in term of resource, which is Case B. There is no clear difference between the challenges mentioned by the Manager or the Project Leader. Both the manager and the project leader shared the same challenges. The first challenge experienced by four of the cases except Case A is 'Resistance'. The participants stated that the challenge of people is hard to change. Most of the participants mentioned that resistance occurs due to their mindset especially for the senior staff. It is the nature of human that is difficult to accept new things and change their habit since they prefer working using their old ways. Resistance to change occur due to people's natural tendency which is hard to leave their comfort zone (Jadhav, Mantha, & Rane, 2014).

Negativity to change has been also reported in the study done by Rees (2010) as a barrier to implement Lean or any type of change. Besides, misunderstanding and not seeing the impact and benefit also contribute to resistance. The challenge in term of resistance and misunderstanding of the knowledge of lean is supported by the study by Sharma, Dixit, and Qadri (2014) which mentioned that resistance to change , insufficient training and misunderstanding of Lean are among the barriers for lean implementation. Moreover, Zhang, Luo, and Shi (2016) revealed that resistance to change is a challenge which recorded the highest percentage of 58.3% while the second highest percentage of challenge recorded (41.7%) is employee do not understand the implementation rationale. In order to instil confidence to the employees toward the benefits from implementing lean, to increase their understanding and to eliminate the resistance, the impact from the implementation must be shown after they have successfully implemented the lean project. Thus, the

organizations firstly must focus on the short-term win where they chose small scale project. Their action on short-term win is supported by Radnor et al.(2006) who found that it is right to start with small scale implementation to get a short term win but it has to be stressed that it just an initial work which require a continuous journey towards embedding lean. They also mentioned that the steps should be managed carefully in order to raise the improvement level and ensure the widespread of lean in the public sector (Radnor et al., 2006). The finding of this study shows that the resistance only exists at the beginning due to the action taken by the management to manage the transition in which will be explained under RQ3.

The second challenge is Knowledge. Understanding the lean knowledge is a challenge for them since Lean Management is still new for many Malaysian Public organization. Knowledge and skills have been identified as one of the enabler for any successful change (Al-Haddad & Kotnour, 2015). Radnor et al. (2006) who mentioned that lack of knowledge, skills and experience as the barrier to implement Lean support the challenge in knowledge. The challenge in understanding lean knowledge mostly occurs at the beginning before they receive extensive training. Once they have learned it and start to do it, there is no more misunderstanding. An organization who stated that staff experiences some conflict between Lean and ICC, which is Case A. This is because the same members of ICC group are also members for Lean group. Therefore, they need to solve and prepare project for both approaches. More training should be given to the staff so that they can understand and differentiate it well and the involvement of other staff instead of the same, may be useful. The different level of knowledge and education of the staff has also become a challenge for the organization. Effort in terms of explaining and providing

more training is required to ensure that they gain the knowledge and understand it. The last sub-code for 'knowledge' challenge is lack of knowledge through benchmarking. This is experienced by the first organization in Malaysia that implement lean management_which is Case D. The organization was unable to obtain knowledge on best lean management practices from other organization. However, after successfully implementing lean, they have become the benchmark for other public organization.

Time and resources are among the important factor for adopting lean in service (Malmbrandt & Ahlstrom , 2013). Resource constraints were experienced by most of the organizations either in term of physical resources (e.g. time, fund, communication medium) or human resources (e.g. capability, knowledge, skill) (Jadhav et al., 2014). The participants mentioned that they have constraint in time due to their main job. The challenges in time experience by the staff especially during the transition phase. They need the time to attend workshops, gather in groups to discuss and execute the lean project as well as preparing the documentations. Due to their daily workload, they have to find extra time to do the planning and solve the issue in their project. Once they have accomplished it and implemented their project on daily basis, there is less time constrain since lean project mostly shortened their work process and thus save time. One of the barrier to implement change is lack of resources (Radnor et al., 2006). In implementing lean, adequate resources are required for the success of the change process (Jadhav et al., 2014).

Challenge in resource is only mentioned by Case B, which is in term of money and equipment. Although they have no specific budget to implement lean, they still can

implement lean very well within their limited sources. Improvement to the work process can be done without any cost. This finding is in accordance with the study done by Radnor et al. (2006) where they found that there are some cases that need to rely on current resource and to be managed efficiently and effectively. Case B is a state government agency that is restricted with the operating budget provided by the government compared to other four cases (Statutory Body and Local Authorities) that can generate income from the service provided.

5.3 RQ 2: What are the critical success factors in implementing lean in public service organizations?

As mentioned earlier in the result, seven success factors have been identified which are Employee involvement, Knowledge, Management Commitment, Communication, Culture, Teamwork and Organization readiness. Each of the factors is discussed in the following sections.

5.3.1 Management Commitment

Commitment from the management has been identified as the main success factor by participant 1 (Managers) of Case A, C, D and E. This factor has also recorded the highest number of quotations compared to other factors. The commitments are shown through direct involvement of the top management along the process, providing resources needed, giving instruction and moral support. This factor is supported by Sisson and Elshennawy (2015), which revealed the key to success in Lean is top management commitment in driving lean and providing necessary training. Besides, from the case study in Mexican public service, few enablers for lean implementation have been found such as commitment of the management and

their determination for improvement, active leadership from top and middle managers, and clear resolve on improvement objectives (Sua' rez-Barraza & Ramis-Pujol, 2010). Direct involvement from the top management of Case B, C and D were obviously seen where they also join the lean workshop together with their staff from the beginning. The management of other two cases also shows commitment through their support and monitoring the staff's projects. The commitment from the top management is proved to be seen based on the quotations from all the project leaders in all cases, which mentioned about the commitment of their management in Lean implementation. The commitment shown by the management of public service organizations that have been interviewed are in accordance with five things found by Netland (2015) that need to be done by the managers to be successful in lean implementation. They are, to commit, lead and actively involve, prepare and be at trainings, arrange long-term planning and monitor, provide resources and lastly, apply techniques and tools of Lean. The commitment from the leadership is vital in ensuring the success of lean implementation in any industry. They have to make a decision on the problem and its improvement as well as provide necessary resources to achieve a long-term vision of the company (Dibia, Dhakal, & Onuh, 2014). Based on the findings of this study, management commitment is found to be the most important factor for the success of lean implementation.

5.3.2 Communication

Communications is one of the success factors that have been mentioned by all cases. Two-way communication is found to exist between the management and the staff, between the project leader and the management and between the project leader and the staff. The purposes of communication can be classified into four purposes, which

are to get the approval for their project, to express ideas and suggestions, to communicate vision, benefit/impact and information, and to provide support and motivation. This purpose is supported by Chan (2012) which stated that the vision of an organization and continuous information about the improvement progress should be communicated to the whole organization because communication is one of the key activity to sustain change. Besides, an organization should have a specific goal, time, resource and improvement planning, which are accepted by all staff through continuous communication in order to gain commitment (Damrath, 2012).

Most of the quotations regarding communication were from Case B. Good communication between everyone in the organization can be clearly seen. The staff of Case B freely communicates and discusses idea with their project leader and the manager. The project leader and the manager of Case B closely meets the staff and communicate their thought, explains the importance of improvement and building teamwork among the staff through teambuilding sessions. The action done by the project leader and manager of Case B is supported with the case study by Schraeder, Tears, and Jordan (2005). They found that the department supervisor spends his time during the meeting to express his belief and philosophy and stressed on the importance of having a great teamwork to the staff, as the first step to change the culture in his department (Schraeder et al., 2005).

The manager directly communicates any information related to lean project to other staff that is not directly involved in the team for lean projects. Various communication medium is used by the organization such as presentation, online portal, WhatsApp and company radio are very helpful for the management and the

staff. It is an effective medium to communicate and disseminate the knowledge or information. The respondents of the study by Radnor et al. (2006) mentioned that the internal communication is insufficient where the benefit / impact from the improvement was not been spread widely and thus they feel that their efforts are not been recognized. The result contradicts with the finding of the study because all the public service organization did not mention any challenges or issue regarding communication. It is found that they can communicate well between each other and all the information and benefits from lean implementation are spread to everyone using various communication medium such as mentioned above and thus communication become one of the critical factor that contribute to the success of lean implementation in their organization.

5.3.3 Employee Involvement

Employee involvement is a factor that was stated by the project leader of all cases. As the employee, the project leader realized that their involvement is required for successful lean implementation because without the staff's involvement, the management could not implement it. This factor was also mentioned by most of the managers. The managers can see the involvement and effort shown by the employees that is very important to ensure the success of lean initiative that have introduced. The employee involvement factor is the factor that is mostly addressed by the participants together with the management commitment factor. These two factors seem to complement each other. Angelis et al. (2011) found that task support from the employees could occur due to the existence of support from management. While Maalouf and Gammelgaard (2016) stressed on the role of manager to facilitate learning in order to enhance the involvement and employees' participation through

bottom up approach during lean transformation. Employee involvement is triggered by the commitment shown by the management. The employees' involvement is important in ensuring that the implementation of lean moves and sustain.

5.3.4 Culture

The culture is believed to be developed when the staff understands lean well and strive for continuous improvement for the organization. As defined by Ahmad (2013), lean culture has been developed within organization when everyone understands the goal and purpose of lean improvement and gives full participation in reducing waste. All the quotations regarding the example of lean culture by the staff are mostly from the project leader of all cases. This shows that the project leaders see the employees' act and attitude more than experience by the managers since they are also in the category of implementer, work with the staff and monitor them closely.

The lean culture found to be existed in Case B, C and D. The staff in these organizations is able to propose their own ideas to make improvement to their work process continuously. Radnor et al. (2006) found the evident that the experience gained from participated in doing improvement in their work process had changed their attitude and make them ready for developing a culture of continuous improvement. Maalouf and Gammelgaard (2016) recommended the manager to recognize the nature of tension and impacts of lean on the employees before implementation. The organization uses various approaches to cultivate lean culture in the organization. They focus on knowledge to make sure that the staff understand the lean concept and able to implement it in their daily basis. They also stressed that it is not solely about lean project that use lean tools but it is more on doing any

improvement and removing waste so that their work becomes easier and it will ease the customers as well.

5.3.5 Knowledge

The 'knowledge' factor was mentioned by the managers of Case B, C, D and E. Lean knowledge is important to ensure that lean can be implemented easily and eliminate resistance that occur before the implementation. Netland (2015) revealed that fostering knowledge of lean and skills using continuous training and education for staff and the managers are critical for the success of lean implementation. Misunderstanding of lean concept may lead to resistance from the employees. As mentioned by Mostafa et al. (2013), the benefits and the need of implementing lean should be transferred to enhance understanding during the first phase of lean transformation. Thus, the management must ensure that the employees are well equipped with sufficient lean knowledge. Based on the explanation from the project leaders and the managers, it is found that the staff understand the importance of implementing lean and no longer resist. Besides, as mentioned by the manager of Case C and Case D, the existing knowledge on management and quality improvement initiatives have caused them to be prepared to accept lean and implement it in their organization successfully.

5.3.6 Teamwork

'Teamwork' is one of the success factor that was mentioned by only one organization which is Case B. Teamwork is a critical aspect in Lean and other change activities in which has let the organization to develop a capacity to improve (Radnor et al., 2006). Case B stressed on the importance of having teamwork and they ensure that everyone

can work well together without any misunderstanding. The management and project leader are concerned on building and developing a great teamwork among their staff. The staffs are not differentiated by their grade / level or their seniority. Everyone must share the same vision to continuously work together for a successful lean implementation in the organization. Therefore, a few teambuilding sessions were conducted before introducing lean to create a bond and eliminate any dissatisfaction among the staff in order to ensure that everyone can work together as a team.

Although teamwork is not mentioned as a success factor by other organizations, it does not mean that this factor is not of an importance. For example is Case D. Although they did not mention about teamwork, a unique approach was used to build the team for the lean project in which was not been mentioned by other organization. Most of the lean project in Case D consists of cross-functional team, which mean that the members in one group are from many sections/departments in the organization. It is because their projects focus on improving the work process that involves other sections/departments. Therefore, the staff of other department involved in the work process must also be a member in the group to ease the improvement process. It shows that there is e a good teamwork because as inter department members work collectively. Dibia et al. (2014) which revealed that the multifunctional teams in which consist of all the process owners were formed because they have a clear understanding of the process to make improvement, can support the aforementioned action. In contrast, people often work only within their department because teams working across departments seem less effective especially if the offices apart (Radnor et al., 2006). Thus, a good teamwork is required to ensure that everyone can work well together in implementing respective lean projects.

5.3.7 Organization readiness

It is important to develop an organization readiness before implementing lean initiative so that the organization understand and is well prepared for the implementation process (Jiju, Netasha, Cullen, & Kumar, 2012). Organization readiness is a factor that mentioned by Case A, Case C and Case D. Their organizations were ready to accept lean since they were familiar with other quality improvement tools. This is supported by Radnor et al. (2006) who stated that the organizations have tremendous capacity for lean improvement if they had experience in managing change for other previous change process. This factor was stated only by the managers. As one of the managers in the organization, they are part of the top management and know the management of their organization better. The management is really mindful on making improvement for the organization and able to provide necessary resources for a successful implementation of lean management in the organization. The organizations are ready to implement lean when they are willing to provide resources such as money allocation, equipment, knowledge and changing policy or procedures.

5.4 RQ 3: How do the public service organizations manage the changes in lean transition?

It is effective to develop a dedicated implementation team during the early stage of implementation (Netland, 2015), thus, in every case, a lean secretariat has been assigned to manage the lean implementation. According to Netland (2015), there is a continuous need to have proper planning, perform follow-up and provide resources for lean programs. The lean secretariat is responsible to manage the change to lean by preparing an implementation plan that will guide the process of implementation.

The responsibility of lean secretariat includes providing training and distributing the knowledge of lean, monitoring the progress of lean projects, performing lean promotion and lean programs such as lean competitions, and motivating the staff. It consists of series of trainings, lean programs and progress meeting to guide the implementation and to monitor the progress. The lean secretariat position is held by the Department of Corporate Services or Department of Management Services in the public service organization. The lean secretariat mostly manages the implementation but not is directly involved in the lean project except the lean secretariat for Case D, which also has a lean project. The purpose is to become the role model for other sections. They prove that they are not only asking other sections to do it but they themselves also involve.

The process of implementing lean by all cases is almost the same. It begins with the introduction to lean management and group formation, followed by series of training/workshop, implementing the process and finally reviewed by the Malaysia Productivity Corporation and receive the certificate of practices. Based on the findings on the implementation steps taken by the public service organization, a general steps in lean management implementation in public service organization are suggested as shown in Figure 5.1.

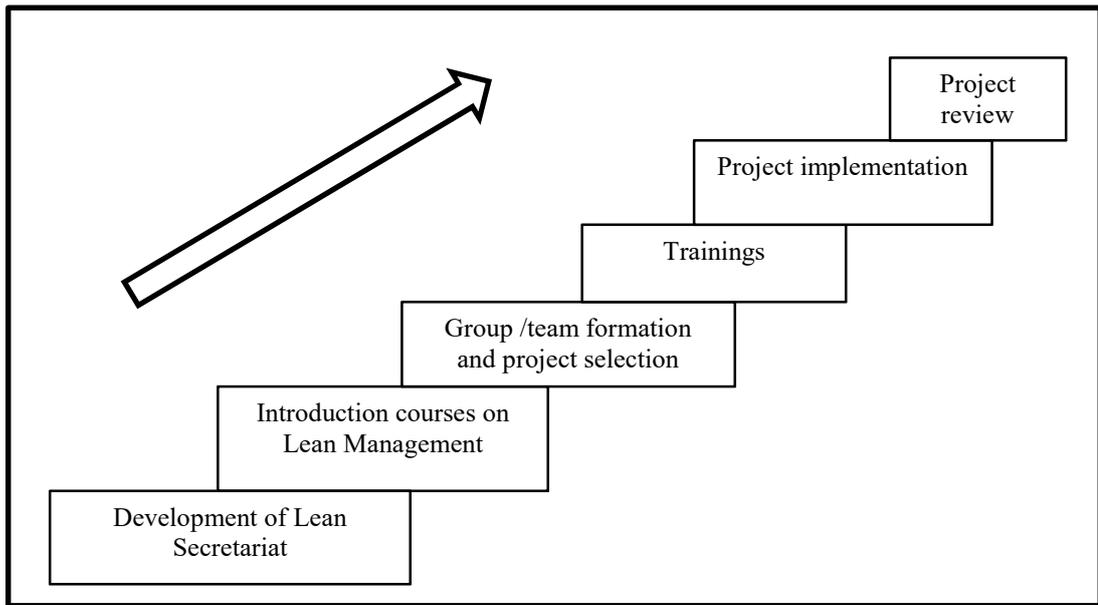


Figure 5.1
General Steps for Lean Implementation in Public Service Organizations

From the case study, it is found that the public service organization focus on training in managing transition to lean. It is because they believe that knowledge is very important to be given to avoid resistance and make sure that everyone understand lean well and can accept change toward lean. The ideas and direction of change have to be clearly interpreted and negotiated to everyone in the organization (Langstrand, 2012). Maalouf and Gammelgaard (2016) proposed some managerial action to be taken in managing the paradoxical tension during lean implementation such as performing coaching and mentoring to influence the behaviour of the employees and conducting group discussion to reduce their fear. Besides, the focus on monitoring is to ensure that the staff continuously implements lean and to show that the management is committed in lean initiative. Furthermore, the role of motivation given by the management prior and during the implementation is important to change into lean in order to encourage the staffs to participate and strive together in improving the organization. Moreover, the manager has to show long-term

commitment through provision of resources, time and performance appraisal (Maalouf & Gammelgaard, 2016).

The next section will discuss on each important aspects in managing change which are Training, Monitoring and Motivation.

5.4.1 Training

The main purpose of providing training is to give a complete understanding on lean knowledge to the staff so that they are well prepared to implement lean in their job. The success and sustainability of lean in an organization depend on the development of its people through adequate and proper training to inculcate their competency level (Dibia et al., 2014). The training is usually conducted in a form of workshop where the staff learns and sits in their group to conduct process mapping of their lean project. All cases received at least two workshops with external consultant to guide them with their lean project. It is the best platform to provide knowledge on theory and hands-on with the help of consultant . Study by Dibia et al. (2014)state that the management also appoints lean experts to facilitate lean improvement process. Furthermore, a survey conducted by Radnor et al. (2006) reckoned that 90% of the respondent agrees on the effectiveness of using external support/consultant. The study revealed many benefits of using external consultant, among them, experiencing the lean concept, understanding the process and following the established methodology (Radnor et al., 2006).

The main tool introduced by the consultant from the Malaysia Productivity Corporation is Value Stream Mapping (VSM). VSM assists public servants to find

the waste and eliminate the steps or procedures that have no benefit from their work process. According to Dibia et al. (2014), a continuous process for activity planning has to be properly planned through analysing and mapping the process in order to add value and eliminate non added-value process. Radnor et al. (2006) clarified that it is unnecessary to use many tools in Lean service and they found that the main tool used by the public sector is Process Mapping. Besides, the management also sends staffs to attend external programs such as seminars on lean to gain knowledge from other practitioners. However, not all staff has opportunities to attend external training. The project leaders or the managers that have attended those training will share their knowledge with the staff.

The result of the study by Langstrand (2012) found that the knowledge of lean is not homogenous due to different level and types of training given to the managers and the staff. The middle managers were sent to extensive training while the operators were not given the formal training and moreover, the top management is not required to attend the training program (Langstrand, 2012). Although there are some external courses that only attended by project leader or the manager, it cannot be said that the knowledge of lean in Malaysia public service is not homogenous as found by Langstrand (2012). This is because in most of the cases, all the managers, project leaders and the staff attend the same courses conducted by the consultant. Even the top managers were also involved during the workshop as in Case B, Case C and Case D. They received the same lean introduction courses and workshop on Value Stream Mapping, and thus, the knowledge attained is presumed homogenous, which is in contrast with the findings by Langstrand (2012). The external courses for the managers are extra management training to manage their staff. As known, the public

service organizations have constraint in term of resources and time, thus, the inability to send all the staff for external training. However, it is not a problem since they have good communication knowledge to be imparted to their staff.

Al-Balushi et al. (2014) found that the sustainability of lean depends on the engagement of the employees through training. Thus, before the practical workshop session with the consultant, all staff were introduced with the theory of lean management. The purpose is to ensure the staffs are equipped with basic understanding of lean management prior their session with the consultant. From all cases, only Case B has a unique approach to provide understanding on lean. After the first introductory training on lean management theory, they found that the staffs are unable to comprehend and accept the change. A few teambuilding sessions were conducted in small groups for a better understanding and to make everyone become closer. The project leader and the manager personally explain to the staff about lean and why they need to implement it.

For Case E, they gave the opportunity to the staff to personally meet the consultant in groups after the overall training session for any enquiries. Since all groups attended the overall training with the consultant from all the departments, it may had restricted to learn closely from the consultant. Thus, each group can have a further discussion with the consultant after the training. For other four cases that received consultation from MPC, they will again make the visit to the organization. Their project will be reviewed and evaluated by MPC after completion. Their consultant was also willing to help if they needed further guidance. All cases realized on the importance of training to attain further knowledge. It is found that the training is been given

continuously not only for the new staff but also to the existing staff. Although they may not be able to hire external consultants after the first implementation, the training is still conducted internally. The manager and project leader that already have experience with lean implementation will continuously guide the staff. Puvanasvaran, Megat, Hong, Razali, and Magid (2010) mentioned that for the best way, the training should be conducted regularly and not only be given at the first time. By obtaining enough knowledge through training, the staff are ready to accept the change.

5.4.2 Monitoring

Monitoring is an important aspect in managing the transition to lean and also along the implementation in which was performed by the project leader, lean secretariat and the top manager. Staats and Upton (2011) mentioned that employees' work has to be monitored regularly by the managers. The project leaders monitor the progress of their group while the lean secretariat monitors and reports the progress of all groups to the top management. The manager of Case B and Case D mentioned that the staff need to present their progress in front of the top management for their project. Staats and Upton (2011) mentioned that the chairman of the organization personally reviewed the lean projects and consistently met with the project leaders to ensure the continuous lean program in the organization. This action is also seen in Malaysian Public Service Organization that was interviewed where the participants explained that their top management met them regularly and closely monitored their progress.

The main purposes of monitoring are to keep track of the projects' status and ensure that the project managed move well. It is in correspondence with the purpose of monitoring in public service stated by Radnor (2010) which is to monitor and evaluate the improvement process and its impact. The monitoring is conducted through presentation sessions and meeting which are handled periodically. They also use other medium such as direct observation in the office, e- mail and online portal. Besides monitoring the progress, it has become a session for discussion and sharing ideas among the managers and the staff. The monitoring is important as stated in the lean framework for public service as proposed by Radnor (2010). Two of the pillars focus on monitoring to allow lean activity to be established and embedded in daily process. The monitoring process shows that they are committed in ensuring that lean can be successfully implemented within the organization. Staff will be alert, able to accept the change and work hard on achieving the change.

5.4.3 Motivation

The management of all cases used various way to motivate the staff to do lean through words and rewards. The motivation was given from the start to encourage the staff to accept the change. The motivation given by the management shows that they are committed with lean and thus can increase the willingness of staff to accept the change into lean and contribute in the lean initiatives. It is supported by Ciarniene and Vienazindiene (2014) that consideration should be given to personal related issue such as provide motivation, developing trust and showing commitment to the employees instead of focusing only on lean tool and techniques to avoid unsuccessful implementation. Even for lean training, it is been organized outside the organization such as in the hotel as requested by the staff as one of motivation. Compared to the

training conducted internally within the organization, the staff is more motivated to attend outside courses because it is more peaceful without any distraction from actual jobs in the office and they can focus on the content of the training.

The project leader of Case B mentioned that he always gives word of encouragement to the staff in order to motivate them to do improvement for the organization. Besides, the management should measure the progress and communicate the impact throughout the organization as well as reward the staff for their good effort in lean improvement. (Al-Balushi et al., 2014). The managers of most cases motivate by giving reward and appraisal for the staff that compete and win in lean competition to motivate the staff and encourage competitiveness among them. Pamfilie et al. (2012) highlighted that motivation can lead towards continuous development in improvement project because when the employees feel the management values and appreciate their work, they will strive towards putting their best effort on their job. The recognition from the top management and the interesting rewards for the winner of lean competitions has made them to be more competitive, in the same time have fun, and enjoy their job. Motivation and support are required to encourage the staff to provide suggestions for improvement (Wong et al., 2009). By receiving enough motivation, the employees are triggered and happy to do the improvement in their organization.

5.5 Framework of Lean Management Implementation in Public Service

Organization

After the collected data was analysed, few emerging themes were found in which amendment was required to be made to the proposed conceptual framework. The revised version of the framework is shown in Figure 5.2.

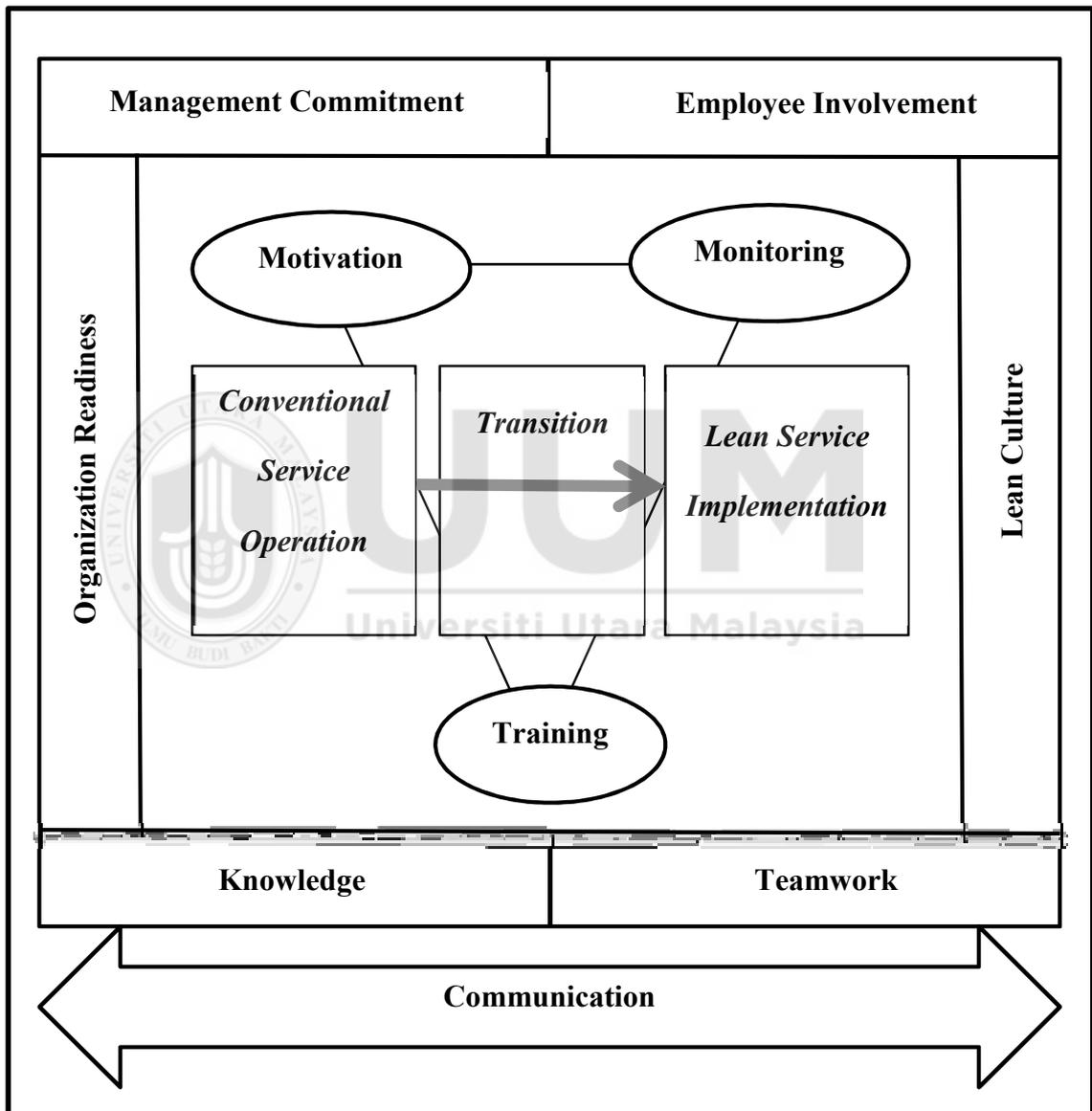


Figure 5.2
Framework of Lean Management Implementation in Public Service Organization

The framework consists of the factors for successful implementation and important elements in managing change. The middle of the framework shows the stages of change from conventional service operation followed by transition phase before moving to lean service implementation stage. The success factors for lean implementation were arranged in a block and located around the stages of change. Three new success factors have been added to the previously proposed framework, which are Organization Readiness, Employee Involvement and Teamwork.

As mentioned in the previously proposed framework, the 'Communication' factor is a success factor that is placed in two way arrow to demonstrate that two-way communication exist between the management and the employees and need to be exist continuously along the process. Management Commitment and Employee involvement factors were at the top to show the importance of these two factors, that recorded among the highest number of quotation mentioned by the participants. Organization Readiness and Lean Culture are placed vertically to act as the pillar for successful lean implementation. The 'Organization Readiness' factor is near the first stage before the implementation to show the important of having organization readiness before start to implement lean while the 'Lean Culture' factor is near the final implementation stage after the organization has implement lean service to represent the importance of having lean culture in ensuring the continuous and sustainability of the implementation. The 'Knowledge' and 'Teamwork' is at the bottom to indicate the importance of these two factors as the basis for successful lean implementation. The position of these two factors, which are opposite to the other two factors at the top, is to point up the connection among the factors where the management should provide the necessary knowledge and teamwork should exist

among the employees during their involvement to achieve success in lean service implementation.

Three important elements in managing change are Motivation, Monitoring and Training are located at the edge of triangle in the middle of the framework to cover the stages of lean implementation which have to be planned and managed by the secretariat and the management to ensure a successful change into lean service implementation. The 'Training' is mostly required during the transition to lean. The 'Motivation' has to be given from the early stage before start to implement lean to encourage the employee and increase their acceptance to Lean while the 'Monitoring' has to be conducted regularly after the implementation to ensure the progress of lean project continues. Although each elements of change management is displayed near each stage, it does not mean that the elements are only required and belong to each stage. All three elements have to be managed and given along the implementation in order to change into Lean Service operation successfully.

5.6 Framework Validation

The framework that has been developed was sent to the expert in the field of study for the purpose of validation. A validation form was provided by the researcher to be filled by the expert. The expert was chosen based on his experience in consulting Lean management implementation in many public and private organizations in Malaysia. The expert was asked for his willingness to validate the framework before he was given the validation form. The form consist of two sections where the first section is about the background information of the expert while the second section

consist of questions about the framework. The information about the expert is shown in Table 5.1.

Table 5.1
Expert information

Criteria	Information
Full name	Nik Faizal Bin Nik Ahmad
Position	Manager
Organization's name	Malaysia Productivity Corporation
Number of working years	17 years
Experience in lean management	10 years involve in lean management in MPC (principle consultant, lean projects)

In the second section of the form, the expert was asked about his opinion regarding the framework based on few aspects which are overall structure, clarity and practical.

The expert ticked his choice and provide his opinion for each aspects in the unstructured survey form. The findings are summarized in Table 5.2 below.

Table 5.2
Framework validation by expert

Aspect	General	Specific opinion
Overall Structure,	Provide a simple and useful guide for the beginners to start implement lean management	<p>The framework manage to enhance the lean transformation process. Rightly it highlight the success fctor for lean implementation, stages of lean transformation and the outcome it want.</p> <p>The proposed framework is more suited for organization new to lean and want to contemplate whats require before embarking to lean journey.</p> <p>To promote cceptance to the lean concept, simplified and comprehensive implementation framework become necessary.</p>

Clarity	Readers can understand the success factors and the element required in managing change to lean management implementation	<p>This framework identified 10 factors require to successfully implement lean management in public service. Quite a lot for a single framework.</p> <p>However the author manage to associate each factors to justified its purposes. This framework also included all the necessary information good for public service organization to make a decision before embarking to lean journey.</p>
Practical	By referring to the framework as a guide before implementing lean, the problems and challenges in lean management implementation can be overcome.	<p>Lean management in public sector in Malaysia is particularly an infant. Given the fact, not many state government or government agencies are holistically into it thereby not many cross comparison could be done about it, needless to say about the data associate with it.</p> <p>Inadequacy of information on the projects related to lean management for the public sector can be ease through this framework as a guide for more public sector to go into lean to improve their service delivery and manage budget effectively. Simple and practical methods also play an important part to attain acceptance to the lean proposal.</p>

The expert agreed with the framework and thus, no ammendment has been made on the proposed framework.

5.7 Summary

All three research questions were answered and discussed in this chapter along with the support from the findings of previous researcher. The challenges in lean implementation in Malaysian Public Service Organization have been divided into four, which are resistance, knowledge, time and resource. While seven factors which are Employee involvement, Knowledge, Management Commitment, Communication, Culture, Teamwork and Organization readiness are considered to contribute to the success of lean implementation in Malaysian Public Service Organization. For managing the change into lean, Malaysian Public Service Organization established a lean secretariat to plan and ensure that lean is been implemented successfully within the organization. They stressed on the three important elements, which are Motivation, Training and Monitoring in order help the staffs to accept the change and continuously implement lean in their organizations. Finally, the previously proposed framework is revised and a new framework for lean management in public service organization is developed that contains the success factors and the important element for managing change into lean.

CHAPTER SIX

CONCLUSION

6.1 Recapitulation of the Findings

In order to achieve the research objectives and answer the research questions, this research is conducted in five Malaysian Public Service Organizations. The research found that there are four challenges experienced by the organizations which are 'Resistance', 'Knowledge', 'Time' and 'Resource'. All the first three challenges were experienced by all five cases except for the challenge in 'Resource' in which only experienced by one organization, which is Case B. This is due to the nature or organization that has limited operational cost provided by the government. The other four organizations have no resource constraint because they can generate income from the service provided. The challenges found have successfully answered the Research Question 1 and achieved the first objective, which is to identify challenges faced by the public service organization during transition to lean.

Next, to answer Research Questions 2 and achieve the second objective, which is investigating the success factor of lean implementation in public service organizations, the organizations were asked about the factors that could contribute to the success of lean implementation. All four factors found from the literature which are management commitment, communication, culture and knowledge were found in this study. Besides, there are three new factors found which are teamwork, organization readiness and employee involvement. Out of these seven factors, four factors were indicated as the most critical success factors which are 'Management Commitment', 'Employee Involvement', 'Knowledge' and 'Communication' that has also need to be focused especially during transition to lean.

Only one factor, teamwork had been mentioned by only one organization, which is Case B. This organization is found to be unique because they realize on the importance of developing a good teamwork to ensure that all staff can work together towards implementing lean. The success of this organization is proved through the lean projects implemented by this organization has also become a standardized work process for state government departments in other districts within the state of Pahang. The change agent who is also the project leader of the organization was even invited to share his knowledge and their best practices and was a jury for lean competition in other public organizations in Malaysia.

Besides, the study revealed how the public service organizations manage the changes in lean transition. The lean implementation started by forming a lean secretariat that is responsible in planning and managing the whole implementation process. The study found three important elements that are required to manage the changes in lean, which are motivation, training and monitoring. The lean secretariat and the management of the organizations manage all these elements. The lean secretariat had prepared their implementation plan that consists of the training session, monitoring session for project progress and conducting lean competitions. They were also responsible to provide the knowledge and increase awareness of the staff. The author found that Case D as an outstanding organization in term of the management towards lean implementation. They have their own planning for the whole implementation. The lean secretariat of Case D itself has their own lean projects compared to most of other lean secretariat in other organizations that only plan for lean program and monitor the staff progress. The implementation of lean projects in Case D also differs

from other four cases where they have three batches of lean project before the review and evaluation by Malaysia Productivity Corporation. As the first Public Service Organization in Malaysia that has implemented lean, Case D has become the benchmark and has driven other organization to do lean. The focus that has been given on motivation, providing trainings and performing continuous monitoring has helped all five public service organizations to manage the change into lean management implementation. Thus, from the above findings, the third objective, which is to investigate how the public service organizations manage the changes to lean transition, has been achieved.

Finally, to achieve the last objective and to develop a framework of managing change in lean transition in the Public Service Organizations, the previously developed framework before the data collection was revised to include the new findings from this study. The framework displays the important elements to be managed in lean as well as added three new success factors to the existing four success factors for lean implementation in public service organizations. Therefore, the research has answered all three-research questions and achieved all the four objectives of this study.

6.2 Recommendation from the Study

From the study findings, the challenges in lean transition have been revealed. Thus, it can be used by the public service organization that interested to implement lean in their operation to be aware of and prepared to overcome the challenges. The challenge in resistance is due to their mindset, which is hard to accept change and due to lack of understanding of the knowledge. Therefore the organization has to

play its roles to prepare all the required knowledge along with the benefits from the implementation in order not to feel sceptical and thus can accept the change. The management must also focus on motivating them to increase their acceptance towards lean.

The challenge in term of knowledge occurs because lean is a new concept for Malaysian Public Service Organizations and it is not easy for the staff to simply understand it. Therefore, many training sessions have to be provided to increase their understanding from beginning. Since the participants mentioned that they could not really understand what has to be done after the introductory talk on lean concept, it was difficult for them to find the lean project to be brought during the workshop with the consultant. It is suggested that the first introduction training module should not only consist of the principles and concept, but it should also consist of the tools and the example of project that is solved using the tool. It may require at least two introductory lean courses before they will be asked to find the project and have the practical training with the consultant.

The challenge in term of time occurs due to their daily main job in the office in which causes the time constraint in term of to gather everyone in-group and to focus on training. Thus, the organization should provide time for them to attend the training where it is most helpful if the training is conducted outside the organization. The reason is to give them more time to focus on their training and their lean projects without being disturbed by their main job during the session.

For challenge in resource, it is recommended for the government to provide some specific budget for lean implementation since it has been proved that lean can

improve the service delivery of the public service. The resource in term of money that is needed is not for implementing large lean project, but it is for the use of providing knowledge to the staff. Even hiring the external consultant from Malaysia Productivity Corporation also involves large amount of money to be invested. It is not a problem for the organizations that can generate their own income, but it will be a challenge to a small public service organizations that are interested to do lean. Besides, the government should provide more campaign to increase awareness on the needs to implement lean and provide necessary resources for the public service organizations to implement it in order to improve the service delivery in all government offices in Malaysia and to increase public satisfaction.

In managing the transition to lean, it is recommended that the public service organization could focus on the factors of successful implementation and follow the steps taken by the public service organizations that have implemented lean management in their operation. The first thing to be done is to assign a lean secretariat that is responsible to plan and manage the implementation. Furthermore, based on the steps taken by the organizations interviewed as discussed in previous chapter, the author suggests on the steps to be taken by providing lean introduction courses to the staff, followed by developing team, and finding lean projects, conduct trainings in term of workshop for practical knowledge on applying lean tools on the projects and finally implement and review the project. In addition, the management is required to continuously motivate and monitor the progress along the implementation process.

6.3 Research Contributions

As been previously mentioned, the findings revealed the challenges, the success factor and the change management aspect for lean implementation in the Malaysia Public Service Organizations. The research is believed to provide valuable contributions in term of theory and practical.

Theoretical contribution

In term of theoretical contribution, This study consists of the theoretical development that combines two disciplines which are lean management and change management.

The research revealed the success factors for lean management implementation in Malaysian Public Service Organizations that has yet to be conducted by other researchers. Most of the studies about the lean in public service were conducted in foreign countries and mostly focused on lean in healthcare while the research in Malaysia revealed the success factor in lean manufacturing. The framework provides the critical factor for successful lean implementation as well as the important elements required for successful change into lean management.

The study has also listed and explained the steps that can be used by the public service organization in changing into lean management. It is more specific than the three stages proposed by Lewin's theory but still can be adjusted according to the conditions of the public service organization. Besides, the theory that has been previously referred, focus on general change in which applicable to any types of change. The existence of the framework from the study can provide theoretical contribution in term of the change management specifically for lean management implementation in public service organizations.

Practical contribution

For the practical contribution, the finding in term of challenges faced by Malaysian Public Service Organizations can help the other public service organizations that want to implement lean to be aware of the challenges that might exist and take initiative to overcome the challenges by following the recommendations provided in previous section. Practically, the resistance and problems in lean implementation can be minimized and the success of lean management implementation can be increased.

The framework that has been developed has its purpose which is to provide the practitioners with the element required in managing change to lean and to stress on the success factor for lean management implementation in service sector. The failure to identify and understand the factors and important change management elements may restrict the continuous and sustainable lean management implementation in public service organizations. While the implementation steps taken by the public service organizations can guide them to implement lean management in their organizations.

6.4 Limitation and Suggestion for Further Research

The research limits its scope on managing change in lean transition among Malaysian Public Service Organizations. For further research, it is suggested that similar research to be conducted in other types of service sector such as in Healthcare and Construction. A comparison analysis on different types of service organization could provide new findings. From the further research, a framework that is suitable for all service sectors can be developed.

Besides, the scope of the participants of this study is limited to the project leaders and the managers who are mostly the middle manager / the lean secretariat of the organization. For further research, the category of participant selected could be among the staff and the top managers of the organization. Different view from the different level of participant could provide some new meaningful insight for the research.

Another limitation during the research is the time constraint. Managers have limited time to spend on the researcher due to their daily jobs. The information gained from the interview session might be limited. The information based on observation that is obtained through a single visit is quite limited. Thus, it is suggested to the researcher to stay in the organization for a certain period of time and closely observe the process.

Another qualitative design such as Participatory Action Research can be conducted where the researcher is engaged with the people in the organization and understand the process through social interaction. It can also be conducted on the new public service organization that would like to start with lean management by using the proposed conceptual framework to test the effectiveness of the framework.

Furthermore, instead of focusing on transition stage of the implementation as been conducted by this study, the further research can focus on the managing the last stage of lean service implementation to ensure continuous and sustainability of lean implementation in Public Service Organizations. Although the organizations are considered as successful in implementing lean after they have implemented the lean

project in their operation and have received the certification, it does not confirm yet that they will forever sustain it. The focus can be given on the development of lean culture and also can come out with the indicator to assess the existent of lean culture in the organizations.

6.5 Conclusion

The qualitative research using collective/multiple case study has been conducted in five public service organizations in Malaysia. The participants are the managers and the project leaders of the lean projects. The research that has been conducted has achieved all of the objectives. Four challenges faced by the public service organizations during transition to lean are resistance, knowledge, time and resource. Besides, seven success factors for lean implementation in public service that has been identified are management commitment, employee involvement, communication, knowledge, teamwork, organization readiness and culture. In order to manage the changes to lean transition, a lean secretariat has to be developed to make planning and manage the implementation process. The important elements in managing change are monitoring, training and motivation. The framework developed along with the general steps provided in implementing lean service are believed to provide some contribution to the practitioners, government, consultant and also for the academicians for further research in this area.

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Appendix A

Case Study Protocol

CASE STUDY PROTOCOL

MANAGING CHANGE IN LEAN TRANSITION AMONG MALAYSIAN PUBLIC SERVICE ORGANIZATIONS

INTRODUCTION

The main objective of this study is to investigate how the public service organizations manage the changes in lean transition. Despite the successful story of lean implementation reported based upon the benefit gained after the implementation, service companies were also unable to sustain their implementation and encounter many problems and challenge since the beginning of the implementation. Most of the problems in lean implementation arise during the transition phase to lean. While transition has been proved to be important, however, most of the empirical work done by previous researchers did not focus on managing the transition process itself.

Case studies are designed to provide the researchers with the opportunity to interview public service organization that implementing lean in order to understand challenges faced during transition to lean, to identify the success factor of lean implementation in public service organization and to find out how the manger and the change agent manage the transition to lean . Besides the interview, researcher will ask to review the related documents such as the lean implementation plan or the change program used by the public service organization.

The data collected during the interviews will be gathered, analyzed, interpreted and used to develop a framework of change management for lean transition in the public service sector. This model will serve as the guidelines for the practitioners who want to implement lean management in their service operation especially in public to consider the aspects involve in managing the transition before start to implement the lean techniques to minimize the resistance and conflicts for the implementation of lean and thus improves its chance of success.

Overview/ Briefing:

- The interview will takes about 1 hr -1 ½ hours
- The data collected will be kept confidential
- Ask the participant to sign the consent form to show that they agree to participate in the interview
- Ask for the permission to record the answer
- Ask to review / have some related documents such as:
 - Company profile
 - lean implementation plan/ Change program
 - Evidence on impact after implementing lean (annual report/ statistics)
- Ask for a visit inside the organization to make observation.

Interview Protocol

Purpose

To elicit the data and information about the lean implementation in the organization.

This protocol consists of three sections containing questions that capture both general and specific information regarding:

1. Respondent information
2. Lean Implementation
3. Managing transition to lean

Questions for Lean Change Agent and the Manager

Interview section	Content
Respondent information	<ul style="list-style-type: none"> • Description of the interviewee, their involvement in the lean transition and their function in the organization <ul style="list-style-type: none"> ▪ Current position ▪ Year of employment ▪ Who do you work with on a regular basis? Boss, peers, etc.
lean Implementation	<ul style="list-style-type: none"> • Could you explain a little bit about history of lean in your organization? • Why this organization choose to implement lean/ What are the drivers of the lean project in this organization? <ul style="list-style-type: none"> -Describe real and perceived problems that inspired the decision to introduce lean. What motivate the company to go for lean • Please describe the implementation of the lean techniques used in this organization? • What are the lean initiatives involved in Lean implementation? <ul style="list-style-type: none"> ▪ What was the activity? ▪ Who was involved? • What are the trainings involved in Lean implementation? <ul style="list-style-type: none"> ▪ Who were the participants? ▪ The frequency? • What is the key lean metrics/performance measurement in the company? • What are the impact compared to without lean? • Reflect on the result from the lean project. How lean was working currently? <ul style="list-style-type: none"> -Recognition/award after implementing lean <ul style="list-style-type: none"> • How's the reception from the employees so far in terms of lean? At top management level, middle level and operator level?
Managing transition to lean	<ul style="list-style-type: none"> • It is easy or difficult to adopt lean? • What are the challenges/ problems experienced by this organization during transition to lean -Why those problems/ barriers occur? • What are the factors/ elements that contribute to the success in implementing lean? <ul style="list-style-type: none"> - Which one you think is the most crucial success factor • How this organization manage the changes in lean transition

-did you have your own change program or implementation plan
- did you refer to any change management model?
-how you ensure that those important elements/factors that you've said earlier exist before implementing lean.
- Explain the process undergone in applying lean in the organization
-what are the steps taken to change into lean?

Role of lean leader/ Change agent

- Where do you get the information/ knowledge about lean?
- What is your perception of change to Lean?
- Besides you, who are involved? Kindly indicate
- Do you get the enough support from the management, lean team and workers?
- How you lead the change to Lean?
- Are you aware of the resistance you have to deal with? How you handle it?
- How you motivate and sustain lean in your company?

Role of manager

- Where do you get the information/ knowledge about lean?
- What is your perception of change to Lean?
- How you lead the change to Lean?
 - How did you involve yourself along the process of implementing lean
- Are you aware of the resistance you have to deal with? How you handle it?
- Do you get the enough cooperation and involvement from lean team and workers?
- How you motivate and sustain lean in your company?

***As a conclusion, is there anything you would like to share besides those mentioned before?**

Appendix B

Letter of Support from MPC



NETUA PENGARAH
DIRECTOR GENERAL
PERBADANAN PRODUKTIVITI MALAYSIA (MALAYSIA PRODUCTIVITY CORPORATION)
No. 10, Jalan 4/70A, Feringi Jaya, Seksyen 10, Petaling Jaya,
11400 Petaling Jaya, Selangor Darul Ehsan, Malaysia.
Tel: 603-75132615, 603-75132617 (TLX)
Fax: 603-75132616
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MPC(KP)130.1/3 Kt. 6

4 January 2015

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RESEARCH ON LEAN IMPLEMENTATION IN MALAYSIAN PUBLIC SERVICE ORGANIZATIONS

Ms Rabiha Asnan is a postgraduate student at Universiti Utara Malaysia, who is currently working towards Ph.D degree. She is focusing her research on lean implementation in Malaysian Public Service Organizations. The main objective of her study is to investigate how the public service organizations manage the changes in organization due to lean initiative.

In view of the above, I strongly support the initiative by the researcher and appreciate the cooperation by all Public Service Organizations in extending the necessary assistance for the researcher. The participation by the manager and the lean change champion is highly crucial in ensuring the success of research.

Thank you.

"1MALAYSIA, PEOPLE FIRST, PERFORMANCE NOW"

Yours sincerely,

(DATU' MOHD RAZALI HUSSAIN)
Director General
Malaysia Productivity Corporation (MPC)

Appendix C

Letter to Request for Data/Information

 **PUSAT PENGAJIAN PENGURUSAN TEKNOLOGI DAN LOGISTIK**
SCHOOL OF TECHNOLOGY MANAGEMENT AND LOGISTICS (STML)
Kolej Perniagaan
ULM College of Business
Universiti Utara Malaysia
06010 ULM SINTOK
KEDAH DARUL AMAN
MALAYSIA

 **UUM**
Universiti Utara Malaysia

Tel: 004-838 7031/7032
Faks (Fax): 004-838 7033
Laman Web (Web): www.stmportal.uum.edu.my

4th March 2015

Manager
Enterprise Innovation Department
Malaysia Productivity Corporation
Loeong Produktiviti, Jalan Sultan
46200 Putrajaya,
Selangor.

Atte to: Mr Rosni Abdullah

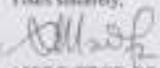
Assalamualaikum wa
Request for Information concerning Lean Management in Public Service Organization

With reference to the above, I am gladly to inform that Ms Rahiha Assan is a postgraduate researcher at Universiti Utara Malaysia, who is currently working towards her Ph.D degree. She is focusing her research on lean implementation in Malaysian Public Service Organization. The main objective of her study is to investigate how the public service organizations manage the changes in organization due to lean initiative.

I am writing to request for your consent to provide data/ information for my student to conduct an academic research. The information required is:

- The list of public service organizations that have received extensive training from MPC and still implementing lean management in their operation.
- The list of organizations that have received certificate of recognition from MPC regarding lean management.
- The level of lean implementation / years of implementation of the organizations listed (if any)

Information from your organization is highly crucial in ensuring the successful completion of her research. If you have any enquiries, please do not hesitate to contact me by phone or email (0133869601: znohezam@gmail.com) or Ms Rahiha (0135298155: rahiaassan@gmail.com). I would like to thank you for your kind support and cooperation in this research. Your assistance is highly needed and greatly appreciated.

Yours sincerely,

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Universiti Pengurusan Terkemuka
The Eminent Management University





Appendix D

List of Public Organization Implementing Lean Management Under MPC Program

No	Public Service Organizations	Sector
1	Perbadanan Kemajuan Negeri Pahang (PKNP) *	Government Services (state and government offices)
2	SUK P.Pinang	
3	Pejabat Daerah Tanah Dan Kuantan*	
4	Majlis Perbandaran Kuantan*	
5	Pejabat Pengarah Tanah & Galian Terengganu	
6	Perbadanan Memajukan Iktisad Negeri Terengganu (PMINT)	
7	Majlis Daerah Marang	
8	DBKU*	
9	Majlis Amanah Rakyat (MARA)	
10	Lembaga Tabung Haji Pulau Pinang	
11	Majlis Perbandaran Pasir Gudang (MPPG)	
12	Lembaga Tabung Haji Johor	
13	Lembaga Kemajuan Kelantan Selatan (KESEDAR)	
14	Pejabat Tanah Jajahan Kota Bharu	
15	Majlis Perbandaran Kota Bharu	
16	Jabatan Akauntan Negara Malaysia Kota Kinabalu	
17	Tabung Haji Kota Kinabalu	
18	MARA Sarawak	
19	Majlis Perbandaran Taiping	
20	Pejabat Kesihatan Putrajaya	Healthcare
21	Jabatan Farmasi HKL	
22	Hospital Tengku Ampuan Afzan, Kuantan	
23	Hospital Sultanah Nur Zahirah, Kuala Terengganu	
24	Hospital Raja Perempuan Zainab II	
25	UITM Jengka	Education
26	Universiti Putra Malaysia	
27	Universiti Islam Antarabangsa Malaysia (Uiam)	
28	Kolej Kemahiran Tinggi Mara Petaling Jaya	
29	Pusat Latihan Teknologi (Adtec) Shah Alam	
30	Pejabat Pendaftar UMS	
31	Institut Kemahiran Mara Tan Sri Yahaya Ahmad Pekan	
32	Universiti Sains Malaysia (USM) Kubang Kerian	

Appendix E

List of Organizations Under Lean Recognition

NO	NAME OF ORGANISATION
1	AUTOJACK SDN BHD
2	CHIT HENG METAL INDUSTRIES SDN BHD
3	CONTINENTAL AUTOMOTIVE (M) SDN BHD
4	CS YAP METAL PARTS INDUSTRIES SDN BHD
5	DENSO SDN BHD
6	GLOBAL FACTOR SDN. BHD.
7	IDEAL HEALTHCARE SDN. BHD
8	KOBELCO & MATERIAL COPPER TUBE (M) SDN BHD
9	LIPTA PLASTIC INDUSTRIES SDN BHD
10	M & D PRECISION SDN. BHD.
11	MAJLIS BANDARAYA SHAH ALAM
12	MAJLIS PERBANDARAN KUANTAN
13	NICARIA SDN. BHD.
14	PEJABAT DAERAH DAN TANAH KUANTAN
15	PEJABAT KESIHATAN PUTRA JAYA

NO	NAME OF ORGANISATION
16	PERBADANAN KEMAJUAN NEGERI PAHANG
17	PERFECT BRAKE MANUFACTURING SDN. BHD.
18	PROREKA SDN BHD
19	SEGINIAGA RUBBER INDUSTRIES SDN
20	SUPERWOOD INDUSTRIES SDN. BHD.
21	TEKNO LOGAM SDN BHD
22	TENAGA PRISMA MANUFACTURING SDN BHD
23	WORLD KITCHEN ATG (M) SDN. BHD.
24	MEMC KUCHING SDN BHD
25	DEWAN BANDARAYA KUCHING (DBKU)
26	RAPID BUS SDN BHD
27	REKA SETIA PLAYGROUND SDN BHD
28	RAPIB BUS SDN BHD (SHAH ALAM)
29	RAPID BUS SDN BHD (SENTUL DEPOT)

Appendix F

Example of Output Code Quotation

Report: 41 quotation(s) for 1 code

HU: ANALYSIS -transcript 5 organizations
File: [D:\ANALYSIS -transcript 5 organizations.hpr7]
Edited by: Rabiha
Date/Time: 2016-01-26 17:37:49

Mode: quotation list names and references

Quotation-Filter: All

MANAGE-Monitoring

P 1: DBKU 1.docx - 1:21 [They hv to follow our perbatua..] (62:62) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

They have to follow our perbatuan, gantt chart. Kalau mereka tak ikut, sy kena report kt atas. Sbb this one, kita akn report quarterly. Setiap suku thn, kna report dan setiap meeting we will always.. there is a meeting on this

P 1: DBKU 1.docx - 1:23 [kita buat pemantauan. Pemantau..] (67:67) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

kita buat pemantauan. Pemantauan dr segi suku tahunan. So we will always get them to report to us. Kita hntr emel kpd mereka, what are the status of their project. That's the way of pemantauan.

P 2: DBKU 2.docx - 2:17 [Mcm kelulusan projek kita liba..] (87:87) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Mcm kelulusan projek kita libatkn ketua bahagian, pastu mcm keputusan yg melibatkan overall bahagian kita rujuk pada dia bg tau kata kita buat. Apa2 decision yg melibatkan bahagian.

P 3: PDT 1.docx - 3:7 [kita Cuma tetapkan bila kita n..] (52:52) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

kita Cuma tetapkan bila kita nk bt presentation. So diorg arrange la masa diorang so that kita tau by the time tu, projek tu mesti nk kna present. Within the group la diorg akn plan. Kita bg dateline.

P 3: PDT 1.docx - 3:23 [So kita start bt perjumpaan le..] (107:107) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

So kita start bt perjumpaan lean, bos kata nk jumpa semua.so nk tak nak kena ada projek. By hook or by crook, semua kna ada projek.

P 3: PDT 1.docx - 3:24 [Pastu kita jumpa lg skali, ska..] (107:107) (Rabiha)

Codes: [FAC- management commitment] [MANAGE-monitoring]

No memos

Pastu kita jumpa lg skali, skali dgn datuk, masa tu datuk nk tengok projek. So diorg present lah. So, so far yg mana tak tau dia tnya la pd yg tau.

P 3: PDT 1.docx - 3:25 [Pn Aini td, Ketua penolong peg..] (109:109) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Pn Aini td, Ketua penolong pegawai daerah. kita bt kt bilik gerakan. Masa tu datuk xda, dgn dia ja. Datuk tu ialah Pegawai Daerah. Mknanya jumpa dia dlu bru jumpa Datuk.

P 3: PDT 1.docx - 3:30 [Tp Bila kita push, so kita bt ..] (119:119) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Tp Bila kita push, so kita bt lg yg ke2 , kita bg lg dateline dlm 2 week diorg mesti kna ada projek, so so far Alhamdulillah la. Mula2 je.

P 3: PDT 1.docx - 3:45 [Berkala la. 2 minggu skali kit..] (155:155) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Berkala la. 2 minggu skali kita jumpa.

P 3: PDT 1.docx - 3:47 [Biasa bila dh settle dgn cc az..] (192:192) (Rabiha)

Codes: [communication] [MANAGE-monitoring]

No memos

Biasa bila dh settle dgn cc aziz ke , en ramli ke en zaliza ke, diorg akn komen la, kita akn present bersama sama en zaliza,dibantu oleh cc ramli apa semua bg input, diorg bt penambahbaikan, pastu kita akn bawak la pd Datuk.

P 3: PDT 1.docx - 3:54 [Sbb bg sy utk change managemen..] (216:216) (Rabiha)

Codes: [FAC-teamwork] [MANAGE-monitoring]

No memos

Sbb bg sy utk change management is we work as a team. Kalu kitaa ja kn , top down, top down , mmg sekejap la benda tu. Tak boleh nk sustain. Sbb tu la, mmg la kalu kita kata diorg tu rasa terpaksa tu biasa la kan, kita menggerakkan diorg. So at the end of the day, diorg happy ja sbb benda tu dapat memudahkan diorg.

P 4: PDT 2.docx - 4:19 [hmm pihak atasan walaupun dia ..] (48:48) (Rabiha)

Codes: [FAC- management commitment] [MANAGE-monitoring]

No memos

hmm pihak atasan walaupun dia Nampak mcm push kita utk buat adakan semua, tp kita kt bawah ni kita terpaksa memikir apa benda apa benda . dan bila kita fikir tu, kita brainstorm semua, so kita Nampak banyak benda sebenarnya yg kita boleh buat. Mmg bnyk boleh bt. So drpd kata x da projek, xda projek, lps kita brainstorm , org atas mmg push kita -nk tngok projek, nk tngok projek semua kn, kita akn ckp xda,xda. so bila kita duduk bincang balik apa masalah kamu, apa masalah kamu- sy akn Tanya sy punya staf apa semua. Kita akn fikirkan benda tu kita boleh tambah baik tak. Procedure nya mcm nit p mcm mana yg you nak. Dia nk mcm ni,mcm ni. So kita boleh transform la drpd situ.

P 4: PDT 2.docx - 4:27 [Saya akn pastikn bnda tu berja..] (77:77) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Saya akn pastikn bnda tu berjalan. Cth, kaunter apa semua tu.. presentation semua sy akan handle. Sy akn bt slide apa semua, sy akn arahkan dan menyediakan equipment, pc, tempat,tagging,. Kita pantau la benda tu. So walaupun kesedaran tu ada tp tak semestinya x perlukn pemantauan. Sbb benda tu kdg2 tak tau lg diorg nk kna bt apa, jadi arahan tu penting. Leader ,dia kna tahu apa yg patut buat dan kita bg arahan kpd anak buah, so ank buah yg akn sediakn benda tu. Jd kita akn pantau.bnda tu mmg berjalan.

P 4: PDT 2.docx - 4:40 [pemantauan oleh pegawai la. Pe..] (189:189) (Rabiha)

Codes: [lean secretariat] [MANAGE-monitoring]

No memos

pemantauan oleh pegawai la. Pegawai dlm unit ni. Lpas tu bahagian khidmat pengurusan akan panggil untuk tengok. Jg mmg ada step2 yg diorang pantau dulu lah sebelum diangkat ke pihak pengurusan dan ketua jabatan.

P 4: PDT 2.docx - 4:62 [Tp kita sentiasa menerapkan si..] (253:253) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Tp kita sentiasa menerapkan sikap . siapa yg sangkut di situ yg teruk kena tembak. Kita tau di mana sangkut. Kita akan baiki, baiki. Kalau perlu penukaran staf, kita tukar staf. Tukar internal.

P 4: PDT 2.docx - 4:63 [Kita monitor . sbb projek kita..] (255:255) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Kita monitor . sbb projek kita, blakang klip file ni , kita ada slip kertas sign sapa. Sapa sangkut kita tahu. Di mana sangkut, section mana sangkut kita akan tahu. Tu kita akan ubah la. Ok. Kita kena ubah cara kerja.

P 4: PDT 2.docx - 4:69 [tegur supaya jangan tidur la ..] (261:261) (Rabiha)

Codes: [communication] [FAC- management commitment] [MANAGE-monitoring]

No memos

tegur supaya jangan tidur la. Kena tegur dengan ketua penolong pegawai daerah, EN Zaliza. Akan panggil meeting sy dah kumpul maklumat, sy bincang. Smua

penolong2 pegawai daerah semua kena panggil. Maknanya dia akan briefing la mengapa awak lambat?, apa kelemahan awak?. Ok. Buat balik. Susun. Pastu dia akan wujud balik semua team balik untuk buat balik penambahbaikan.sentiasa. itulah budaya. Ubah ubah ubah.

P 4: PDT 2.docx - 4:71 [Sy akn tengok bhgian pentadbir..] (267:267) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Sy akn tengok bhgian pentadbiran. Semua skali section sy tengok. Bukan sy jaga section sy saja.

P 5: MPK 1.docx - 5:15 [Yg proses kerja dia terlibat d..] (15:15) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Yg proses kerja dia terlibat dgn lean ni untuk kita tengok sejauh mana dia berjalan.

P 5: MPK 1.docx - 5:16 [ya, mmg kna monitor dia pnya p..] (17:17) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

ya, mmg kna monitor dia pnya progress dr semasa ke semasa.

P 5: MPK 1.docx - 5:18 [yg pertama of course kita beri..] (17:17) (Rabiha)

Codes: [MANAGE- training] [MANAGE-monitoring]

No memos

yg pertama of course kita beri pengetahuan melalui pengeluaran pekeling dari semasa ke semasa buku2 tentang lean. Poster2 tu kita letak di jabatan2. Lpas tu kursus kursus. Dan bagi pihak pengurusan, dia kna melaporkanlah sejauh mana pengurusan dan sejauh mana lean tu dilaksanakan oleh jabatan dia dalam mesyuarat2 pengurusan.

P 5: MPK 1.docx - 5:38 [kita bt pemantauan. Of course ..] (45:45) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

kita bt pemantauan. Of course sy akan buat. Tu tugas sy kt sini. Dr masa ke masa, saya pergi je lah ke pejabat tengok . cthnya, tngk last pinjaman perumahan , tengok yg terakhir. Bila kita ambil file, kita tahu. Kita tahu berapa lama, berapa lama, kita boleh tengok. Itu mmg tugas sy.

P 6: MPK 2.docx - 6:14 [Lpas tu nnti bila benda tu ber..] (13:13) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Lpas tu nnti bila benda tu bermunit dlm mesyuarat pengurusan, dia akan Tanya ‘ni mcm mana crita, mna dh kita?’. Dia slalu follow –up .jd kita pun rasa ,eh tak boleh ni,nnti dia tny masa next meeting. Tak syok la kn kalau brapa kali tny x bergerak ni. Dia follow-up closely, itu penting sebenarnya sbg top-management. Drpd segi anak buah ni, slalunya kalau top(&) intermediate buat ,diorg ikut ja. Cuma kalau xda org yg

menggerakkn,xda la. Dia stagnant lah. Mcm operational level mcm kerani,kalu dh xda sapa nk arah, dia tau mcm tu, mcm tu je lah.

P 7: PKNP 1.docx - 7:21 [oh, kita ada platform, kita ad..] (23:23) (Rabiha)

Codes: [communication] [MANAGE-monitoring]

No memos

oh, kita ada platform, kita ada jawatankuasa kita. Setiap 4bulan sekali secretariat kena melaporkan kepada management. Setiap bahagia dia ada projek2 yg dah dibuat. Dilaporkan dalam mesyuarat besar kita. Maknanya dari segi komunikasi tu, ketua2 bahagian dan pengurus2 bahagian akan memantau projek2 ni dari semasa ke semasa.

P 7: PKNP 1.docx - 7:22 [Pastu kita juga ada buat pembe..] (23:23) (Rabiha)

Codes: [communication] [FAC- management commitment] [MANAGE-monitoring]

No memos

Pastu kita juga ada buat pembentangan. Mesyuarat tadi satu hal,lain. Kdg2 kita buat pembentangan projek tu supaya semua orang boleh tengok. Kalau ada question akan ditanya. Cth 'macam mana projek awak ni boleh dapat gini'. Kalau dia tak faham orang lain boleh tolong. Jadi komunikasi tu bergerak dalam dua keadaan. Two ways communication. bawah bawah naik dan atas turun. Tak da masalah. Kita juga communicate melalui sebaran, portal online pastu radio pun ada kita bagi tau. Jd semua ni kita dah take care of , tak da masalah.

P 7: PKNP 1.docx - 7:24 [Maknanya bila sampai masa 3 bu..] (25:25) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Maknanya bila sampai masa 3 bulan semua bahagian kena datang kita panggil kat dewan tu semua bahagian kena buat perbentangan projek2. Jadi dia kena bagi tau la apa perkembangan. Kalau tak buat dia malu la depan org ramai, depan Datuk Khalijah, dia akan Tanya pasal apa tak buat?apa nk jawab. Jd mesti kena buat. By hook or by crook you have to do. Memang ada jadual perancangan yg bukan saja untuk satu tahun tp sy ingat dgn Nooremi pun dah ada 5 tahun perancangan kita. Kita ada Gantt chart, kita control kat situ. Kalu tidak susahlah kita nak gerakkan dia.

P 7: PKNP 1.docx - 7:27 [Saya sebagai pengurus di sini ..] (39:39) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Saya sebagai pengurus di sini saya berperanan untuk membimbing ataupun mengendalikan keseluruhan bahagian. Jadi semua pegawai dan kakitangan bahagian ni kena tertakluk kepada saya la. Jd kaedah yg kita pakai biasalah,arahan iaitu dalam bentuk arahan rasmi. Maknanya whatever arahan yg saya keluarkan maknanya diorang bagi jalan lah.

P 7: PKNP 1.docx - 7:29 [Kemudia saya sendiri sebagai k..] (39:39) (Rabiha)

Codes: [lean secretariat] [MANAGE-monitoring]

No memos

Kemudia saya sendiri sebagai ketua bahagian kita tiap2 kali ada mesyuarat bulanan kita akan tekankan. Mcm bahagian saya ni ,kita memang secretariat kepada setiap

bahagian keseluruhan organisasi jadi kena lagi kuat, kena jadi role model pasal kita yg control semua. So dr segi saya, sy kena lg bersungguh-sungguh melaksanakan lean tu sebab kita secretariat, kita model, org akan tengok bahagian kita. Kalau KP (khidmat pengurusan) tak jalan, KP adalah urusetia, dialah tunggak sbb kita yg merangka keseluruhan program. Di bahagian sy toiap2 bulan kita ada mesyuarat bahagian. Semua kena terlibat. Dan salah satu agendanya ialah agenda lean. Maksudnya projek2 yg dilakukan tu dia kena laporkan dalam mesyuarat tu, dh bergerak takat mana, kalau tak bergerak sebab apa, apa masalah yg dihadapi. So sy kena tahu. Kalau peringkat sy yg kena bt keputusan, saya akan buat keputusan.

P 8: PKNP 2.docx - 8:7 [Ni bengkel bersama executive s..] (7:7) (Rabiha)

Codes: [FAC- management commitment] [MANAGE-monitoring]

No memos

Ni bengkel bersama executive sponsor. Pastu tak da la kita menekankan, kalau ada project kita x biar ja. projek semua dipantau oleh pihak pengurusan sendiri dan yg terutamanya Datuk Hajjah Khalijah la. Dialah yg merealisasikan lean di PKNP ni

P 8: PKNP 2.docx - 8:8 [Ni antara program2 nya lah seb..] (7:7) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Ni antara program2 nya lah sebelum ni- pemantauan, penialaian, reporting, semakan dr semasa ke semasa. So dia akan bagi pendapatlah dr segi macam mana macam mana dan masa tu bos lain pun ada, kalau ada tak sesuai tak relevant, di akn bgi pendapat. Ni cross functional projek2 yg ada mengikut bahagian2 dan unit. Yg ni pun kalau ikutkan dia ikut..pegawai eksekutif, dia ikut carta jgk lah. Bahagian2 yg tak da ni dia join bahagian2 lain utk cross functional.

P 8: PKNP 2.docx - 8:12 [Kita ada jawatankuasa semakan ..] (9:9) (Rabiha)

Codes: [FAC- management commitment] [MANAGE-monitoring]

No memos

Kita ada jawatankuasa semakan pengurusan. jawatankuasa ni bidang kuasa dia tiga, ISO, 5S dgn Inovasi. Lean termasuk bawah inovasi. Datuk Khalijah ni jga merupakan wakil pengurusan kualiti. Dialah kira mcm head dia kt sini. Semakan Pengurusan ni turut memantau status pengurusan lean. Dan projek2 ni kita bentang 4 kali setahun. Kita ada KPI dia. Ni bajet untuk kita laksanakan pengurusan lean

P 8: PKNP 2.docx - 8:18 [lagipun satu lg yg pantau ni o..] (13:13) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

lagipun satu lg yg pantau ni org yg sama dr[d pengurusan kualiti. Dia tau apa semua drpd kualiti kerja ISO kita spatutnya mcm mana, MPO kita mcm mana. Semuanya berkait dan the real things happen.

P 8: PKNP 2.docx - 8:20 [issue kita org x hntr boring p..] (15:15) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

issue kita org x hntr borang penilaian pd masa yg ditetapkan. Sekarang dh xda

masalah. Hantar dpt terus kita boleh check. Dan kita boleh pantau sendiri. Kita ada system utk pantau cnthnya di sini, system penilaian susulan, so kita boleh tengok sama ada semua dh complete. Mana lg merah. Kalu merah mknanya ada masalah. Memang sangat memudahkanlah.dari segi monitoring saya ni pun, dr segi training, tengok staf –brapa hri lg training yg staf tu belum cukup. Semua boleh pantau. Dah banyak biru ni maknanya dah boleh capai sy punya KPI sendiri lah. Dan kalu ikutkan, kita org sblum ni, akhir2 tahun slalu ada masalah, satf call Tanya ‘ sy datang kursus apa ya tahun ni?sy nk isi dlm sy pnya penilaian prestasi ni’. Kan ada boring yg kita kerajaan kna isi. Bila ada system ni dah tak perlu nk call masing2 ada boleh tengok kursus apa yg dia dh pergi. Jd kita dah mudahkan kerja. Pelanggan ni kita kena ingat, bukan sahaja pelanggan luar, pelanggan dalam jga. Mcm sy dr segi training untuk staf dalaman. Itulah pelanggan saya.

P 8: PKNP 2.docx - 8:31 [biasanya latihan dan hebahan s..] (21:21) (Rabiha)

Codes: [MANAGE-monitoring] [STEPS]

No memos

biasanya latihan dan hebahan semua tu kita buat dalam mesyuarat2 bahagian. Jd bila staf bawahan ni terlibat dlm lean, masa bincang lean tu at the same time diorang belajar benda tu. Dlm setiap projek ada champion, fasilitator, team leader- diorang ni semua tahu, dh diberi pendedahan kursus. Mereka ni yg akan berkongsi ilmu dgn staf bawahan yg tidak terlibat dgn kursus tu. Org bawahan yg bnyk terlibat dgn proses diorang, so sedikit sebanyak diorg tahu drpd situ.

P 8: PKNP 2.docx - 8:36 [Kita ada 4 kali setahun dlm me..] (31:31) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Kita ada 4 kali setahun dlm mesyuarat semakan pengurusan. Sebelum mesyuarat tu kita ada bengkel pemantauan projek lean. Bukan saja VSM tp kaedah2 lain.gemba, kanban, 5s.kita pantau benda tu.

P 9: MBSA 1.docx - 9:14 [kita sentiasa buat mesyuarat d..] (62:62) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

kita sentiasa buat mesyuarat dan refreshment supaya jagan tertinggal la. Takut diorang lupa. Kita sentiasa monitor. Every month kalau boleh kita akan panggil

P10: MBSA 2.docx - 10:28 [kita pantau , kita tak da la a..] (56:56) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

kita pantau , kita tak da la audit lean ni saja. Maksudnya kita bt procedure utk ISO atau audit 5s maknanya kita tengok sekali proses kerja tu.

P10: MBSA 2.docx - 10:38 [Ni ada garis panduan pengurusa..] (68:68) (Rabiha)

Codes: [lean secretariat] [MANAGE-monitoring]

No memos

Ni ada garis panduan pengurusan-ada bukti minit mesyuarat.ni ada dia bgi maklum balas “kami amat berpuas hati dgn langkah yg diambil”. Dulu mgkin susah proses tut

p bila dh diselaraskan oleh jab prmbangunan, memudahkan. Mesyuarat pemantauan ni peringkat mbsa lah. Kita panggil wakil2 ketua jabatan dan dipengerusikan oleh peringkat urusetia iaitu Pn Wan lah. Dia akan Tanya status, apa maklum balas projek. Kita bt meeting penyelarasan la untuk projek2 ni.

P10: MBSA 2.docx - 10:39 [Tp dgn kekangan masa pd certai..] (70:70) (Rabiha)

Codes: [MANAGE-monitoring]

No memos

Tp dgn kekangan masa pd certain peringkat kita akan panggil lah dalam 2 bln sekali. Dlm rekod ni ada kita buat mesyuarat bln mei, pastu bln jun-maknanya sebulan sekali lah. Bila kita nk cepatkan projek tu kita lg kerap la memanggil.

P10: MBSA 2.docx - 10:40 [Kadang2 Jabatan ni kekangan dg..] (70:70) (Rabiha)

Codes: [CHL- time] [communication] [MANAGE-monitoring] [Sustain]

No memos

Kadang2 Jabatan ni kekangan dgn kerja hakiki dia. Kalau kita tak panggil, dia pun lupa projek dia. Bila kita pantau tu dapatlah cepat. Seeloknya setiap bulan kita panggil. Tp sekarang ni lebih mudah sebab kita ada group whatsapp. Apa2 program pun kita akan buka satu Group whatsapp kita. So kita akan tulis'ni kita kena hantar sekarang'. Jd semua org akn hantar la. Tp xda ber record la, utk peringkat kita ja. Tp yg formal tu kita buat bulanan mcm ni lah. Ini status2 mulanya bila, tamat projeknya bila, laksananya bila.



Appendix G

Codes Primary Document Table

CODES-PRIMARY-DOCUMENTS-TABLE												
Report created by Rabiha - 04/15/2016 11:51:59 AM												
HU: [D:\ANALYSIS -transcript 5 organizations.hpr7]												
Code-Filter: All [26]												
PD-Filter: All [10]												
Quotation-Filter: All [400]												
	P1(A)	P2(A)	P1(B)	P2(B)	P1(C)	P2(C)	P1(D)	P2(D)	P1(E)	P2(E)	TOTALS:	
CHL- knowledge	2	3	4	0	2	2	0	1	0	1	15	
CHL- time	4	0	0	0	1	0	0	0	0	2	7	
CHL-resistance	0	0	1	4	2	2	3	1	0	1	14	
CHL-resource	0	0	1	1	0	0	0	0	0	0	2	
TOTALS:	6	3	6	5	5	4	3	2	0	4	38	

CODES-PRIMARY-DOCUMENTS-TABLE

Report created by Rabiha - 04/15/2016 10:43:22 AM

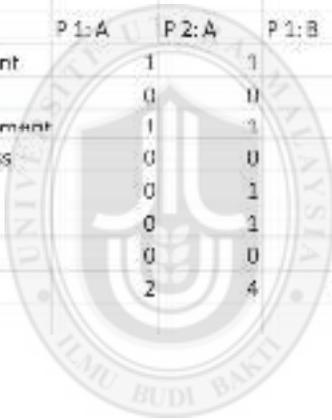
HU: [D:\ANALYSIS -transcript 5 organizations hpr /]

Code-Filter: All [26]

PD-Filter: All [10]

Quotation-Filter: All [400]

	P 1: A	P 2: A	P 1: B	P 2: B	P 1: C	P 2: C	P 1: D	P 2: D	P 1: E	P 2: E	TOTALS:
FAC- employee involvement	1	1	3	5	2	5	0	3	0	1	21
FAC- knowledge	0	0	1	0	3	0	2	0	1	1	8
FAC- management commitment	1	1	6	7	4	5	5	6	1	4	40
FAC- organization readiness	0	0	0	0	2	0	1	0	0	0	3
FAC-communication	0	1	9	10	0	3	3	0	0	5	31
FAC-culture	0	1	5	5	1	2	0	3	0	1	18
FAC-teamwork	0	0	3	2	0	0	0	0	0	0	6
TOTALS:	2	4	27	29	12	15	11	12	2	13	127



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CODES-PRIMARY-DOCUMENTS-TABLE

Report created by Rabiha - 04/15/2016 10:16:17 AM

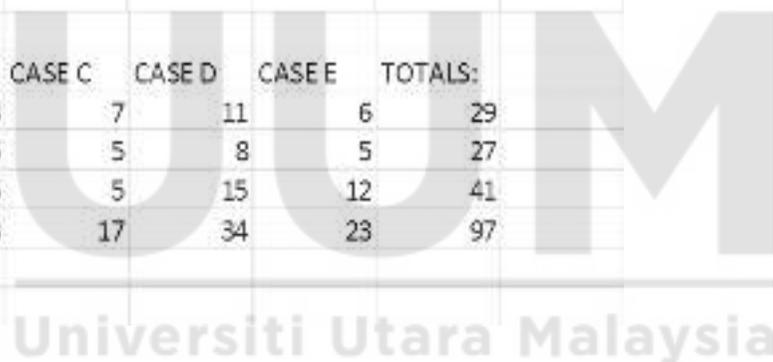
HU: [D:\ANALYSIS -transcript 5 organizations.hpr7]

Code-Filter: All [26]

PD-Filter: All [10]

Quotation-Filter: All [400]

	CASE A	CASE B	CASE C	CASE D	CASE E	TOTALS:
MANAGE- motivation	2	3	7	11	6	29
MANAGE- training	4	5	5	8	5	27
MANAGE-monitoring	4	5	5	15	12	41
TOTALS:	10	13	17	34	23	97



Appendix H

Framework Validation Form

FRAMEWORK VALIDATION FORM

Section A: Background of Expert

247

1. Full name:

2. Position:

3. Organization's name:

4. No. of working years

5. Phone number:

6. E-mail :

7. Working experience:

8. Akademik background:

9. Experience in lean management:



Section B: Question

What is your opinion regarding the framework for lean management implementation based on the following aspects?. (Mark on any of the related answers given and give your opinion).

1. Overall structure

	<i>A complete approach that consists of important elements required in lean management implementation</i>
	<i>Provide a simple and useful guide for the beginners to start implement lean management</i>

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Opinion:



2. Clarity

	<i>Framework clearly shows how to implement lean management</i>
	<i>Readers can understand the success factors and the elements required in managing change to lean management implementation</i>

Opinion:

3. Practical

	<i>The framework is simple, practical and can be applied in real working environment</i>
	<i>By referring to the framework as a guide before implementing lean, the problems and challenges in lean management implementation can be overcome.</i>
	<i>Easy to understand and implement.</i>

Opinion:

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4. Other issues/ comments:

