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Factors of success for the effective implementation of lean manufacturing projects within the banking sector in South Africa

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Abstract

With the current global financial crisis, the uncertain economic outlook in South Africa and the pressure on financial institutions to operate more effectively and efficiently, there has been a significant shift in focus for banks in South Africa. This shift in focus entails placing greater emphasis on stream-lining internal operations, an increased focus on customer needs, and a superior service delivery in relation to competitors, in order to retain their existing customer base as well as to increase market share. Many organisations have adopted lean manufacturing as their approach to process optimisation and quality management, in an effort to improve their efficiency and value offering for customers. The objective of this research was to identify a financial institution in South Africa that has already adopted the lean approach, and to focus on the physical implementation of their lean projects so as to understand what the success factors are in this regard.

This paper presents a detailed literature review, highlighting key success factors for the implementation of lean. The research questions are based on these factors. The report presents findings from 20 face-to-face interviews with subjects involved in the physical implementation of lean projects in the bank selected for the analysis.

The paper reveals that the top five success factors for the successful implementation of lean projects are commitment and involvement from senior management; buy-in from staff that are being effected by the project; resources with the relevant and appropriate skills and competencies to execute the change, a

culture focused on lean; and finally, for all parties involved to have a clear shared goal and understanding of what the project aims to deliver.

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university.

I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Antonios Christodoulou

13th November 2008

Dedication

To my beautiful wife Natalie, who has supported me and been my rock of salvation for the past two years. Your ongoing understanding, consistent efforts to motivate me, and drive to see me through this have brought me to where I am today. Thank you for being my reason for reason. Love you.

To the Almighty Lord who has guided me and protected me, thank You for walking this journey with me and being my side every step of the way.

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- All 20 respondents from the bank in scope who gave of themselves to share their honest experiences and knowledge with me during their working hours.

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List of abbreviations

FSC – Future state components

GDP – Gross domestic product

ICBC – Industrial and Commercial Bank of China

LDO – Lean deployment office

MBNA – Maryland Bank National Association

MTP – Medium term plan

TPS – Toyota production system

TQM – Total quality management

VSM – Value Stream Manager

CHAPTER 1: Introduction to Research Problem

1.1 Introduction

Financial institutions have gone through exceptional change in the last decade. The leading banks have redirected their focus from products to customers, developed new consumer-friendly channels, and extended their geographical reach through numerous mergers and acquisitions (Bessler, Burgess, Dallas-Feeney, Hyde, Kamra, McKeon and Tipping, 2002).

As a result, banks are now grappling with very complex business models. Duplicated processes, weak execution outputs, poor allocation and use of resources and redundant systems have slowed decision making, hindered speed of delivery and impeded the capture of scale advantages (Bessler ***et al***. 2002).

This increase in complexity has largely nullified the benefits of the waves of cost reduction initiatives that banks have gone through. If continued, this approach will impact the banking industry's market performance and will create openings for nimble market entrants (Bessler ***et al***. 2002). Banks now need to focus their efforts on their internal operations in order to be more productive in their workings and dealings with customers.

Lutz (2008) states that financial institutions can dramatically increase their productivity by embracing the lean manufacturing techniques pioneered by industry

giant Toyota Motor Corporation as one of the methods aimed at process improvements.

1.2 Motivation for research

With the uncertain economic outlook in South Africa over the next few years, improving efficiency and focusing on customer value will play a major part in financial institutions' ability to achieve earnings forecasts. As organisations struggle to remain profitable during periods of economic deceleration, many have adopted process improvement methods as a strategy for improving competitiveness. Lean manufacturing itself has been used over the past decades by various organisations in the aim to improve efficiency (Worley & Doolen, 2006).

Through lean manufacturing, improving quality and efficiency becomes a continuous pursuit that reduces costs and waste, rather than a series of one-off initiatives. Benefits are thus realised in both processes and outputs (Hines, Holweg, & Rich, 2004).

It is one thing to use lean manufacturing as an approach to quality management. However, the success or failure of lean manufacturing is heavily reliant on the ability of the organisation to physically implement the initiatives identified (Achanga, Shenhab, Roy & Nelder, 2005).

For example, only one third of banks across the globe meet their project objectives, with 50 percent of their projects being delayed and missing their initial set target date (Robertson & Williams, 2006).

Robertson and Williams (2006) state that only 17 percent of completed projects met the success criteria (scope, time and cost), with the average costs exceeding the original budget by 189 percent. IT projects, which form the majority of initiatives in the banking industry, are only showing a three percent success rate.

From a success factor perspective, if financial institutions wish to improve their position in the market, their ability to constantly move with change and demand – and to move in the right direction – is any bank's competitive advantage. There is no set blueprint for the future; hence the importance of successful implementation of projects (Nielsen & Vinther, 1996).

1.3 Research aim

This research seeks to identify the factors that will determine the successful implementation of lean projects within a financial institution in South Africa.

The research will aim to identify factors of success within the following areas:

- Management's involvement and commitment – A top-down approach and commitment to lean are essential to the success of the project. Pay (2008)

states that the leading cause of lean project failure is a lack of management's commitment.

- Skills and expertise of resources – This is an essential aspect of process and productivity improvement. One needs the right players in the right positions (Pay, 2008).

- Part of the strategy – Before deciding to implement lean or any productivity improvement programme, Pay (2008) states that management must first examine its business strategy and ask the question: Will a productivity improvement programme such as lean contribute directly to the company's strategy?

- Culture readiness – In order to sustain the lean process changes, businesses need the culture to be supportive. Lean requires technical change to various processes and the right attitudes and behaviours of the workforce to reinforce the continuation of those new processes with the waste removed (James, 2006).

The research intends to identify one of the major banks in South Africa that has adopted lean manufacturing as its means to process improvement; to then analyse the implementation of its projects (in scope of the research); and to benchmark them against Pay's findings (2008), the literature of Jiang, Gary, & Joseph (1996),

and the work of Motwani (2003) and The Standish Group International (2008), in order to understand the approach used to implement the lean projects and to further understand whether the success factors for projects in general apply to the success factors of lean projects.

1.4 Report structure

Chapter 1 discusses the current environment that financial institutions in South Africa face and provides a compelling argument for the adoption of lean manufacturing as a solution to driving quality management through process improvements; driving towards them being competitive.

Chapter 2 reviews literature on the concept of efficiency as it relates to lean manufacturing and project management within financial institutions in South Africa. It further outlines the views of those involved in the lean projects being implemented at the bank selected for the analysis, and focuses primarily on the factors that will drive the successful implementation of lean projects.

Chapter 3 states the questions that this research aims to address.

Chapter 4 outlines the research methodology and criteria that were applied for the selection of the population and sample, covers the collection of the data and discusses the analysis approach of the data.

Chapter 5 presents the data collected. The data is offered in a categorised, consolidated format based on the themes that emerged from the semi-structured interviews that were conducted.

Chapter 6 provides the results of the research as it relates to the research questions and to the literature reviewed.

Chapter 7 articulates the merits of this research and provides recommendations for the effective implementation of lean projects in financial institutions in South Africa.

CHAPTER 2: Literature Review

2.1 Introduction

Metcalfe (2007) conducted a study that aimed to identify, analyse and understand the strategic issues that are currently being experienced in the South African banking sector. Figure 2.1 below depicts the results from 22 South African banks that were asked to rate the most pressing issues they face on a scale of 1 to 5.

Figure 2.1: Responses from 22 South African banks (Metcalfe, 2007)

The results from Figure 2.1 above illustrate that the four most pressing issues for 61 percent of banks in South Africa were improving revenue growth, profit performance, client focus and retaining existing clients.

Organisations are starting to adjust their efforts from “profit maximisation” type initiatives to “maximising profits” type initiatives to ultimately deliver increased customer satisfaction. The pressures of competition, economic constraints and globalisation are forcing organisations to not only reconsider the processes of their products and services; but also the way they are delivered to their customers (Seth, Deshmukh and Vrat, 2005).

The issues raised above can be alleviated through the focus on service quality. Seth ***et al.*** (2005) state that service quality directly impacts customers and their experiences of an organisations offering. Service quality has a high impact on a business’s performance, customer satisfaction, customer loyalty and profitability.

Lean manufacturing principles focus on service quality by driving value flow through to the customer. Womack, Jones & Roos, (1990) state that:

“The critical starting point for lean thinking is value. Value can only be defined by the ultimate customer. And it's only meaningful when expressed in terms of a specific product (a good or a service, and often both at once), which meets the customer's needs at a specific price at a specific time.”

This chapter will explore the literature available on lean manufacturing and project management in order to extract the factors relevant to successfully implementing lean initiatives in the banking sector.

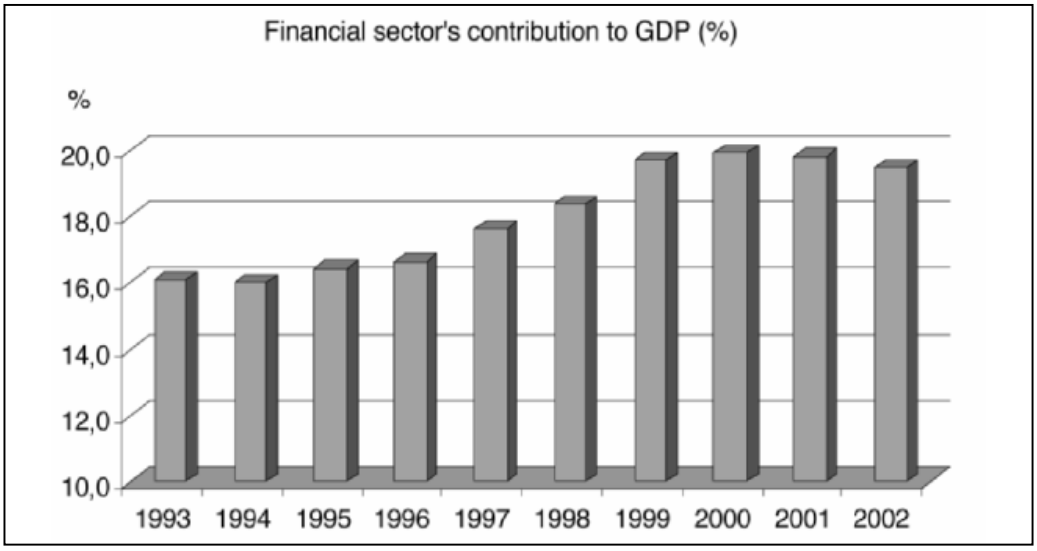
The review will focus on the following six areas:

- The banking sector and its impact on the South African economy;
- The current need by the banking sector to operate more efficiently;
- Current process improvement practice being utilised;
- Lean manufacturing;
- Success factors for project management; and
- Lean projects.

2.2 The South African financial sector

The South African financial sector takes into its scope the banking, insurance and security industries, which contribute around 20 percent to economic activity measured in terms of GDP to the South African economy (Hawkins, 2004). Figure 2.2 below illustrates how the financial sector has been increasing its economic contribution and value since 1993.

Figure 2.2: Contribution of the financial sector to GDP (Hawkins, 2004)



According to Hawkins (2004), the importance of the financial sector can be assessed in terms of the size of the sector's assets. Table 2.1 below illustrates that the size of the banking industry's assets has increased steadily as a percentage of GDP. By 2001, the value of banks' assets surpassed GDP for the first time. It could be argued that the size of these assets relative to GDP underlines the significance and potential influence of the banking sector to the South African economy.

Table 2.1: Assets and loans as a percentage of GDP (Hawkins, 2004)

Banking industry				
	Value of assets (R bn)	Assets as a % of GDP	Value of loans and advances (R bn)	Loans and advances as a % of GDP
1993	294,6	69,1%	233,3	54,8%
1994	344,2	71,4%	270,8	56,2%
1995	399,1	72,8%	315,3	57,5%
1996	472,1	76,4%	373,0	60,4%
1997	550,5	80,3%	440,4	64,2%
1998	654,8	88,6%	510,7	69,1%
1999	728,0	90,9%	554,7	69,3%
2000	819,0	92,2%	612,6	69,0%
2001	1 049,9	106,8%	732,8	74,6%
2002	1 100,7	100,2%	800,2	72,8%

The South African banking sector remains a concentrated industry with a few players dominating, particularly in the provision of services in the retail market. As at the end of quarter one 2007, the five largest banks held approximately 90 percent of the South African banking assets (as indicated in Table 2.2 below) with foreign banks holding eight percent and other local banks holding two percent. The

total banking assets have grown by 21 percent to R2,177 billion since 2006 to the end of quarter one 2007 (Metcalfe, 2007).

Table 2.2: All of the South African banks and their total assets (Metcalfe, 2007)

	Total Assets
	R'000
THE STANDARD BANK OF SA	495,516,689
ABSA BANK	429,276,641
FIRSTRAND BANK LIMITED	358,037,769
NEDBANK	347,485,285
INVESTEC BANK	113,073,016
CITIBANK N.A	50,087,044
JP MORGAN CHASE BANK (JOHANNESBURG BRANCH)	28,892,255
IMPERIAL BANK	27,402,365
CALYON CORPORATE AND INVESTMENT BANK	25,167,412
DEUTSCHE BANK AG	21,409,225
ABN AMRO BANK	15,223,952
AFRICAN BANK LIMITED	9,058,263
HSBC BANK PLC (JOHANNESBURG BRANCH)	8,945,723
COMMERZBANK	7,813,864
SOCIETE GENERALE JOHANNESBURG BRANCH	5,808,939
STANDARD CHARTERED BANK	4,396,141
MERCANTILE BANK	4,197,481
TEBA BANK LIMITED	2,367,154
CAPITEC BANK	1,697,334
REGAL TREASURY PRIVATE BANK	1,521,813
CHINA CONSTRUCTION BANK CORPORATION - JHB	1,468,088
ALBARAKA BANK	1,314,804
SASFIN BANK	1,232,648
HBZ BANK	1,171,591
MEEG BANK LIMITED	899,470
MARRIOTT CORPORATE PROPERTY BANK LIMITED	825,133
THE SA BANK OF ATHENS	807,835
STATE BANK OF INDIA	702,377
GBS MUTUAL BANK	561,998
BANK OF TAIWAN SOUTH AFRICA BRANCH	552,952
RENNIES BANK LIMITED	519,997
HABIB OVERSEAS BANK	468,446
BANK OF CHINA JHB BRANCH (T/A BANK OF CHINA)	283,321
VBS MUTUAL BANK	235,470
BANK OF BARODA	188,049
Total Assets	1,968,610,544

All of the above banks compete fiercely with one another for market share in the retail, business and corporate markets. Competitive strategies in the past were seldom centred on cost, as greater market share was often achieved through differentiated products or new product developments (Thayser, 2006).

The loss of market share by the top four players and the related increase in share won by smaller niche and foreign banks since 1994 has meant that in all, foreign and other banks are now making up close to a quarter of the share of banking assets in South Africa (Hawkins, 2004).

South Africa's financial sector tends to follow global trends, so it is important to consider developments in the global markets. A visible trend is the interest in mergers and acquisitions of financial institutions. Foreign investors require financial services and infrastructure to facilitate their everyday needs and manage their capital flows and financial interests. To meet his need, global financial institutions are acquiring other financial institutions in order to leverage off their existing infrastructures and networks (Thayser, 2006).

In the US, mergers and acquisitions have consolidated the financial services sector over several decades. The acquisition has increased in recent years. In June 2005 Bank of America bought MBNA, an independent credit-card lender, for US$35 billion, paying a 30.6 percent premium over the market price for MBNA shares (Economist Intelligence Unit, 2008).

Bank of America's aggressive expansion drive also included the US$48 billion purchase of FleetBoston in April 2004. By 2006, however, the tables had turned, with credit-card businesses growing so powerful they were now the ones looking to acquire interests in major banks. In March 2006, Capital One, a credit-card issuer, bought North Fork Bancorp for about US$14.6 billion in stock and cash. The merger created one of the 10 largest banks in the US (Economist Intelligence Unit, 2008).

Regional banks in the US have also tried to expand by acquiring mid-size rivals. Regions Financial bought Alabama-based AmSouth Bancorp for nearly US$10 billion in May 2006, catapulting the combined firm into banking's top 10. In the same month, Wachovia announced an agreement to buy Golden West Financial, for US$25.5 billion. In December, Bank of New York and Mellon Financial merged to become the largest provider of custody services. (Economist Intelligence Unit, 2008).

In the South African context there have been two distinct acquisitions that represent this trend.

In 2005, Barclays Bank acquired a 56 percent shareholding in Absa Bank Ltd (offering R82.50 per Absa share), making it the biggest merger and acquisition in South African history. With direct foreign investment being a major contributor to economic growth, the first phase of the Barclays-Absa integration programme

generated R67 million in savings since the transaction was completed, more than double the current projections (Maltz, 2005).

In 2007, there was the 20 percent stake in Standard Bank by ICBC (Industrial and Commercial Bank of China) with the final transaction value at $36.7 billion. The Standard Bank-ICBC transaction represents approximately 1.3 times the average annual foreign direct investment in South Africa from 2004 to 2006.

The above literature has given insight on the importance of the financial sector to the South African economy. With the present challenges being experienced by the banks, lean manufacturing can be utilised by the financial sector to address these current issues. However, Lutz (2008) states that it is not sufficient for a bank to replicate the manufacturing sector's experience and to "cut and paste" what is pertinent and what is not from an existing working lean framework. In order for lean to be implemented successfully, the approach needs to be designed for that particular industry.

In the manufacturing sector, the first step in identifying waste is to physically walk the process on the production floor. One of the key challenges Lutz (2008) refers to is that in banks, processes are often not tangible as they are hidden amongst workflow systems, e-mails and phone calls between different business units. Most employees involved in the different business units that form the overall process of a product or service have never even talked to employees from other units before.

The “pigeonholing” of traditional roles obscures the overall view of the process (Holden, 2003). It is for this reason that the adoption of project management practices is fundamental to the successful implementation of lean manufacturing in financial services.

2.3 The need for operation efficiency

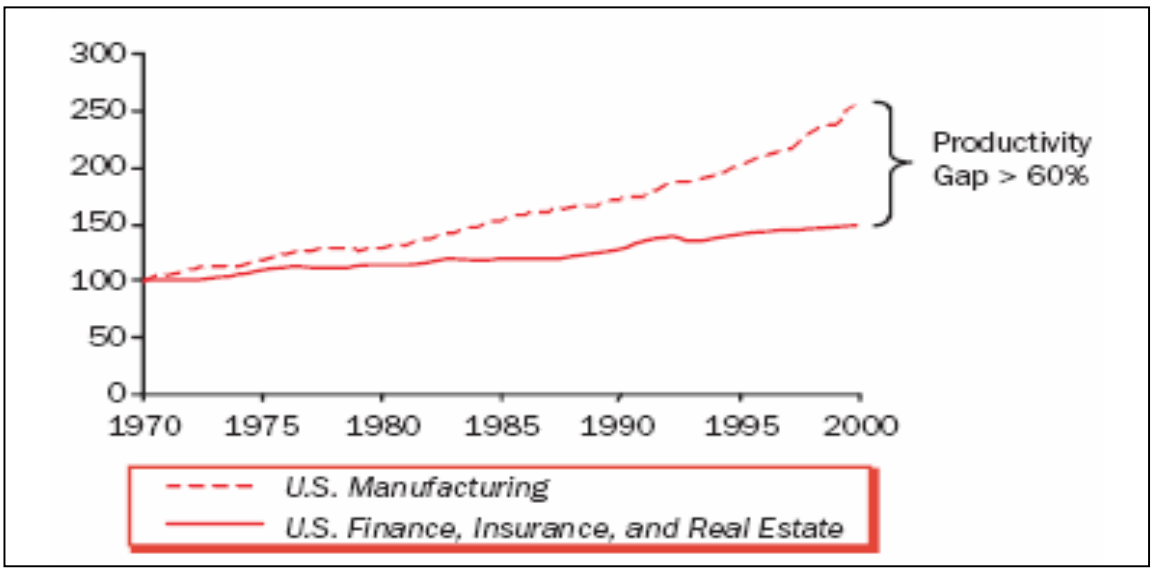
Canel, Rosen and Anderson (2000) state that the expectation of customers with regard to services and products they acquire has increased as a result of emerging technologies, improved communications and globalisation. This has resulted in companies having to focus their centre of attention on the quality of the products and services they provide and on the overall experience of their customers. In response to global competition, organisations are forced to find ways to reduce costs, improve quality, and meet the ever-changing needs of their customers to remain profitable.

Based on the need to compete and run efficiently, many Western organisations are now taking interest in Japanese methods and practices and are attempting to imitate them, especially within the manufacturing sectors (Naylor, 2000). Naylor (2000) states that the interest in these methods has increased as a result of the large performance gaps that are apparent between Japanese and Western manufacturers, in terms of both productivity and quality.

An example of this bent towards adapting performance improvement methods from the Japanese can be found within the manufacturing sector in the US. Since the adoption of these performance practices, there has been a tremendous increase in their productivity compared to service-based type Organisations.

Bessler ***et al***. (2002) state through their analysis that since 1970, the gap in productivity between the financial sector and the manufacturing industry in the US has widened by over 60 percent. Figure 2.3 below illustrates this movement and indicates how the gap between the two sectors has increased.

Figure 2.3: US labour productivity growth – manufacturing vs. financial services (Bessler *et al*., 2002)



According to Bessler ***et al***. (2002), the gap in productivity illustrated above is attributed to the manufacturing industry's drive for process improvements through

the adoption and implementation of lean manufacturing. These practices and techniques can be applied to the financial sector with equal success (Bessler ***et al***., 2002).

2.4 Process improvement practices

The literature above has indicated the importance of financial institutions finding a new way to manage and operate their products and services, as their need to operate more efficiently becomes increasingly apparent.

Process improvement is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance (Phipps, 2006).

Many organisations have found that the application of process improvement techniques has led to significant improvements in their operations and efficiency (Andersson ***et al***. 2006).

The literature points to the following three practices as the most widely used and promoted for process improvements:

- Total quality management (TQM).
- Six sigma.
- Lean manufacturing.

TQM is defined as a continuously evolving management system consisting of values, methodologies and tools; the aim of which is to increase customer (internal and external) satisfaction with reduced amount of resources (Hellsten & Klefsjö, 2000).

Six sigma is defined as a business process that allows organisations to improve their bottom line vigorously by designing and monitoring everyday business activities in a way that minimises waste of resources while increasing customer satisfaction (Henderson & Evans, 2000).

Lean manufacturing is about controlling the resources in accordance with the customers' needs and about reducing unnecessary waste (Womack ***et al.,*** 1990).

Among the abovementioned quality management concepts, Andersson ***et al***. and Bessler ***et al***. (2002) state that lean manufacturing is one of the more wide-spread and successful process improvement methods to date. This research report will be placing more focus on lean manufacturing as the chosen method of process improvement for the banking sector.

2.5 Lean manufacturing

Much of the literature points to Taiichi Ohno as the originator of lean in the 1930s, although some of the literature points to the first signs of lean thinking as early as the 1900s by Henry Ford, who created the first auto production line. Toyota,

through the analysis of Ford's original concepts and other innovations, invented the Toyota Production System – TPS (Lean Enterprise Institute, 2008; Motwani, 2003).

TPS shifted its focus from individual machines for manufacturing products to the flow of the product through the total end-to-end process (Womack ***et al***., 1990). Through this approach to process improvement, the TPS and its lean principles provided insight into the way a process is recognised, documented and assessed for improvement (Lapinski, Horman and Riley, 2006).

Manuele (2007) stated that the goal of lean is to flow more value to the customer for fewer resources by eliminating waste and reducing end-to-end time. Manuele (2007) defines waste as the activities or steps in the process that consume resources, add costs or create unproductive time without creating value.

Muda is the traditional general Japanese term for an activity that is wasteful and doesn't add value or is unproductive. There are seven distinct types of waste that were identified by Toyota where continuous reduction was focused: defects, overproduction, transportation, waiting, inventory, motion and over-processing (McBride, 2003; Manuele, 2007). This is depicted in more detail in Table 2.3 below.

Table 2.3: The seven wastes prominent to lean manufacturing (Manuele, 2007)

WASTE TYPE	DEFINITION
Defects	Defects in products or services are wasteful in that they consume material and require additional production and correction time.
Overproduction	Overproduction is the production or acquisition of items beyond what is actually needed. Where this occurs, additional capital investment is necessary and costs are increased since additional storage space is necessary, but no value is added. It also results in excessive material handling and its accompanying risks
Transportation	Transportation waste is that which requires additional and unproductive moving of a product in process. Each time a product is moved there is added risk of damage to the product, equipment and facilities, as well as of harm to personnel. In the moving process, the product fills valuable space and requires time expenditures without adding value.
Waiting	Waiting refers to both the unproductive time spent by workers waiting for material or components in a process to arrive and the time required for excess production to flow through the system. Another example is material or information waiting to be worked on to complete a customer order.
Inventory	Inventory in excess of what is needed requires an additional capital outlay and produces waste because of the additional storage space and handling time involved. As noted, frequent handling of inventory adds to the risk of injury.
Motion	Motion refers to workers' unproductive time and movement where the process is cumbersome, inefficient and wasteful. This implies that the process also may be hazardous.
Over-processing	Over-processing means using a more expensive or otherwise valuable resource than is needed for the task. It also includes costly rework.

To improve or eliminate waste in a particular process that drives a product or service, you need to build your solution based on who your customers are and what will add value to them through the new optimised process (Lapinski ***et al***., 2006).

However, the creation methods that should add value to the customer are often associated with cost-reduction methods only; which, according to Hines, Holweg & Rich, (2004) is a misunderstanding of lean.

This has started to change as lean thinking has evolved with time. Table 2.4 illustrates the literature that points to the evolution in mindset behind the implementation and practices of lean (Hines ***et al.***, 2004). The table demonstrates that in the early 1990s, focus was on quality. Quality, cost and delivery was then the focus in the late 1990s, but the focus shifted to customer value from 2000 onwards.

Table 2.4: The evolution of lean thinking (Hines *et al.*, 2004)

Phases	1980-1990 Awareness	1990-mid 1990 Quality	Mid 1990-2000 Quality, cost and delivery	2000+Value system
Literature theme	Dissemination of shop-floor practices	Best practice movement, benchmarking leading to emulation	Value stream thinking, lean enterprise, collaboration in the supply chain	Capability at system level
Focus	JIT techniques, cost	Cost, training and promotion, TQM, process reengineering	Cost, process-based to support flow	Value and cost, tactical to strategic, integrated to supply chain
Key business process	Manufacturing, shop-floor only	Manufacturing and materials management	Order fulfilment	Integrated processes, such order fulfilment and new product development
Industry sector	Automotive – vehicle assembly	Automotive – vehicle and component assembly	Manufacturing in general – often focused on repetitive manufacturing	High and low volume manufacturing, extension into service sectors
Shingo (1981, 1988)	Shingo (1981, 1988) Schonberger (1982, 1986) Monden (1983) Ohno (1988) Mather (1988)	Womack *et al.* (1990) Hammer (1990) Stalk and Hout (1990) Harrison (1992) Andersen Consulting (1993, 1994)	Lamming (1993) MacBeth and Ferguson (1994) Womack and Jones (1994, 1996) Rother and Shook (1998)	Bateman (2000) Hines and Taylor (2000) Holweg and Pil (2001) Abbas *et al.* (2001) Hines *et al.* (2002)

Womack ***et al.*** (1990) state value creation as the first principle of lean thinking. By that time, lean had moved away from a “factory-floor focus” on waste and cost-reduction, towards an approach that consistently sought to enhance value (or perceived value) for customers by adding product or service features through the removal of wasteful activities. This was a key development, as value was now linked directly to customer requirements, and was no longer defined through the sole view of cost-reduction.

While value extraction is made possible through the utilisation of technical tools and techniques, there is still another aspect of lean that many companies overlook: namely, focus on the people who are responsible for the changes and the sustainability of the changes (Hines ***et al.,*** 2004).

James (2006) comments that in order to sustain the lean technical changes implemented, one needs the organisation's culture to strive for continuous improvements. Lean requires the right attitudes and behaviours to reinforce the continuation of those new processes. Without the intent to build an effective, flexible process, there is a risk that any improvements achieved will not be sustained in the future.

Lean manufacturing as depicted above can add much value to organisations through its practices. In order for the South African banking sector to reap the benefits of lean manufacturing, banks need to have the right competencies and skills in place to execute the change effectively.

2.6 Success factors for project management

Project management is an effective approach to successfully implementing lean manufacturing in the financial sector. Given that the rate of failure in projects is extremely high, it is essential to understand the underlying factors that cause projects to fail (Robertson & Williams, 2006).

To understand the success and failure factors that effect the implementation of projects, the literature review focuses on the CHAOS report. The CHAOS results provide a global view of project statistics across three hundred and sixty five companies but do tend to have a heavier concentration on the United States and Europe. Sixty-one percent of respondents in 2008 were U.S.-based, 22 percent were European, and the remaining 17 percent represented the rest of the world. Fifty-three percent of these companies are considered Fortune 1000 type companies; another 31 percent would be considered midrange; and the 16 percent are in the small business category. They span a diverse number of vertical industries and organizations. (The Standish Group International, 2008).

In order to understand what makes projects fail and succeed, we need to first clearly differentiate these two outcomes. This research turns to the Standish Group's CHAOS report to make this distinction. The CHAOS report stipulates the indicators for success and failure. The report divides projects into three distinct effects:

"Project Success" marks an initiative that is completed on time and budget, with all features and functions as specified (The Standish Group International, 2008).

“Project Challenged” refers to initiatives that were completed, but were over budget, over time, and/or those in which of all the features and functions that were originally specified were absent (The Standish Group International, 2008).

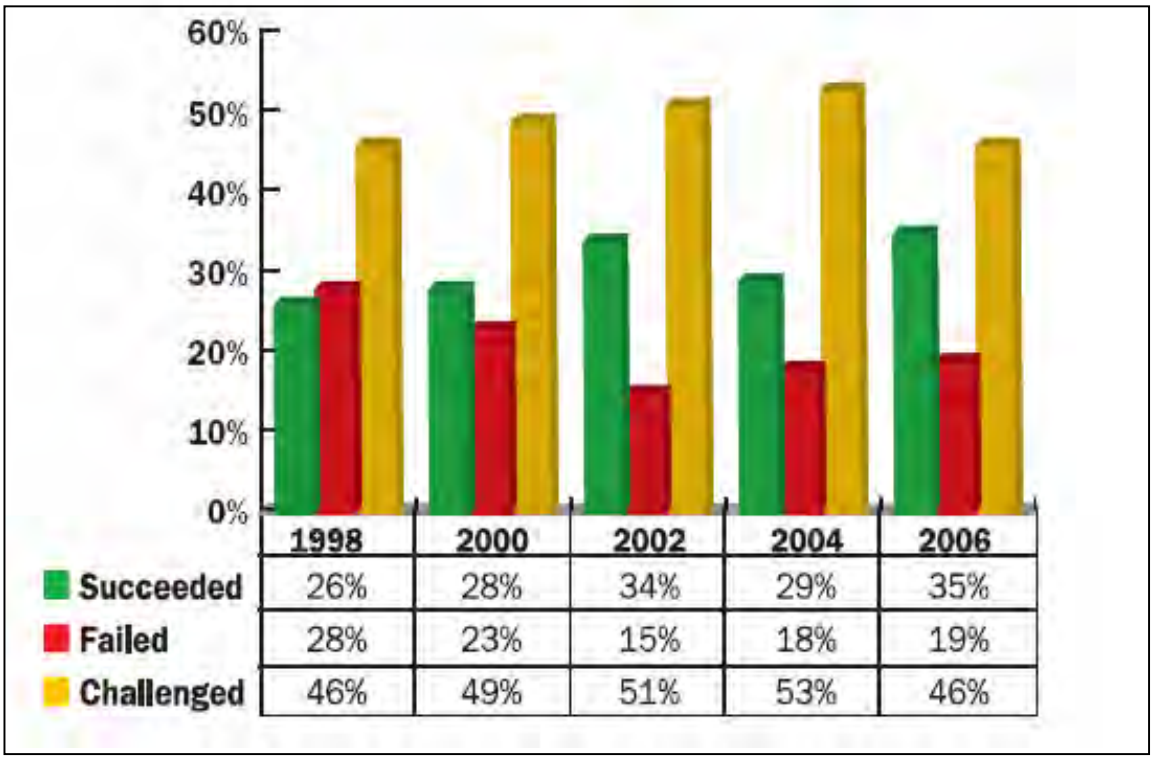
“Project Impaired/Failed” describes initiatives that were abandoned or cancelled at some point and thus became total losses to the business. (The Standish Group International, 2008).

Frese, Sauter & St. Louis (2003) state, with reference to the 1994 CHAOS report, that only 16.2 percent of projects were successful by all measures; and that of the 70 percent of projects that were not successful, over 52 percent were partial failures and 31 percent were complete failures.

However, the latest CHAOS project published by the Standish Group showed a distinct increase in project success, with 35 percent of all projects succeeding; meaning they are delivered on time, on budget, with required features and functions (The Standish Group International, 2008).

Figure 2.4 below illustrates an 18.8 percent increase in project success rate over the past eight years (results in the below graph are from 1998 - 2006).

Figure 2.4: 1998 – 2006 project resolutions results (The Standish Group International, 2008)



	1998	2000	2002	2004	2006
Succeeded	26%	28%	34%	29%	35%
Failed	28%	23%	15%	18%	19%
Challenged	46%	49%	51%	53%	46%

These numbers represent a steady increase in the success rates from the previous study, as well as a slight increase in the number of failures. The low point in the last five periods was in 1998, with only 26 percent of projects successful, and 28 percent failed.

The Standish Group states that the key to project success through their years of analysis is "***creating and maintaining a healthy project management ecosystem***" (The Standish Group International, 2008).

A healthy project ecosystem also allows for failure without the disastrous consequences normally associated with failure. Projects are inherently uncertain in nature, and every organization needs to try penetrate projects from time to time. The main incident you want to avoid is not project failure, but the failure to commit resources and manage projects in spite of their risk (The Standish Group International, 2008).

Table 2.5 below illustrates the top 10 project success factors from the CHAOS report. The report concludes that these were the elements that were most often pointed to as major contributors to a project's success. These essentials alone do not guarantee success; however, if these are executed effectively, a project, will have a much higher probability of success (The Standish Group International, 1994).

Table 2.5: Project success factors derived from CHAOS (The Standish Group International, 1994)

Project Success Factors	% of Responses
1. User Involvement	15.9%
2. Executive Management Support	13.9%
3. Clear Statement of Requirements	13.0%
4. Proper Planning	9.6%
5. Realistic Expectations	8.2%
6. Smaller Project Milestones	7.7%
7. Competent Staff	7.2%
8. Ownership	5.3%
9. Clear Vision & Objectives	2.9%
10. Hard-Working, Focused Staff	2.4%
Other	13.9%

Table 2.6 below illustrates the top 10 challenging factors that the respondents experienced in project environments. The report concludes that these were the factors that most often contributed to projects experiencing challenges.

Table 2.6: Project challenge factors derived from CHAOS (The Standish Group International, 1994)

Project Challenged Factors	% of Responses
1. Lack of User Input	12.8%
2. Incomplete Requirements & Specifications	12.3%
3. Changing Requirements & Specifications	11.8%
4. Lack of Executive Support	7.5%
5. Technology Incompetence	7.0%
6. Lack of Resources	6.4%
7. Unrealistic Expectations	5.9%
8. Unclear Objectives	5.3%
9. Unrealistic Time Frames	4.3%
10. New Technology	3.7%
Other	23.0%

Table 2.7 below illustrates the top 10 factors that the respondents rated as the main reason why their projects failed.

Table 2.7: Project failure factors derived from CHAOS (The Standish Group International, 1994)

Project Impaired Factors	% of Responses
1. Incomplete Requirements	13.1%
2. Lack of User Involvement	12.4%
3. Lack of Resources	10.6%
4. Unrealistic Expectations	9.9%
5. Lack of Executive Support	9.3%
6. Changing Requirements & Specifications	8.7%
7. Lack of Planning	8.1%
8. Didn't Need It Any Longer	7.5%
9. Lack of IT Management	6.2%
10. Technology Illiteracy	4.3%
Other	9.9%

The 1994 CHAOS report tables above (Tables 2.5, 2.6 and 2.7) are still valid and compelling in this analysis in conjunction with the 2008 CHAOS report. The success, challenging and failure factors are still the same, though the 2008 CHAOS report consolidates some of the concepts and talks to the ten laws of CHAOS which provides guidance and direction on how to maintain the success factors, mitigate the challenging factors and avoid the failure factors which has not been provided in past reports.

Table 2.8 below illustrates the 2008 CHAOS success factors in conjunction with the ten laws of CHAOS with a brief explanation on what each law focuses on.

Table 2.8: The 2008 project success factors and the 10 laws of CHAOS (The Standish Group International, 2008)

CHAOS success factors	THE 10 LAWS OF CHAOS
	1. LAW OF THE TWO FACES
USER INVOLVEMENT	This supports the first CHAOS success factor, user involvement. Project managers need to cultivate an ecosystem for users and user groups which enables them to explain the business process in detail to the organization, and those users should be trained to follow project management protocols.
	2. CHEETAH'S LAW
EXECUTIVE MANAGEMENT SUPPORT	Cheetah's Law states that swift decisions are typically better than long, drawn-out analysis. This law supports the second CHAOS success factor of Executive Support. Projects that have an active and responsive executive sponsor fare better than those left to hang alone without a champion. The greater the understanding of the overall business goals the executive brings and effectively communicates to the project team, the greater the probability of success.
	3. LAW OF THE ROADS
CLEAR BUSINESS OBJECTIVES	The Law of the Roads states that it does not matter which road everyone comes from as long as they end up in the same place. Clarity and focus are essential to a successful project. This third CHAOS law supports the success factor of Clear statement of business requirements.
	4. LAW OF THE LONG-TAILED MONSTER
AGILE OPTIMISATION	The Law of the Long-Tailed Monster states you will always build too much of what you don't need and not enough of what you do need. The ecosystem needs to know how to minimize scope to facilitate optimization and the merits of stepping-stones. The ecosystem should consider the dangers of milestones alone as a measurement of progress. Time is the enemy of all projects, and time stretches can be never-ending, so if you can box them in you can achieve success.

EMOTIONAL MATURITY	**5. LAW OF THE FIVE DEADLY SINS** The Law of the Five Deadly sins states you will encounter the Five Deadly Sins in all projects. the first of the five deadly sins is **over ambition**, which is a strong desire to execute a significant project to gain fame, fortune, or power through the impact of overreaching goals. The second sin is **arrogance**, the unwarranted, overbearing pride evidenced by a superior manner toward superiors, peers, and inferiors. The third sin is **ignorance**, the condition of being unaware, uninformed, uneducated, and/or unsuspecting about the project and stakeholder goals, directions, details, issues, and opportunities. This condition is often coupled with apathy. The fourth deadly sin is **abstinence**, which is the act or practice of refraining from participation in and contribution to the project. The last and fifth deadly sin is **fraudulence**, which is an action intended to deceive; it is deliberate trickery intended to gain an advantage or to avoid confrontation.
PROJECT MANAGEMENT EXPERTISE	**6. LAW OF THE MAD HATTER** The Law of the Mad Hatter states that complexity causes confusion and cost. The sixth law of CHAOS is supported by the Project Management Expertise success factor. Project management leadership begins with the project management fundamentals. Project managers need to keep track of all the project management details and basic project management skills as expressed in the Project Management Institute's (PMI) education. Beyond that, project managers need to display leadership qualities and maintain connections as an important part of managing the project to a successful conclusion.
FINANCIAL MANAGEMENT	**7. PANDA'S LAW** Inaction is the purest form of failure. The seventh law of CHAOS supports the Financial Management success factor. Taking a risk and gain approach to financially managing requirements puts everything in a different context. It creates healthier communication with the users and the stakeholders. Healthy communication is the cornerstone to project success and a vibrant ecosystem teeming with successful projects. It is not whether a feature is wanted, but rather, what benefit that feature brings to the organization. If you concentrate on the truly required features, the velocity of success and increased return on investment will follow.
SKILLED RESOURCES	**8. LAW OF THE EMPTY CHAIR** The Law of the Empty Chair states that your best person will leave at the worst possible time. The eighth law of CHAOS supports the Skilled Resources success factor. There are no projects without people. Projects are made up of people. There are no issues except people issues. People are the heart and soul of the ecosystem. The quality of the outcome depends directly on the quality of the staff involved in the project. Project managers need to take a hard look at competency and the considerations required for evaluating the competency of your staff and the team. Project managers need to consider the placement of workers in the jobs that will benefit the project.
FORMAL METHODOLOGY	**9. LAW OF THE TUXEDO** It is the ability to create and maintain the right balance of formality while not impeding progress. It is the ability to maintain visibility through the project management ecosystem – without making visibility and reporting the goal. The end results should always be the same as the goal. It also takes skill to control and maintain sanity amidst turmoil. The Law of the Tuxedo states: Make everything as informal as possible, but not too informal. The ninth law of CHAOS supports the Formal Methodology success factor.
TOOLS & INFRASTRUCTURE	**10. LAW OF THE FOOLS** It is not just having the right tools, but the skill to use them that makes all the difference in success and failure. Tools, infrastructure, and vendors make up a big part of the project management ecosystem. The Tools and Infrastructure success factor is supported by the 10th law of CHAOS. In general, tools that can shorten a project and help project teams focus on the important items go a long way toward helping to achieve success. Having a toolkit with requirements, change, and collaboration management should help you along the way. Using open source objects and other methods to shortcut development is another way to increase success rates.

Another valid literature is Jiang's list of the thirteen success factors of projects.

The outcome of the literature study done by Jiang adds to the list of success factors derived from the CHAOS report. Jiang produced a condensed list of thirteen ranked factors that can contribute to the success of projects (Jiang, James Gary & Joseph, 1996).

Table 2.9 below illustrates Jiang's list of the thirteen success factors of projects in ranked order (as depicted by Frese ***et al.***, 2003).

Table 2.9: Jiang's list of success factors (Frese *et al.*, 2003)

List of success factors in ranking	Description
1. Clearly defined goals	The general mission of the project, as well as commitment to those goals on the part of the team members.
2. Competent project manager	The importance of initial selection of a skilled competent project leader.
3. Top Management Support	Top management support for the project that has been communicated to all the concerned stakeholders.
4. Competent project team members	The importance of selecting resources required with the right skills and expertise required to manage the project successfully.
5. Sufficient resource allocation	Budget/funding, people, logistical layout, etc.
6. Adequate communication channel	Sufficient information being readily available on the projects objectives, status, changes, organizational coordination and clients requirements to all stakeholders.
7. Control Mechanisms	Governance, methodologies (e.g. PMBOK, PRINCE2) and the right tools and techniques.
8. Feedback capabilities	All stakeholders concerned with the project able to review project status, make suggestions, and corrections through formal feedback channels or review meetings.
9. Responsiveness to client	All potential users of the project are consulted with and kept up to date on project status. Further, clients receive assistance after the project has been successfully implemented.
10. Client consultation	The project team members share solicited input from all potential clients of the project. The project team members understand the needs of those who will use the output.
11. Technical tasks	The technology that is being implemented works well and effectively.
12. Client Acceptance	Adequate advanced preparation has been done to best determine how to manage the project to meet the customers/owners needs.
13. Trouble-shooting	Project team members spend a meaningful percentage of their time looking for risks/issues. Project team members are encouraged to take quick action to mitigate problems out of their own initiative.

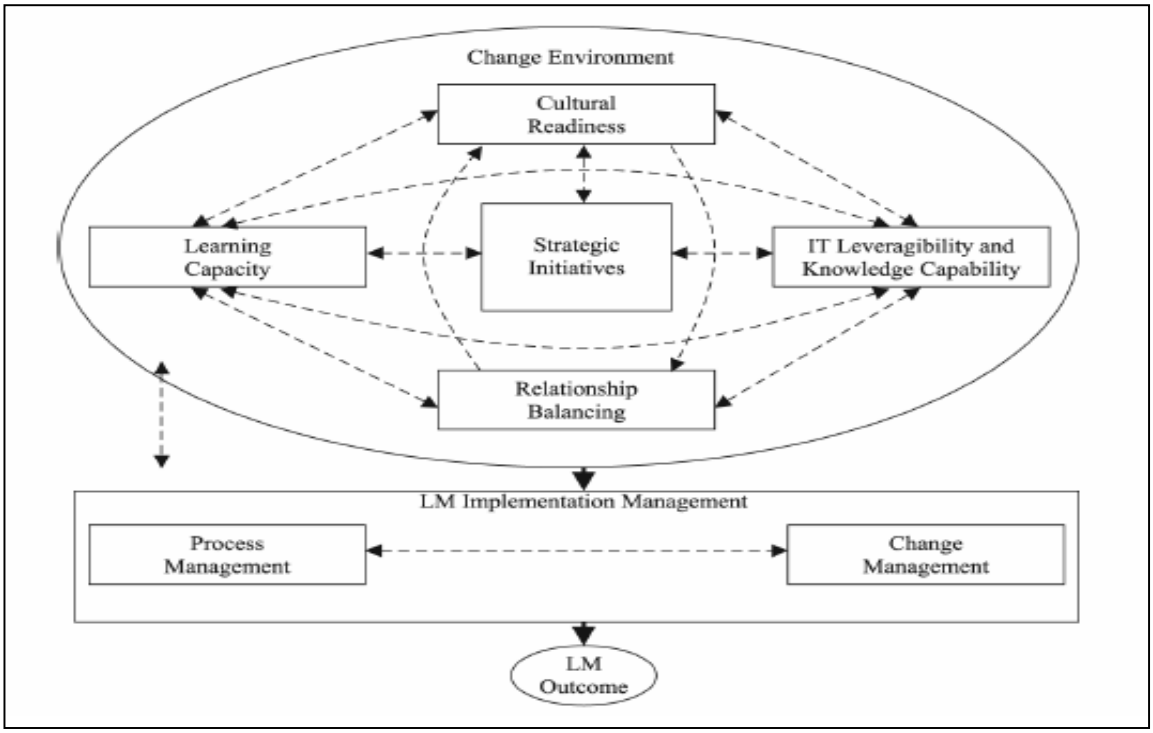
There are numerous aspects that lead to the success of a project and many may lead to failure. Jiang's list of thirteen and those pointers listed in the CHAOS report may be used as a starting point for planned projects. However, these lists alone are not a guaranteed recipe for success. Good project management is a process of continuous improvement. It is a process of making mistakes and learning from those faults. It is a process of continuous study and learning. For those who cannot devote themselves to this never-ending process, there will be few successes (Frese ***et al.***, 2003).

2.7 Lean projects

Process improvements, together with project management practices, contribute to better business processes and an improved working environment for employees, both of which result in driving tangible outcomes towards customer satisfaction (Motwani, 2003).

Motwani (2003) presents a lean implementation framework that is divided into seven constructs, as depicted in Figure 2.5 below:

Figure 2.5: Theoretical framework for lean manufacturing implementation (Motwani, 2003)



1) Strategic initiatives

This is where the journey to implement process change begins. This is normally triggered by a need or a proactive drive by an organisation to meet a specific objective. This change is normally incremental in nature and is based on learning through small gains versus radical approaches.

2) Learning capacity

Efficiency and the drive for constant improvements can come from the “learning from doing” approach and accumulation of knowledge through cross-functional interfaces. The ultimate objective of learning is to derive positive outcomes

through effective adaptation to environmental changes, and to improve because of this new knowledge.

3) Cultural readiness

This facilitates the incorporation of individual and organisational learning by influencing the organisation's ability to learn, share information to make formal decisions. Executive support is a crucial prerequisite to drive the process of change and to create cultural readiness.

4) Information Technology and leveragability and knowledge sharing capability

The role of IT in business process change drives should be a supporting function to the process instead of the dominating factor. To ensure the initiative does not become an IT-driven project, cross-functional teams can be created to create synergy between business, IT and human dimensions.

5) Network of relationships

Co-operative, interpersonal and synergised group behaviour can lead to a successful outcome. Continuous co-operation can instil change more effectively.

6) Change management practice

The purpose of change management is to drive the forces of a change required over the forces of resistance from those who oppose the change. Resistance is

a natural reaction by those who feel threatened by the change. The pattern of change, senior management's readiness for the change, the scope of the change at hand and the actual physical management of the change are all key components of successful change management.

7) Process management practice

Process management practice aims at optimising the current business processes that are in place. Successful approaches have set key performance indicators in place to define, design and track the new processes and the implementation of projects.

The explanation of the seven steps commenced by Hines ***et al.*** (2004) concludes that the major difficulties companies experience when implementing lean are a lack of direction, a lack of planning and a lack of adequate project management. Knowledge of particular tools and techniques is often not a problem and does achieve short-term success in terms of the physical implementation of the project; however, what is required to sustain the practices for the full potential realisation of benefits from lean is normally not addressed in conventional project management methodologies.

Pay (2008), as stated earlier in the present report, reveals the following attributes as the main reasons why the implementation of lean projects fail:

- Lack of commitment and support from senior management.

- Lack of focus on creating a culture change that is required for success.
- Lack of the right resources and skills.
- Lean not being part of the business strategy.

It is recommended by Pay (2008) that to bring about successful change in a business, leaders must: analyse their business and operations strategy against the goals of the process improvement initiative; confirm that senior management's commitment and support to the programme is in place; determine the company's readiness to change its corporate culture towards process improvements; and decide if the right people are in the right positions to successfully implement lean across the organisation.

2.8 Conclusion

The South African financial sector can benefit as the manufacturing sector has in more efficiently facing their current challenges by adapting lean manufacturing and driving value through to their customers via their products and services.

Although extensive studies have been done on the various process improvement methods and on lean manufacturing specifically, minimal research has been done to determine the success factors of implementing lean manufacturing in the banking sector.

While several reports, journals and articles cited in the literature review state some of the success factors of project implementation in general project management environments, no published material could be found that holistically identifies or addresses these success factors specifically for lean manufacturing projects in the banking sector in South Africa. Therefore, the present research intends to address that gap.

CHAPTER 3: Research Questions

The literature in Chapter 2 builds a strong case for the fact that lean manufacturing, although intended for the manufacturing sector, can add tremendous value to the South African financial sector. If managed and executed effectively, lean manufacturing can assist banks in operating more efficiently. This will add to their earnings, help retain their existing customers, increase market share and drive competitive practices.

The research being conducted aims to bridge the gap between lean manufacturing principles and the use of project management tools and techniques to be effective in implementing the required change.

Hyvari (2006) states that project management effectiveness refers to the success of the overall project. Using Pay's (2008) core success criteria from a lean application perspective; the principles of Jiang, Gary & Joseph (1996); and The Standish Group International (2008) and Motwani's (2003) lean manufacturing implementation model, the following questions will be addressed:

Research Question 1: Are the success factors for the implementation of projects relevant to the success factors for the implementation of lean projects?

Research Question 2: Can lean manufacturing be implemented effectively in a Financial Institution in South Africa?

Research Question 3: Is there a relationship between the success or failure of lean projects and the involvement and commitment of executives?

Research Question 4: Is there a relationship between the success or failure of lean projects and the culture readiness of the organisation?

Research Question 5: What are the critical success factors for lean projects to be implemented successfully?

CHAPTER 4: Research Methodology

4.1 Introduction

This chapter of the report covers the methodology that was used to conduct the research and address the research problem. This research study aimed at analysing through mainly quantitative methods the success factors for the implement of lean projects within a bank in South Africa.

There are six sections to this chapter. These are: the research method (4.2), population identification (4.3), sampling approach (4.4), data collection (4.5), data analysis (4.6) and research limitations identified (4.7). Each will deal in turn with a brief explanation of the overall research theory being presented and the reason for the selection of the particular approach.

4.2 Research method

The research challenge was formulated based on a widespread literature review that was conducted. The literature review further supported the process in preparing the research questions and providing structure and content to the questionnaire used to collect the data. The questionnaire was used in one-to-one interviews (in person) with 20 individuals who were part of the lean programme that was being implemented at the bank selected for the analysis.

A quantitative approach was used to present and analyse the close-ended questions while a qualitative approach was used to analyse the open-ended questions. The data is presented in Chapter 5.

This research aimed to explore the underlying approach of the implementation of the lean projects within the bank selected for the analysis, and to determine where they benchmarked against the categorised list of success factors from Pay's work (2008), the literature of Jiang, Gary, & Joseph (1996), and The Standish Group International (2008) and Motwani's (2003) model for lean manufacturing implementation.

The unit of analysis was one single organisation where lean projects were being implemented. The review and examination of the value streams had either been completed or were in the process of being implemented at the bank selected. The reason for these set criteria was to gain complete data and full understanding of a particular value stream. The lean projects should have at least completed the following stages in order to be in scope of the research:

- Pre-mobilisation / mobilisation stage.
- Assess stage.
- Preparation and planning stage.

The rationale behind choosing only one bank in South Africa was to maintain a consistent analysis: all the value streams within the analysis had to come from one consistent approach to implementing lean manufacturing, methodology, governance structure and other organisational factors.

The study conducted took a qualitative (exploratory) approach to the research analysis. Tobin (2006) states that exploratory research is part of empirical data, which is defined as "***data based on observation or experience***."

A content analysis was performed to understand what had been said about this subject, what conclusions had been derived and why. Tobin (2006) states that ***"[o]ne of the first considerations to be faced is the pre-existing body of knowledge that exists in a particular field. This should be used as a source of reference for research previously conducted in the chosen field of enquiry, as well as a source of the body of theory which pertains to the selected subject area."***

The research analysed past academic journals, business journals, published articles and internet sources in order to build on the framework of the research in Chapter 2. As Zikmund (2003) states, basic theoretical research is rarely conducted without extensive reviews of the literature on similar research.

A vast amount of documentation (monthly/weekly reporting documentation, project documentation, business case and value stream assessment material) was

provided by the bank selected for the analysis. This documentation provided the theoretical background and defined the approach the bank took in its implementation programme. This will be elaborated further on in Chapter 6.

The investigation itself was exploratory in nature, involving extensive document research to authenticate the development of key concepts. Thereafter, semi-structured interviews were conducted with the sample outlined below as outlined by Wellman and Kruger (2001) to collect data to answer the research questions stated in Chapter 3 of this report. Conducting qualitative research with key individuals who took part in the implementation of the lean projects within the bank selected for the analysis addressed the research questions proposed in this document. This is substantiated by Saunders, Lewis and Thornhill (2003).

The questionnaire that was utilised in the semi-structured interviews was developed using both open-ended and close-ended questions. This presented some structure during the interviews by gaining insights and uncovering new issues through in-depth discussions, as stated by Jankowitz (2000), while simultaneously gaining input on areas highlighted by the literature review with close-ended questions. The questionnaire has been attached as an appendix item (Appendix A) for reference purposes.

4.3 Population

The population consisted of the following:

- One financial institution in South Africa.
- The bank selected for the analysis was implementing 27 lean projects at the time of the analysis (within three waves).
- Out of the 27 lean projects, five were discontinued.
- Out of the 27 lean projects, only 18 fit the criteria mentioned above (either within test cell, implementation or completed – see appendix G).
- There were in total 43 Value Stream Managers developed through the programme.
- An external consultancy firm had been contracted to implement the lean approach across 17 business units.
- There were three individuals from the LDO (Lean Deployment Office) who managed the overall lean programme from a department known as Group Change.

All of the above stated criteria formed part of the population and were utilised when the research extracted its sample and was further assessed through the use of semi-structured interviews. Details of the projects have been attached as an appendix item (Appendix B) for reference purposes.

4.4 Sampling

Non-probability purposive sampling was utilised when the research was conducted. Wellman ***et al.*** (2001) state that non-probability sampling is used when the probability exists that certain members of the population may have no chance of being included in the sample. Since the purpose of this study was to obtain feedback from the individuals who were involved in the value streams, this sampling technique was appropriate. Table 4.1 below shows the spread of the sample that was utilised in data gathering and analysis.

Table 4.1: Details of the sample utilised by the research

Title	Number within the sample
Value Stream Managers (Project Managers)	14
Consultant firm resources (Lean Coaches)	3
LDO (Lean Deployment Office, programme resources)	3
Number of value streams (lean projects) in the sample	12
Percentage of value streams in the sample (exlcuding the four that were discontinued)	52%

Respondents were ensured that their input would be confidential and that their responses would be consolidated with those of the rest of the individuals in the sample. Projects that were part of the sample have been highlighted in Appendix C for reference purposes.

4.5 Data collection

Data was collected by conducting one-on-one semi-structured interviews with 20 individuals who took part in the implementation of lean within the bank selected for the analysis. Semi-structured interviews are useful in extracting additional information for which there is no particular question in the collection instrument (Wellman and Kruger, 2001).

Each respondent was contacted and informed of the research being conducted and how they could add value through their contribution, thereby securing an interview. All interviews conducted were 60 minutes in duration, and the participants were asked verbally to answer 34 questions and 26 sub-questions that were consolidated into nine sections. Their responses to the close-ended questions were captured into the set collection instrument (questionnaire provided in Appendix A) and their additional comments, which were triggered by the open-ended questions, were captured on a separate document by the researcher.

The questionnaire design was based on the literature sourced in Chapter 2 and the success factors assessed were primarily based on the literature of Pay (2008), the literature of Jiang, Gary, & Joseph (1996), Motwani (2003) and the work of The Standish Group International (2008).

4.6 Data analysis

Content analysis was used to extract themes from the above data types and to categorise the data into a format that can be used to derive a list of success factors.

Wellman ***et al.*** (2001) state that content analysis can be used to systematically analyse mass data and extract information through unstructured interviews in order to report in a quantitative and qualitative approach.

The data was captured by means of semi-structured interviews; content analysis was then used to extract themes; and the data was then categorised into a format that could be used to derive recommendations in a structured fashion.

4.7 Research limitations

Numerous limitations were identified during the duration of this research:

- The case analysis itself might be seen as too small to be regarded as representative of the financial sector, as the full analysis was based on one bank's experience with lean implementation and the sample was further restricted based on the set criteria above.
- The analysis may be perceived as subjective due to the researcher's involvement in the implementation of the lean programme within the bank selected for the analysis.

- The individuals who were interviewed knew the researcher from working together on the lean programme; a factor that could again be perceived as subjective in nature.

CHAPTER 5: Results

5.1 Introduction

This portion of the research presents the data that was collected by the researcher and further stipulates the process that was utilised to extract the data from the interviewees. The final results are also detailed herein.

The respondents were selected on the basis of their direct involvement in the implementation of the lean projects at the bank selected for the analysis. The instrument used in the data collection process was structured into nine sections:

- Section 1: INTERVIEWEE INFORMATION
- Section 2: GENERAL
- Section 3: MANAGEMENT'S INVOLVEMENT AND COMMITMENT
- Section 4: RESOURCES' SKILLS AND EXPERTISE
- Section 5: FINANCE
- Section 6: STRATEGY
- Section 7: CULTURAL READINESS
- Section 8: COMMUNICATION
- Section 9: RATING MATRIX

These sections used close-ended and open-ended questions designed to extract information to answer the five research questions outlined in Chapter 3.

5.2 Section 1: Interviewee information

This section of the questionnaire intended to capture the information relating to the participants themselves in terms of their expertise, positions on the projects and the value stream in scope of the analysis.

Table 5.1 below shows the number of people who were interviewed and their current positions on the lean programme at the bank. Value Stream Managers were Project Managers who managed a particular value stream. The Lean Coaches were provided by the external consultant (the external consultant promoted the concept of lean manufacturing to the bank) and mentored and supported the Value Stream Managers through the first three phases of the lean project stages (refer to Table 4.1 for details on the stages). The LDO resources managed the overall programme and ensured its success across the bank.

Table 5.1: Number of interviewees by position on the lean programme

Position	Number interviewed
Value Stream Manager (Project manager)	14
Lean Coaches (External consultants)	3
LDO (Lean deployment office - Programme resources)	3

The experience of the majority of the interviewees with lean manufacturing is limited as the lean programme only started at the selected bank in 2007. Table 5.2 below shows the years of exposure to the concept of lean manufacturing.

Table 5.2: Years of exposure to lean manufacturing

(20 responses)	Less than one year	1 - 2 Year	3 - 4 years	5 - 6 years	More than 7 years
Years of exposure to the concept of lean manufacturing	2	15	1	1	1

Table 5.3 below shows the years of exposure the interviewees have had to project environments.

Table 5.3: Years of exposure to project environments

(20 responses)	1 - 3 years	4 - 6 years	7 - 10 years	More than 10 years
Years of exposure in project enviroments	6	1	4	9

Table 5.4 below lists the initiatives that the respondents were working on at the time of the research.

Table 5.4: List of initiatives that were in scope of the analysis

Value stream Name
Affordable home loans
AVAF commercial origination
Customer service enquiry
TACC AVAF
TACC home loans
TACC micro loans
Credit card fraud
Customer service - Debit order switching
Acquisition - core products
Lean workplace
Commercial property finance
Home mortgage protection
The lean programme

5.3 Section 2: General

This section of the questionnaire intended to capture the respondents' views and experiences on projects in general, as well as those views relevant to the lean project that they were involved in.

Table 5.5 below shows the responses from the interviewees when asked the question ***"In your view, what are the five most important factors that determine the success of a project?".*** Since this was an open-ended question, their responses have been categorised (with reference to the literature). Table 5.5 below displays the data in a ranked order fashion from highest to lowest.

Table 5.5: List of categorised factors that determine the success of a general project

Factors that determine the success of a general project	Frequency = 100 (20 responses x 5 choices of factors)
Executives support	13
Skills and expertise of project resources	13
Having a clear vision of the projects objectives	9
Proper planning before implementation	9
On-going communication	8
Sufficient allocation of resources	7
Effective implementation	6
Benefits tracking	5
Project governance	5
A feedback mechanism to management	4
Competent value stream manager	3

Motivation and energy of the project team	3
Change Management required	2
Environmental readiness for change	2
Project Management skills	2
Realistic expectations	2
Support and buy-in from staff	2
Competent staff	1
Incentives for success	1
No answer	1
Right stakeholders involved	1
Risk management	1

Table 5.6 below shows the responses from the interviewees when asked the question, ***"In your view, what are the five elements that differentiate a lean project from a general project?"***. Their responses have been categorised (with reference to the literature). Table 5.6 below displays the data in a ranked order fashion from highest to lowest.

Table 5.6: List of factors that differentiate lean projects from general projects

Factors that differentiate lean projects from general projects	Frequency = 100 (20 responses x 5 choices of factors)
The lean manufacturing thinking and principles	12
Quick and effective in showing results	10
Involves people from all levels and those part of the process	9
Learning from doing	8
Stakeholder engagement approach	7
The test cell approach	7
Process focused	6
No answer	6
Light governance	5
Customer focused	4
The dumbeat approach (Continuous movement)	4

Continuous improvements	3
Empowers staff	3
The emphasis on the respect for people	3
Breaks down silo workings between business units	2
The Lean Coach role	2
Reflection capability	2
More active participation from management	1
I.T light approach	1
Productivity level is higher and more consistent	1
Benefits measurement approach	1
Ideally Low budget required	1
Risk/issue management is more effective	1
Requires innovative thinking	1

Table 5.7 below shows the responses from the interviewees when they were asked whether they feel the value stream they were involved in was a success or not.

Table 5.7: Overall success of the value stream

(20 responses)	Yes	No
Would you consider the value stream you were involved in a success?	16	4

From the above question posed, a further question followed: ***"If the value stream you were involved in was a success or failure, which of the following factors (provided by the questionnaire) best would describe why?"*** Each participant could only choose one.

Table 5.8 below illustrates the results in a ranked order fashion from the 16 of the 20 participants who said their value stream had been a success.

Table 5.8: Reasons for value stream success

Reasons why (If yes)	Frequency of response (Total:16)
Skills and expertise of resources	6
Managements involvement and commitment	4
Part of the businesses strategy	3
Effective communication	2
Culture readiness	1
Budget available	0

Table 5.9 below illustrates the results in a ranked order fashion from the four of the 20 participants who said that their value stream had not been a success.

Table 5.9: Reasons for value stream failure

Reasons why (If no)	Frequency of response (Total:4)
Lack in managements involvement and commitment	2
Not forming part of the businesses strategy	1
lack of culture readiness	1
Lack in skills and expertise of resources	0
Lack in budget	0
Lack in communication	0

Table 5.10 below illustrates the results from the interviewees when they were asked whether they think lean is a sustainable practice in the business unit in which the lean project was implemented in.

Table 5.10: Lean as a sustainable practice in their business unit

(20 responses)	Yes	No
Is lean a sustainable practice in your business unit?	17	3

From the above question posed, a further question followed asking the reason for their answer.

Table 5.11 below illustrates the responses of 17 of the 20 participants that explained why they feel that lean is a sustainable practice in their business unit and three of the 20 participants that explained why they feel that lean is a not a sustainable practice in their business unit.

Table 5.11: Reasons for lean as a sustainable practice in their business unit

Reason: Yes	Reason: No
Easy to sustain, requires minimal finance. All that is required it "faith & leadership & vision". Leadership is required to take it forward	Because the area in which we operate (Group Strategy) is more of a consulting service, rather than an operational area
Because its build on principles and tools that are relevant to the businesses goals	its not currently embedded in the culture, it seen as just another project, it needs to be embedded in the people to be sustainable
Because there is governance in place that will enforce it further	Management and execs. Have missed out on the principles of respect and involvement of people
Because of the potential benefits it brings to the table	
Its not 'rocket science' to implement and it's a process towards improvements.	
Benefits have been seen by the business, its visible what people can do with lean	
It has successfully shown its value proposition	
Benefits have been visible and achieved, it now features high on the business strategy	
Visible benefits to implementing lean	
Lean is an on-going change approach, towards continuous improvements	
Benefits are visible and measurement upfront, the stakeholder involvement approach	
Yes but business must make it a priority and run with it	
Staff are now empowered and have seen the benefits	
Because it has become a way of life, the way we just do things	
Clear cut problems and be identified and mitigated easily with lean	
Top leadership believes in it an those on the ground, everybody buys into it	
on-going improvement approach is adopted, although it needs management commitment to sustain	

5.4 Section 3: Management's involvement and commitment

This section of the questionnaire intended to capture the participants' views and experiences with regard to managers' buy-in and commitment to the value streams that they were involved in.

Table 5.12 below illustrates the participants' responses when they were prompted to rate on a scale of 1 to 5 (1 = Very little involvement; 2 = Little involvement; 3 = Average participation; 4 = High level of involvement; 5 = Very high level of involvement) their opinions in terms of management's involvement in the value stream. The following data in Table 5.12 has been rank ordered according to the '5 = Very high level of involvement' column.

Table 5.12: Management's level of involvement and commitment in the value streams

(20 responses)	1 = Very little involvement	2 = Little involvement	3 = Average participation	4 = High level of involvement	5 = Very high level of involvement
Attended the minimal lean training workshops	3	5	3	7	2
Attended at least one of the assess phase workshops	2	1	6	9	2
Attended set meetings when required	0	4	5	9	2
Creates sense of urgency and drive	1	6	7	5	1
Ensures commitment; deals with resistance; deals with issues	2	6	9	2	1
Spend a meaningful percentage of his/her time directly involved with the project	2	8	6	4	0
Has shown through their actions that the value stream was of high priority	1	7	6	6	0

Table 5.13 below illustrates the participants' responses when they were asked to rate on a scale of 1 to 5 (1 = Very little involvement; 2 = Little involvement; 3 = Average participation; 4 = High level of involvement; 5 = Very high level of involvement) their opinions in terms of management's overall level of commitment to their value stream.

Table 5.13: Management's overall level of commitment to value streams

(20 responses)	1 = Very little involvement	2 = Little involvement	3 = Average participation	4 = High level of involvement	5 = Very high level of involvement
Managements overall level of commitment to the value streams (project)	0	4	10	6	0

5.5 Section 4: Resources' skills and expertise

This section of the questionnaire planned to capture the participants' views and experiences with regard the skills and expertise of the resources that were allocated to the value stream.

Table 5.14 below illustrates the participants' responses when they were prompted to rate on a scale of 1 to 5 (1 = Very little skills and expertise; 2 = Little skills and expertise; 3 = Average skills and expertise; 4 = High level of skills and expertise; 5 = Very high level of skills and expertise) their opinions in terms of skills and expertise of the resources allocated to the value stream. The following data in Table 5.14 has been rank ordered according to the '5 = Very high level of skills and expertise' column.

Table 5.14: Skills and expertise of resources in the value stream

(20 responses)	1 = Very little skills and expertise	2 = Little skills and expertise	3 = Average skills and expertise	4 = High level of skills and expertise	5 = Very high level of skills and expertise
The value stream managers level of stakeholder management skills	2	6	3	8	1
The resources level of business analysis skills	2	8	4	5	1
The resources allocated to the value stream	0	2	8	10	0
The value stream managers level of project management skills	3	5	7	5	0
The resources level of strategic skills	4	7	9	0	0
The resources level of lean skills	3	6	8	3	0

Table 5.15 below illustrates the results from the interviewees when they were asked whether the resources that were allocated to the value stream were involved from the beginning to the end of the project (or, if the project is still running, are still currently involved).

Table 5.15: Allocated resources' end-to-end involvement in the value stream

(20 responses)	YES	NO
Where the resources allocated involved from the beginning to the end of the value stream?	8	12

Table 5.16 below illustrates the results from the interviewees when they were asked whether, in their opinion, the business allocated the best resources to the value stream.

Table 5.16: Resources allocated to the value stream

(20 responses)	YES	NO
Did business allocate the best of their resources?	10	10

Table 5.17 below illustrates the data from the interviewees when they were asked to rate on a scale of 1 to 5 (1 = Very insufficient; 2 = Insufficient; 3 = Average; 4 = Sufficient; 5 = Very sufficient) whether they felt that the lean training provided by the Lean Deployment Office was enough for the resources to implement their lean project effectively.

Table 5.17: Lean training for resources

(20 responses)	1 = Very insufficient	2 = insufficient	3 = Average	4 = sufficient	5 = Very sufficient
On a scale of 1-5 was the lean training (provided by the programme) enough for the resources to implement the lean project effectively?	2	5	3	9	1

5.6 Section 5: Finance

This section of the questionnaire planned to capture the participants' views and experiences with regard to the budgets allocated, the financial support and the business units' financial planning required to implement their value stream and the lean approach in general.

The respondents were asked four questions that related to the financial landscape of the project and were prompted to answer either yes or no. Table 5.18 below illustrates the responses to these questions.

Table 5.18: The business's financial commitment to the value stream and lean

(19 responses)	YES	NO	N/A
Business has allocated and planned budget for lean for the year	2	16	1
Business was able to allocate all the needed budget for this particular value stream	6	9	4
Business has committed financial benefits (if any) to MTP/STP	8	7	4
Business plans to allocate more budget to lean in the long run (2-3 years)	8	9	2

The one "not applicable" result for the first question was due to the respondent not knowing whether the business had allocated or planned budget for the year. This particular respondent was one of the outsourced Lean Coaches and had limited

access to the business units' preparations as their direct involvement was with the LDO and not business operations (other than the value stream in scope).

The four "not applicable" results for the second question posed were the result of two factors:

- Factor one – Two of the four interviewees stated that they did not require any budget to effect the change they set out to achieve, as it required changes to the way people managed the as-is process.
- Factor two – Two of the four interviewees stated that they did not require any budget as they had the operational budget (existing funds available) to effect the changes required.

The four "not applicable" results for the third question were due to the value streams reporting that their initiatives have no tangible (financial) benefits; their future state changes were bringing intangible benefit value to the business units where the change was being implemented.

The two "not applicable" results for the fourth question were due to the respondents not knowing whether the business had allocated or planned budget for the year. These two particular respondents were outsourced Lean Coaches and had limited access to the business units' planning for future initiatives.

5.7 Section 6: Strategy

This section of the questionnaire planned to capture the participants' views and experiences with regard to the strategic intent that the business had in utilising the lean approach.

Table 5.19 below illustrates the results from the interviewees when they were asked whether they think lean is part of the business units' strategy.

Table 5.19: Lean as part of the business units' strategy

(20 responses)	YES	NO
Is the lean concept part of the business units strategy?	13	7

Table 5.20 below illustrates the results from the interviewees when they were asked whether they think the business has the appetite to work toward process improvements.

Table 5.20: The business units' appetite for process improvements

(20 responses)	YES	NO
Does the business unit have an appetite to work toward process improvements?	17	3

Table 5.21 below illustrates the results from the interviewees when they were asked what the business's strategic intent was in utilising the lean approach. They had three options to choose from (Increase revenue, Reduce costs and Enhance improvements). The respondents were informed that they could choose one, two or all three of the options, as the business might have had more than one intent in adopting the lean approach.

Table 5.21: The business's strategic intent for the adoption of lean

(20 responses)	Enhance improvements	Increase in revenue	Reduce costs
what strategic intent did business have in utilising lean	17	15	13

5.8 Section 7: Cultural readiness

This section of the questionnaire planned to capture the participants' views about the importance of developing a culture that works towards continuous improvements through the adoption of lean, and to ascertain what the business did to work towards this.

Table 5.22 below illustrates the results from the interviewees when they were asked to rate on a scale of 1 to 5 (1 = Very little action; 2 = Little action; 3 = Average; 4 = High level of action; 5 = Very high level of action) how they felt in terms of the business's effectiveness in building and sustaining a lean culture. The

following data has been rank ordered according to the '5 = Very high level of action' column.

Table 5.22: The business's effectiveness in building a lean culture

(20 responses)	1 = Very little action	2 = Little action	3 = Average	4 = High level of action	5 = Very high level of action
Business has developed an environment that allows for employees to challenge "the way we do things"	3	4	7	4	2
The project has placed time and effort on ways to develop and sustain a lean culture.	1	7	6	5	1
The project has allocated funding to deliverables required for developing and sustaining a lean culture	5	6	6	2	1
The business sees the benefits to creating an enabling environment which allows employees to work towards constant improvements.	1	3	8	7	1
The project has adapted the lean workplace approach and has placed time and effort in visual management techniques.	5	1	4	9	1

Table 5.23 below illustrates the results from the interviewees when they were asked their opinion on which of the following is more important: Having a culture that supports lean before implementation, or developing a culture that supports lean during the implementation process.

Table 5.23: Culture that supports lean upfront vs. the development of a culture through execution

(20 responses - One or the other)	
Developing a culture that supports lean during the implementation process	11
Having a culture that supports lean before implementation	9

Table 5.24 below illustrates the results from the respondents when they were asked their viewpoint on which of the following is more important: Having a workforce that supports the lean philosophy, or having a competent project team that effectively implements lean projects.

Table 5.24: Workforce that supports the lean philosophy vs. an effective implementation capability

(20 responses - One or the other)	
Having a workforce that supports the lean philosophy	10
Having a competent project team that effectively implements lean projects	10

5.9 Section 8: Communication

This section of the questionnaire planned to capture the participants' views about the project's effectiveness in communicating the objectives and benefits of lean to its stakeholders and staff.

Table 5.25 below illustrates the outcome from the interviewees when they were asked to rate on a scale of 1 to 5 (1 = Very little action; 2 = Little action; 3 = Average; 4 = High level of action; 5 = Very high level of action) how they felt in terms of the project's effectiveness in communicating the objectives and benefits of lean. The following data in Table 5.25 has been rank ordered according to the '5 = Very high level of action' column.

Table 5.25: Value streams' communication efforts and effectiveness

(20 responses)	1 = Very little action	2 = Little action	3 = Average	4 = High level of action	5 = Very high level of action	N/A
The project had a communications plan	1	2	7	8	2	0
The project had set deliverables in place for communicating to the business unit	0	3	9	7	1	0
Most staff members understood what lean is all about and where the business was planning to go	3	3	7	6	0	1
All stakeholders were communicated effectively on the projects scope and objectives on a constant basis	1	4	5	10	0	0

The one "not applicable" result for the third question was due to the respondent not being able to confirm this question as his direct involvement was purely on a project management basis, running the value stream itself. He never had access to the rest of the business unit and therefore could not provide his view on the staff's understanding on where the business was planning to go with lean.

5.10 Section 9: Rating matrix

This section of the questionnaire planned to encapsulate the participants' views and opinions on what the factors for the successful implementation of a lean project are, benchmarked against the success factors of projects and lean projects from the literature analysed in Chapter 2.

Table 5.26 below illustrates the outcome from the interviewees when they were asked to rate (L = Minimal priority; M = Medium priority; H = High priority; C = Critical) 29 factors in terms of their priority and importance for the successful implementation of a lean project. The data in Table 5.26 is in ranking order according to the 'critical' factors column.

Table 5.26: Priority and importance for successful implementation of lean

	Minimal priority	Medium priority	High priority	Critical	N/A
Executives support	0	0	2	18	0
Competent value stream manager	0	0	9	11	0
Project management skills	0	1	9	10	0
Support and buy-in from staff	0	1	10	9	0
Common understanding of direction	0	3	9	8	0
Being part of the business strategy	2	4	7	7	0
Sufficient allocation of resources	0	1	12	7	0
On-going communication	0	0	13	7	0
Project governance	1	4	8	6	1
Proper planning before implementation	1	1	12	6	0
Adequate communication channels	0	3	11	6	0
A feedback mechanism to management	0	3	12	5	0
Training of lean principles to staff (in the process)	1	4	10	5	0
A enabling environment for lean	0	9	7	4	0
Ability to mitigate risks and issues (troubleshooting)	0	2	14	4	0
I.T capability	5	9	2	4	0
Motivation and energy of the project team	0	1	15	4	0
Having a clear vision of the projects objectives	0	3	14	3	0
Prioritisation and selection of value streams	0	1	16	3	0
Skills and expertise of project resources	0	2	15	3	0
Consistent focus on process improvement	1	3	12	3	1
Quick responsiveness to stakeholders queries	0	6	11	3	0
Realistic expectations	1	6	10	3	0
Incentives for success	5	9	4	2	0
Competent staff	0	3	15	2	0
A culture working towards constant improvements	0	4	14	2	0
Technical skills	3	11	5	1	0
Minimised scope	3	7	9	1	0
Hard working focused staff	1	9	10	0	0

Table 5.27 below illustrates the outcome from the interviewees when they were asked to list in order of importance their top five most important factors (from the 29 factors provided in the previous question) that will determine the successful implementation of a lean project. The data in Table 5.27 is in ranking order according to the 'Rated number one' factors column.

Table 5.27: Five most important success factors (in order of importance) for the successful implementation of a lean project

	Rated number one	Rated number two	Rated number three	Rated number four	Rated number five
Executives support	14	3	1	0	0
Project management skills	3	1	1	1	0
Prioritisation and selection of value streams	1	0	0	0	1
Being part of the business strategy	1	1	0	1	1
Competent value stream manager	1	5	1	1	1
I.T capability	0	1	1	0	0
Skills and expertise of project resources	0	1	2	0	0
Project governance	0	0	1	2	2
Incentives for success	0	0	0	0	2
Training of lean principles to staff (in the process)	0	0	0	2	0
On-going communication	0	1	2	1	0
Common understanding of direction	0	0	2	2	1
Consistent focus on process improvement	0	0	1	1	0
Support and buy-in from staff	0	1	2	1	5
Motivation and energy of the project team	0	0	0	0	1
Proper planning before implementation	0	2	1	0	2
Realistic expectations	0	0	2	1	0
Having a clear vision of the projects objectives	0	1	1	0	0
Sufficient allocation of resources	0	1	0	1	1
Adequate communication channels	0	1	1	2	0
A enabling environment for lean	0	1	0	1	1
A culture working towards constant improvements	0	0	1	0	1
Quick responsiveness to stakeholders queries	0	0	0	1	1
Ability to mitigate risks and issues (troubleshooting)	0	0	0	2	0

Table 5.28 below lists in ranking order the amount of times they mentioned in the top five most important factors (from the 29 factors provided in the previous question) that will determine the successful implementation of a lean project.

Table 5.28: Success factors that were rated within the top five lists of success factors for the successful implementation of a lean project

	Within the top 5 list of success factors
Executives support	18
Competent value stream manager	9
Support and buy-in from staff	9
Project management skills	6
Project governance	5
Common understanding of direction	5
Proper planning before implementation	5
On-going communication	4
Adequate communication channels	4
Being part of the business strategy	4
Skills and expertise of project resources	3
Realistic expectations	3
Sufficient allocation of resources	3
A enabling environment for lean	3
Prioritisation and selection of value streams	2
I.T capability	2
Incentives for success	2
Training of lean principles to staff (in the process)	2
Consistent focus on process improvement	2
Having a clear vision of the projects objectives	2
A culture working towards constant improvements	2
Quick responsiveness to stakeholders queries	2
Ability to mitigate risks and issues (troubleshooting)	2
Motivation and energy of the project team	1

Table 5.29 below illustrates the outcome from the interviewees when they were asked an open-ended question. The question was posed and the respondent was prompted to finish the following sentence: “For any lean project to succeed, the one non-negotiable is…….”. The data in Table 5.29 has been rank ordered.

Table 5.29: Open-ended questions for non-negotiables for successful lean projects

	"For any lean project to succeed, the one non-negotiable is……."
Executives support	9
Commitment from stakeholders	4
A culture working towards constant improvements	2
Skills and expertise of project resources	1
Adopting the lean approach	1
Focus on customer	1
Competent team in place	1
Accountability and ownership from business	1

Table 5.30 below illustrates the outcome from the interviewees when they were asked the following open-ended question. The question was posed and the respondent was prompted to start the following sentence: "…….will cause a lean project to fail". The data in Table 5.30 has been rank ordered.

Table 5.30: Open-ended questions for what will cause a lean project to fail

	"…….will cause a lean project to fail"
Lack of executive support	6
Lack of buy-in from staff	4
Lack of common understanding of direction	4
Insufficient communication	2
Resistance to change from staff	1
Wrong management level of stakeholders	1
Lack of respect for people	1
Conflict with other business change priorities	1

All the results reported in Chapter 5 above are analysed and discussed in depth in

Chapter 6, where the results above are categorised by the research questions posed in Chapter 3 and are then addressed with reference to the literature in chapter 2.

CHAPTER 6: Discussion of Results

This chapter briefly summarises the profile of the interviewees and then analyses the data presented in Chapter 5 in conjunction with the literature reviewed in Chapter 2. The analysis is presented in the form of research questions, stated in Chapter 3.

6.1 Discussion of the interviewees' profiles

In the analysis of the data, aspects of the interviewees' profiles are pertinent to mention. Due to the nature of the research being a case study analysis on a particular financial institution, all interviewees that formed part of the sample (Table 5.1) were deliberately targeted as they were involved in the lean programme, which adds merit to the research. Furthermore the individuals that were selected cut across 17 different business units across the bank selected for the analysis (Table 4.1 and Table 5.4), forming 70 percent of the total population of business units. The sample of Value Stream Managers formed 33 percent of the total population of Value Stream Managers on the programme, and out of the eighteen projects that fit the criteria set in Chapter 4, 66 percent formed part of the sample, thereby adding further integrity to the research.

To add even further reliability to the sample and in order to weigh the extent of knowledge, interviewees were asked for the number of years of exposure they have had to project environments (Table 5.3). Forty-five percent of the

interviewees have more than 10 years' exposure and 65 percent have more than seven years' exposure to project environments.

Since the concept of lean manufacturing is fairly new to the banking sector (Lutz, 2008), it is worth noting that the exposure of the interviewees to the lean concept is fairly small. Seventy-five percent of the sample has only had one to two years of exposure to lean manufacturing (Table 5.2). Only two of the 20 interviewees had more than five years of exposure to lean manufacturing and those two individuals are from the external consultancy that was contracted by the bank selected for the analysis. Further integrity can be attributed to the fact that all interviewees that form part of the sample have been involved within their particular value stream since its inception. This brought much richness to the questions posed to the interviewees.

The first research question attempted to determine if lean manufacturing can be implemented successfully through project management practices. This research question is addressed below.

6.2 Research question 1

Determining whether the success factors for the implementation of projects are relevant to the success factors for the implementation of lean projects will further contribute to the research objective of understanding what the success factors are in implementing lean projects in financial institutions.

When respondents were asked which factors they think determine the success of a project (Table 5.5), their top five factors were:

Factors that determine the success of a project (Ranked in order of importance)	Frequency of responses
1.Executive support	13
2. Skills and expertise of project resources	13
3. Having a clear vision of the project objectives	9
4. Proper planning before implementation	9
5. On-going communication	8

The factors identified by the sample in Table 5.5 are supported by Pay (2008), Jiang's list of success factors (Frese ***et al.***, 2003) and by the latest CHAOS report's project success factors (The Standish Group International, 2008) on what the success factors are that will drive the successful implementation of lean projects.

Thirteen out of the 20 respondents said that executive support and skills and expertise of resources (Table 5.5) are the main factors at play in the successful implementation of general project management. This covers two of Pay's (2008) four reasons for why lean projects succeed or fail, namely management's involvement and commitment and the skills and expertise of resources.

Nine out of 20 respondents said that having a clear vision of the project's objectives is the number one success factor to the successful implementation of general project management. This, together with executive support and skills and expertise of resources (Table 5.5), is supported by four of the 10 Standish Group

(2008) CHAOS success factors: executive management support, clear business objectives, project management expertise and skilled resources. The above success factors (Table 5.5) are also supported by Jiang's list of success factors (Frese ***et al.***, 2003). All 13 factors of Jiang's list are represented.

The respondents were also asked what the one non-negotiable was for a lean project to succeed (Table 5.29); the top five factors were:

Non-negotiables for lean projects to succeed (Ranked in order of importance)	Frequency of responses
1. Executive support	9
2. Commitment from stakeholders	4
3. A culture working towards constant improvements	2
4. Skills and expertise of resources	1
5. Adopting the lean approach	1

The top five factors above (Table 5.29) from the respondents covers three of Pay's (2008) four reasons for why lean projects succeed or fail, namely management's involvement, commitment and skills and expertise of resources and culture readiness.

From the above analysis, 80 percent of what the respondents say will make lean projects succeed (Tables 5.5, 5.27, 5.28 and 5.29) directly applies to the success factors of general projects stated in the literature of Pay (2008), The Standish Group (2008) and Jiang's list of success factors (Frese ***et al.***, 2003).

To understand the differences between general project management and the management of lean projects, respondents were asked what differentiated lean projects from normal general projects (Table 5.6). The top five differences raised in order of importance are:

Differentiating factors of lean projects in relation to general projects (Ranked in order of importance)	Frequency of responses
1. The lean manufacturing thinking and principles	12
2. Lean is quick and effective in showing results	10
3. Lean involves all people from all levels and those that form part of the process	9
4. Lean drives implementation through the concept of 'learning from doing'	8
5. The stakeholder approach that lean implements	7

The lean manufacturing thinking and principles

Twelve out of the 20 respondents stated that the actual lean principles and approach to process optimisation and process improvements is different from the normal conventional project management methodologies. Lean is process-specific and focuses its efforts in the elimination of waste to drive value to the customer. This is consistent with Womack, Jones & Roos, (1990) and Seth ***et al.*** (2005). However, the respondents stated that when it comes to the physical implementation of the future state (the proposed to-be process), the momentum of the initiative declines after the assessment phase and therefore can be maintained and focused on its desired state through project management practices. Respondents also mentioned that with their value streams being within the project

environment, it has the right focus from the right stakeholders, which makes a big vast difference to its validity.

Lean is quick and effective in showing results

Ten out of the 20 respondents stated that lean is quick and effective in showing tangible results, as conventional projects, in their opinion, tend to be long and normally only show their value after the close of the project.

Six out of the 10 stated that the fact that their value streams showed immediate results resulted in the quick support and involvement from their senior management. All respondents mentioned how this also resulted in the buy-in of staff that was involved in the process that was being optimised, as it brought positive change to their daily workings.

Respondents ended by saying that the project management methodology currently being used at the bank selected for the analysis should be reviewed and put through the lean process in order to create “light-touch” governance to place more focus on delivery than on management assurance.

Lean involves all people from all levels and those that form part of the process

Nine out of the 20 respondents stated that lean involves the people “on the ground” whereas conventional projects mainly involved key stakeholders.

The respondents felt that projects in general at the selected bank normally only get communicated to the rest of the staff once within implementation phase, without the consultation or review of the staff involved in the day-to-day operation. The whole philosophy behind lean is to involve the staff and make them part of the change (Womack, Jones & Roos, 1990 and Seth ***et al.*** 2005).

However, one of the 10 laws of CHAOS supports the concept of user involvement, namely the Law of the Two Faces, which states that "Project managers need to cultivate an ecosystem for users and user groups which enables them to explain the business process in detail to the organization, and those users should be trained to follow project management protocols" (The Standish Group International, 2008).

Lean drives implementation through the concept of "learning from doing"

Eight out of the 20 respondents felt that lean's approach to implementation follows the "learning from doing" concept, which is supported by the lean manufacturing implementation framework shown in Figure 2.5, which states that "Efficiency and the drive for constant improvements can come from the learning from doing approach and accumulation of knowledge through cross-functional interfaces" Motwani (2003). The "learning from doing" approach is defined in one of the factors in Jiang's list of success factors (Frese ***et al.***, 2003).

The stakeholder engagement approach that lean implements

Seven out of the 20 respondents stated that the way stakeholders are engaged in the lean project is more effective and value-adding than the conventional stakeholder sessions they have attended in the past at the bank in scope.

The respondents mentioned that the stakeholders are much more active and value-adding to the project as they are “walked” through the process and its new optimised future state components to make them understand the change required and what benefit it will bring once implemented.

Even though there are slight variances between the implementation of lean projects and conventional project management, it can be concluded that the success factors for the implementation of general projects are relevant to the success factors for the implementation of lean projects.

6.3 Research question 2

Research question 2 sought to establish whether lean manufacturing can be implemented effectively in a financial institution in South Africa.

When the respondents were asked whether they believe that the value stream that they were involved in was a success, 80 percent of the respondents said yes (Table 5.7). This is supported by Lutz (2008) when he states that financial

institutions can increase their productivity significantly through the adoption of lean manufacturing.

The respondents were then asked, using Pay's four success factors for lean implementation (Pay 2008), what the number one reason for the success of their value stream was (Table 5.8). Six of the 16 respondents chose the "***skills and expertise of the resources***" factor, which was the highest-ranked factor. Validity could be questionable as all of the respondents were resources within their own value stream.

Of the four of the 20 respondents that stated their value stream was not a success, 50 percent said it was due to the lack of management's involvement and commitment (Table 5.9). This will be discussed further in section 6.4 of this chapter.

The respondents were also asked whether they feel that lean manufacturing could be sustainable practice in their business unit (Table 5.10). Eighty-five percent of the respondents said "yes", that they believe that lean could be a sustainable practice in their business units.

To further understand why lean would be a sustainable practice in their business unit, they were asked to elaborate further (Table 5.11). Two main themes stood out from the respondents' feedback:

- Leadership's commitment
- Visible benefits

Leadership's commitment

Respondents stated that if they have the support and buy-in from their leadership, then the rest would follow. If it is a priority for them, then the resources will be allocated accordingly. One respondent said "***High priority initiatives are executed with high priority***". That sentence summed up the fact that with leadership support and commitment, the rest will fall into place. This is supported by Pay (2008) when he states that "***A top-down approach and commitment to lean are essential to the success of the project***".

Visible benefits

Respondents stated that the business was supportive of lean from the get-go as it showed tangible visible benefits quickly. One respondent said "***people buy into an initiative when they are impacted by the change and they see it with their own eyes***". This is in line with the "learning from doing" concept, as the change is incremental in nature, as are the benefits being envisaged as the initiative moves forward. This is huge advantage for the lean approach as respondents stated that within the bank selected for the analysis, management will buy into anything that shows physical improvements. One respondent said "***Any approach that is able to talk the walk while running will win the race***".

Reports provided by the lean deployment office showed that out of the 27 lean projects, eight had committed to MTP. This totalled to R54.7 million. Eight respondents did mention though that the business hesitated to commit financial benefits to MTP due to the fact that the lean concept was sold to them incorrectly. Originally they were advised by the external consultant that through the adoption of lean they would see an average of R7 million in benefits in a timeline of eight weeks, which turned out to not be the case. This point relates to the importance of the third highest success factor required, as was depicted by the respondents (Table 5.5), namely having clear vision of the project's objectives.

Overall, from the findings of this research within the bank selected for the analysis and in conjunction with the literature review, it can be established that lean manufacturing can be implemented effectively within a financial institution in South Africa. This finding is supported by Lutz (2008).

6.4 Research question 3

This research question attempted to address whether there is a relationship between the success and failure of lean projects and the involvement and commitment of executives.

As mentioned in the previous question (Question 6.3), the respondents were asked whether they believe that the value stream that they were involved in was a

success. This particular section will look at the 20 percent of the respondents that said no to this question (Table 5.7).

From the four respondents that said no to their value stream being a success, 50 percent stated that the reason for the failure of their value stream was due to the lack of management's involvement and commitment (Table 5.9). Linked to this is when the respondents were asked if lean is sustainable in their business unit (Table 5.10); out of the "no" respondents, 33 percent said no because management missed out on the key principles of lean (Table 5.11).

The above results are consistent with Pay's (2008) core success criteria, the principles of Jiang, Gary & Joseph (1996), and The Standish Group International (2008) and Motwani's (2003) lean manufacturing implementation model.

To understand the role management played in more depth, the respondents were asked to rate on a scale of 1 to 5 (1 = Very little involvement; 2 = Little involvement; 3 = Average participation; 4 = High level of involvement; 5 = Very high level of involvement) their opinions in terms of management's involvement in the value stream (Table 5.12).

However, the results from the above question were random in nature and showed no pattern or trend in the analysis. The average ranged around "average participation". Linked to this was the next question posed to the respondents,

asking them what management's overall level of involvement and commitment was to the value stream, using the same rating scale as above (Table 5.13). Fifty percent said "average participation" and the other 50 percent were split between the "little involvement" and "high level of involvement", again representing no specific outcome.

To give additional reliability to the analysis and in order to further assess the effects of management's involvement and commitment to value streams, the results were broken down under the following aspects:

- The allocation of resources' skills and expertise
- The allocation of budget
- Forming part of the strategy
- Ongoing communication

The allocation of resources' skills and expertise

The purpose behind the first aspect is that management's commitment is visible by the allocation of resources they commit to a particular initiative. This is supported by Vavra (2008), Pay (2008) and The Standish Group International (2008).

The results from the questions posed to the respondents (Tables 5.14, 5.15 and 5.16) show no particular trend or visible distinction to state whether the allocation of resources was linked to the involvement and commitment from management. An example was when the respondents were asked whether they feel the business

allocated the best of their resources. The responses were split 50/50 between yes and no (Table 5.16).

Another concern with this particular aspect is that the respondents were the resources of these initiatives and therefore can be deemed to be biased in nature. However, the six out of the 10 respondents that said yes to the above question (Table 5.16) said that their value streams would have not been a success if it was not for management's active commitment to allocating resources when required.

The allocation of budget

The purpose behind the second aspect is that management's commitment is visible by the allocation of budget it makes to a particular initiative when required, as supported by Robertson and Williams (2006).

The respondents were asked to answer yes or no to four questions pertaining to the allocation of finance to their value stream (Table 5.18). The data is less in favour of management's commitment due to the respondents' answers. However, 15 of the 20 respondents did mention that management's belief was that the lean concept required little funding as most changes would be driven through the optimisation of the physical process itself and by the staff that are part of the process. All respondents also mentioned that it was sold to their management that the lean programme is adopting an IT-light approach. What was not anticipated is

that the majority of the changes suggested by the respondents required IT changes, which carries the highest cost.

Management at the bank selected for the analysis is still under the impression, however, that lean can bring quick-win results through smaller optimisations at no cost.

Forming part of the strategy

The purpose behind the third aspect is that management's commitment would be visible by their inclusion of lean within their business strategy. This is supported by Motwani (2006) when he states that strategy is where the journey to implement process change begins.

The respondents were asked whether the lean concept forms part of their business strategy (Table 5.19). Sixty-five percent said "yes", that it did form part of their strategic intent. To prompt further, a question was then asked whether the business has the appetite to work towards process improvements (Table 5.20). The respondents were consistent in their responses, with 85 percent of the respondents saying "yes".

To validate further, a third question was asked in order to understand the business's main intent to utilise lean within their business unit (Table 5.21). However, the responses were random in nature, though the highest-rated was for

the business to enhance improvements. One trend that was picked up from the interviews was that the value streams that had the executive support do tend to represent lean within their strategy for 2009.

Ongoing communication

The purpose behind the final aspect is that management's commitment would be visible through the efforts and actions to communicate the importance and agenda of lean manufacturing to the staff.

When respondents were asked about the business's ability to communicate the concept of lean to their staff (Table 5.25), the results were random in nature. No visible trend could be established between the business's communication efforts, as the view was split between effective and non-effective.

Respondents did, however, mention that much of the communication that did occur was from staff that was involved in the lean process when they derived the future states. This is a positive note for lean as this is a clear indication of the buy-in from staff into concept of lean.

Overall, from the findings of this research within the bank selected for the analysis and in conjunction with the literature review, there is a strong correlation between the performance of a value stream and the commitment and involvement from management. Out of all the success factors identified by the respondents,

executive support was depicted as the most important success factor for the successful implementation of a lean project (Tables 5.26, 5.27 and 5.28).

From a literature perspective, this is the most important factor in Pay's (2008) list of success factors; it is depicted as the number two success factor within the CHAOS report and has been for the last fourteen years (The Standish Group International, 1994 and The Standish Group International 2008); and it is the number three success factor in Jiang's list of the thirteen success factors of projects (Frese ***et al.***, 2003). However, the concept of executive support is not mentioned or depicted in Motwani's (2003) theoretical framework for lean manufacturing implementation.

6.5 Research question 4

This research question attempted to address whether there is a relationship between the success and failure of lean projects and the culture readiness of the organisation.

The literature states that in order for lean to be implemented effectively and sustained by the business after its inception, the organisation needs a culture to support and sustain the change. The business needs staff to have the right attitudes and behaviours to reinforce the continuation in continuous process improvement (James, 2006; Hines ***et al.***, 2004; Pay, 2008 and Motwani, 2003).

When respondents were asked questions regarding the project's effort toward developing and working towards a lean culture (Table 5.23), the majority of the results say minimal action was taken.

To further understand what the respondents' opinions were in the importance of developing a culture to support the concept of lean, two key questions were asked:

1) Which of the following is more important: Having a culture that supports lean before implementation, or developing a culture that supports lean during the implementation process? (Table 5.23).

2) Which of the following is more important: Having a workforce that supports the lean philosophy, or having a competent project team that effectively implements lean projects? (Table 5.24).

The results to both questions were both split between the respondents. The majority of the respondents stated that senior management was more focused on the financial benefits that the optimised process could bring and the improvements it could make to customer service than the idea behind the philosophy of lean. Minimal steps were taken to address the staff dynamics to complement the lean concept. The belief was that optimising the process would automatically improve the environment and working conditions of the staff. These views are apposed by the literature around the aspect of culture and its importance to the process (James, 2006; Hines ***et al.***, 2004; Pay, 2008 and Motwani, 2003). No trend or

indication was visible to show that culture was a priority; this is not in line with the literature's point of view.

Overall, the findings of this research within the bank selected for the analysis show that minimal effort was spent in building a culture to support and sustain lean. The bank selected for the analysis was more interested in the output of the specific value streams and how this could improve customer service. The literature points to the importance of an organisation building and cultivating a culture that supports the lean philosophy, for this is a critical component for its sustainability (James, 2006; Hines ***et al.***, 2004 and Motwani, 2003).

6.6 Research question 5

This research question attempted to confirm what the critical success factors are for lean projects to be implemented successfully. The literature points to the same type of success factors for the successful implementation of projects, depicted in Appendix D. This is also applicable to lean projects, as concluded in section 6.2 above.

The respondents from the bank were given all the success factors for projects based on the literature in Chapter 2 and were then asked to rate which of them was critical to the successful implementation of a lean project (Table 5.26). The top five were:

Top 5 critical success factors applicable to the success implementation of lean projects (in order of importance)	Frequency of responses
1. Executive support	18
2. Competent Value Stream Manager	11
3. Project management skills	10
4. Support and buy-in from staff	9
5. Common understanding of direction around what the project must achieve	8

Using the same factors from the literature (Table 5.26), the respondents were then asked to pick only their top five success factors out of the 29 for the successful implementation of a lean project and rank them from the most important down (Table 5.27). The top five that were rated as the number one factor were:

Top 5 choices from the respondents when asked to choose 5 from the 29 factors (in order of importance)	Frequency of responses
1. Executive support	14
2. Project management skills	3
3. Prioritisation and selection of value streams	1
4. Being part of the business strategy	1
5. Competent Value Stream Manager	1

To add further validity to the analysis, the respondents were asked to provide their own factors through a prompted open-ended question (Table 5.29). The top five factors that, in their opinion, rated as non-negotiables for a lean project to succeed, are supported by the literature depicted in Chapter 2. The overall analysis shows that the data supports the literature in Chapter 2.

To conclude, this research has provided the top five factors for successfully implement a lean project according to the literature (Appendix D) and according to respondents from the bank selected for the analysis. These success factors in order of importance are:

Top 5 factors to successfully implement a lean project (In order of importance)
1. Executive support
2. Skills and expertise of project resources
3. Clear shared understanding of the projects objectives
4. Buy-in from staff
5. A cultural readiness for the change required

These success factors will be further discussed in Chapter 7, along with recommendations and suggestions for further research to enrich the field.

CHAPTER 7: Conclusion

7.1 Introduction

Chapter 7 consolidates the key findings that were depicted in the data capture in Chapter 5 and in the assessment of the data in Chapter 6, offering recommendations for the bank selected for the analysis and suggesting future research.

The research was able to address the five questions posed from Chapter 3, based on the literature review in Chapter 2 and from the analysis done on the selected bank. The research intended to address the factors that will determine the successful implementation of lean projects within a financial institution in South Africa. Five key success factors were derived in Chapter 6 (as depicted in section 6.6). This chapter looks at these five factors in order of importance in more detail, providing recommendations to the bank selected for the analysis on how to effectively manage these factors.

7.2 Success factor 1: Executive support

Executive support is depicted as the number one success factor for the success implementation of lean projects. Executive support's role and responsibility is depicted in Appendix E. Through the analysis conducted, one trend that was distinct in the selected bank was that projects that had the visible support and involvement from their senior management had delivered better results and were

more effective than the ones that had lacked their management's involvement and commitment. The business areas that had commitment from their management also showed increased efforts in building a culture towards continuous process improvements.

Another visible trend in the selected bank was that in business units that had the visible support and involvement from their senior management, the staff members were more motivated and driven to the value stream and focused on the lean concept itself, looking for ways to further improve their areas of work.

Respondents felt that the individual senior members that did not support or fully commit to their value streams and to the lean agenda did not fully understand lean manufacturing and its core capability. Lean was perceived to these individuals as another method of optimising processes and operations. The concepts behind lean thinking that drive sustainability and the human aspect of lean are then not driven effectively.

One way the lean programme office at the bank selected for the analysis has dealt with knowledge transfer of lean is through a one-day workshop known as a Workshop 0. The objective of Workshop 0 sessions is for attendees to experience how value stream improvements work through a simulation concept that supports the "learning from doing" concept.

However, there has been minimal attendance from senior managers to these sessions. Workshop 0 is dominated by the staff members that are either part of the value stream or are being impacted by the proposed change.

Recommendations

In order for senior managers to be effective in their commitment to and support of lean initiatives, they need to fully understand the concept and dynamics behind lean manufacturing. It should be compulsory that all senior managers attend a Workshop 0 session to understand the core platform for lean manufacturing. To further drive the thinking and understanding of lean (since Workshop 0 only looks at the physical application of lean and not the people and culture aspect of lean), the recommendation to the bank would be to initiate a course through an external consultant that covers these areas.

Another imperative would be for the bank to set up a monthly lean working committee comprised of senior management. This way the individuals can enhance and drive collaboration between the different business units, enhance efforts to drive lean within the organisation and discuss successors, failures, challengers and current issues being experienced for mitigation purposes. This forum could also focus on how lean is being successfully executed externally across other organisations in different sectors and see how it can be adapted to work successfully in their context.

Lastly, senior management should get actively involved in bigger external lean forums. Annually there are lean conventions, summits, knowledge sharing sessions, organised activities and courses offered to drive lean excellence (for example, the African lean summit for 2008 was held in Cape Town on October this year).

7.3 Success factor 2: Skills and expertise of project resources

Skills and expertise of project resources is illustrated as the number two success factor for the success implementation of lean projects. The skills and expertise of resources refers to individuals that have been allocated to the physical implementation of a lean project who have the right skills and competencies to successfully and effectively drive the change required.

The results of the analysis around skills and expertise of resources were related to the allocation of resources from senior management and showed no common trend in terms of the effectiveness of the resources utilised by the bank. However, through the discussions with respondents three visible trends were depicted.

The first trend depicted was that value streams with Value Stream Managers that had a strong foundation, experience or skill in project management were more successful in their implementation and consistent maintenance in momentum of delivery than value streams who had Value Stream Managers (though

knowledgeable in the area in which they were effecting the change) that had limited skills or exposure to project environments.

A second trend depicted was that value streams that had a more effective Lean Coach that took an active role in driving the delivery (working closely with the Value Stream Manager to implement the required change) were more successful and effective in their delivery than value streams that had Lean Coaches who only participated in deriving of the future state.

The last trend visible was value streams that allocated their best resources were more effective in delivering the change required than the value streams that felt the resources allocated were not the best.

Recommendations

When allocating resources to run a lean project, there are three key roles that are required:

1. Value Stream Manager – This individual should be a change resource (in the bank selected for the analysis, there are change departments that have resources that manage projects on a daily basis, i.e. Project Managers) with the right project management skills, experience and competencies to effectively manage the project and its day-to-day activities.

2. Lean Coach – This individual needs to have skills and experience in process optimisation, lean or six sigma practices and assist the Value Stream Manager in deriving the best optimised solution.

3. Business Partner – This individual should be seconded from the area where the lean project is being implemented; someone who has the experience and expertise of the process being effected so that they can drive the change from a business perspective and drive the focus towards the customer. This individual works in conjunction with the Value Stream Manager and Lean Coach to ensure that the changes being made are in line with the business's imperative.

Another recommendation would be for the bank to create a formal position for the Lean Coach role that could drive the lean agenda and be involved in all lean projects within their particular business unit. Currently in the bank there is a role known as the Process Custodian, referring to someone who manages and supports the business in their process management. This role could be enhanced or restructured and made to provide the current individuals with the skills and competencies needed to manage lean effectively.

Last recommendation would be for the selected bank to have its centre of excellence for lean deployment (currently the centre of excellence for lean resides in a department called Group Change) to put in place a standard way of managing

and driving lean initiatives across the group so that this can be communicated to lean resources to ensure a standard way of lean management within the group.

7.4 Success factor 3: Clear shared understanding of project objectives

All parties involved in the project having a clear shared understanding of the projects objectives is illustrated as the third success factor for the success implementation of lean projects.

One consistent issue being experienced by the bank selected for the analysis was around the scope of the value streams. The respondents stated that when a value stream was being mobilised (beginning stage of the process), the process to define the scope clearly was inefficient as it was too broad and vague in its definition. One key reason for this is that in order for the deliverables and objectives to be clear for the lean project, the assessment phase needs to be commenced first, looking at the as-is process, applying the lean principles and then proposing future state components (FSCs) to effect the change required.

The assessment phase is commenced only after the mobilisation stage (refer to Appendix G to see the banks standard approach to implementing lean projects). However, the confusion lies around the future state components. Future state components are defined by the bank selected for the analysis as lean deliverables which are tracked and reported individually and which, in consolidation, form part

of the overall value stream. Typically, an FSC is defined by a team, a set of objectives, milestones, deliverables and benefits.

The confusion is around which FSCs are to be implemented first, the understanding from stakeholders regarding what each FSC plans to achieve, and what the dependencies are that lie between the FSCs. This confusion leads to poor decisions and resource allocation (people and finance) to FSC requirements, which impacts the overall success of the lean project.

An example from the respondents was when a FSC required IT changes, it was then deemed as last priority due to the funds required; yet in most cases the IT changes were required first in order for the rest of the FSCs to be implemented effectively.

Recommendations

To mitigate the FSC confusion issue, the recommendation is to manage the assessment phase of the approach (as depicted in Appendix G) rather as a confirmation phase and only initiate the actual project once the full FSC proposal has been derived and signed-off by key stakeholders (refer to Appendix F for further recommendations on how to apply the model).

To mitigate further once the FSCs have been clearly defined, it is recommended that they are prioritised in terms of order of importance from a delivery perspective,

what each FSC estimated cost is and what the minimal FSCs required for the change to be effective are. That way stakeholders can make a better informed decision.

7.5 Success factor 4: Buy-in from staff

Buy-in from staff is illustrated as the fourth most important success factor for the success implementation of lean projects. Buy-in from staff refers to ensuring that individual employees (that fall within the area where the change is being implemented) are receptive to the change, eliminating resistance and obtaining overall support and commitment to the change through their delivery and workings.

Three trends were visible under the aspect of buy-in from staff. One was that value streams that placed effort on the culture aspects of lean showed more successful results than value streams that placed minimal or no effort on developing a lean culture. This, however, will be unpacked further in section 7.6.

The second trend was that value streams that communicated on a consistent basis on the lean agenda in their business areas where the change was being implemented obtained better support and buy-in from their employees than the value streams that placed minimal emphasis on communicating to the wider staff complement.

The last trend depicted by the respondents related to inclusion. The value streams that included staff in the Workshop 0 sessions had more buy-in from staff than the value streams that did not utilise the Workshop 0 sessions for all their staff. In these sessions, individuals had gained the insight into what lean can do for them and the areas in which they work, making them more receptive and committed to the change being commenced in their areas.

Recommendations

Business areas that adopt the lean approach and plan to implement lean projects need to obtain buy-in from their staff in order to sustain the changes that happen. One way of achieving this is to send all staff on the Workshop 0 sessions so that they understand what lean is all about and how they can effectively participate in the change.

Secondly, the staff members need to be included in the assessment phase of the lean projects. Those that are part of the process being optimised will be more receptive to the projects goals and objectives if they are part of the solution derived to drive the change. This will ensure active participation and make them feel part of the change. Overall, this will ensure the sustainability of lean within the area they function in.

Lastly, constant communication to all staff needs to take place. This will create the perception of drive and urgency and that lean is a priority to the business. The

recommendation is for the project team to derive a communications plan on how they plan to communicate the lean drive within the area in scope, the media they will utilise to do so and the timelines depicted to drive consistent communication.

7.6 Success factor 5: A cultural readiness for the change required

A cultural readiness for the change required is illustrated as the fifth and last important success factor for the success implementation of lean projects. The aspects of culture are well defined by Pay (2008) and Motwani (2003) in the literature in Chapter 2.

The selected bank has, as shown through the results in Chapter 6, been successful in the implementation of lean projects, and believes that lean manufacturing has the ability to be sustainable across the rest of the group. However, some of the respondents feel that in order for the implemented changes to be sustainable, there needs to be a culture that supports the belief in continuous improvements.

Most respondents stated that minimal effort was placed on the business unit as a whole to develop a culture that would drive and support the lean agenda. The drive was project delivery based only and did not encompass support from the overall business drive to make lean a sustainable practice within the business area.

Lastly, most respondents feel that due to the current global financial crisis and current economic conditions in South Africa, there is extreme pressure on management to optimise its processes, cut costs and deliver on its targets. Lean was seen as solution to derive quick financial benefits (cost reduction and increase in revenue benefits), which shifts focus off the cultural aspect as this is cost-intensive and requires time as it is an ongoing process to transform a culture.

Recommendations

Business units can adopt the lean workplace concept which looks at developing an enabling environment for staff by eliminating physical waste around them, improving their working conditions and instilling a practice of visual management to share their successes and developments openly with one another.

Another recommendation would be more incentive schemes and practices to be adapted to reward those that do adopt and “live” the behaviours around constant improvements. This will show the visible commitment from management to the lean approach, driving others to follow in the steps of their rewarded colleagues.

Another recommendation is to ensure that senior management makes lean part of its overall business strategy, as this will place more focus on the long-term benefits of lean and drive the right behaviours towards lean implementation and decisions made from management and staff involved.

Lastly, business should place the practices of lean and its behaviours within the performance plans of staff members.

7.7 Future research ideas

Further research can be done to determine the validity of the findings in this research by replicating the same approach in another bank within South Africa or an international bank.

Research can also be done to determine the validity of the findings in this research by replicating the same approach in another services industry and see whether the same success factors apply.

A longitudinal study approach can be taken by conducting the same research on the same bank that was selected for the analysis in five years' time and then assessing the success of lean implementation and whether the same findings apply or if new findings arise.

Further emphasis can be placed on one of the success factors that have been derived from this research. For example, the issues and dynamics around culture specifically remain inconclusive. Although culture readiness has been identified as one of the top five factors of success for lean projects to be implemented successfully, uncertainty remains regarding the factors and steps required to create an effective workforce readily available for the execution of lean projects.

What are the factors to ensure that lean remains sustainable after the project has been implemented within a financial institution?

Further research can be conducted on the suggested lean implementation model derived from this research (in Appendix F) and whether it can be successfully implemented in the public sector.

Lastly, further research can be conducted on the suggested lean implementation model derived from this research (in Appendix F) and determine its authenticity either within the same bank where the analysis was conducted, within another financial institution or within another organisation in the services sector.

7.8 Conclusion

In conclusion, this research has highlighted the factors for the successful implementation of lean projects in the financial sector. Moreover, it has contributed to the knowledge base of lean manufacturing from an implementation perspective by integrating it with project management principles; reinforcing the literature and findings from the analysis as well as highlighting issues that are unique to the banking sector.

It is hoped that this research will add value to the bank that was selected for the analysis in their pursuit for customer service excellence, operation and process efficiency and quality management. In addition, it is hoped that this research will

add value to the knowledge base around lean manufacturing and the effectiveness of project management principles.

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Appendices

Appendix A: Research questionnaire

RESEARCH INTERVIEW SCHEDULE

Date of interview:_____

FACTORS OF SUCCESS FOR THE EFFECTIVE IMPLEMENTATION OF LEAN MANUFACTURING PROJECTS WITHIN THE BANKING SECTOR IN SOUTH AFRICA

SECTION 1: INTERVIEWEE INFORMATION

1. Name: _____
2. Years/months of exposure in project environments:_____
3. Years/months of exposure to the concept of lean manufacturing:_____
4. Role in the lean project:_____
5. Value stream name:_____

SECTION 2: GENERAL

5. In your view, what are the 5 most important factors that determine the success of a project?

a._____
b._____
c._____
d._____
e._____

6. In your view what are the 5 elements that differentiate a lean project from a general project?

a._____
b._____
c._____
d._____
e._____

7. Would you consider the value stream you were involved in a success? Yes / No

8. If yes, which one of the following would best describe why?

a. Managements involvement and commitment
b. Skills and expertise of resources
c. Budget available
d. Part of the businesses strategy
e. Culture readiness
f. Effective communication

9. If no, Which one of the following would best describe why?

a. Lack in managements involvement and commitment
b. Lack in skills and expertise of resources
c. Lack in budget
d. Not forming part of the businesses strategy
e. lack of culture readiness
f. Lack in communication

10. In your view, is lean a sustainable practice in your business unit? Yes / No

11. Why?_____

SECTION 3: MANAGEMENTS INVOLVEMENT AND COMMITMENT

12. On a scale of 1-5 rate the following in terms of managements involvement in the value stream:

1 = Very little involvement; 2 = Little involvement; 3 = Average participation 4 = High level of involvement; 5 = Very high level of involvement;

a. Attended the minimal lean training workshops ___
b. Attended at least one of the assess phase workshops ___
c. Spend a meaningful percentage of his/her time directly involved with the project ___
d. Creates sense of urgency and drive ___
e. Ensures commitment; deals with resistance; deals with issues ___
f. Has shown through their actions that the value stream was of high priority ___
g. Attended set meetings when required ___

13. On a scale of 1-5 how would you rate managements overall level of commitment to the value stream? ___

1 = Very little Commitment; 2 = Commitment; 3 = Average Commitment 4 = High level of Commitment; 5 = Very high level of Commitment;

SECTION 4: RESOURCES SKILLS AND EXPERTISE

14. On a scale of 1-5 rate the following in terms of resources skills and expertise in the value stream:

1 = Very little skills and expertise; 2 = Little skills and expertise; 3 = Average skills and expertise; 4 = High level of skills and expertise; 5 = Very high level of skills and expertise;

a. The resources allocated to the value stream ___
b. The value stream managers level of project management skills ___
c. The value stream managers level of stakeholder management skills ___
d. The resources level of business analysis skills ___
e. The resources level of strategic skills ___
f. The resources level of lean skills ___

15. Where the resources allocated involved from the beginning to the end of the value stream or if still running currently involved? Yes / No

16. In your view, did business allocate the best of their resources? Yes / No

17. On a scale of 1-5 was the lean training (provided by the programme) enough for the resources to implement the lean project effectively? ___

1 = Very insufficient; 2 = insufficient; 3 = Average; 4 = sufficient; 5 = Very sufficient;

SECTION 5: FINANCE

18. Answer the following questions with yes or no in terms of finances role in the value stream:

a. Business has allocated and planned budget for lean for the year ___
b. Business was able to allocate all the needed budget for this particular value stream ___
c. Business has committed financial benefits (if any) to MTP/STP ___
d. Business plans to allocate more budget to lean in the long run (2-3 years) ___

SECTION 6: STRATEGY

19. Is the lean concept part of the business units strategy? Yes / No

20. In your view, what strategic intent did business have in utilising lean (choose which one/s is applicable)?

Increase in revenue | Reduce costs | Enhance improvements

21. Does the business unit have an appetite to work toward process improvements?

Yes / No

SECTION 7: CULTURE READINESS

22. What in your view is more important:

	Tick
Having a culture that supports lean before implementation	
Developing a culture that supports lean during the implementation process	

23. On a scale of 1-5 rate the following in terms of the business effectiveness to build and sustain a lean culture:

1 = Very little action; 2 = Little action; 3 = Average; 4 = High level of action; 5 = Very high level of action;

a. Business has developed an environment that allows for employees to challenge "the way we do things". ___
b. The project has placed time and effort on ways to develop and sustain a lean culture. ___
c. The project has allocated funding to deliverables required for developing and sustaining a lean culture. ___
d. The business sees the benefits to creating an enabling environment which allows employees to work towards constant improvements. ___
e. The project has adapted the lean workplace approach and has placed time and effort in visual management techniques. ___

24. What in your view should come first in terms of business priority:

	Tick
Having a workforce that supports the lean philosophy	
Having a competent project team that effectively implements lean projects	

SECTION 8: COMMUNICATION

25. On a scale of 1-5 rate the following in terms of the projects effectiveness to communicate the objectives and benefits of lean manufacturing:

1 = Very little action; 2 = Little action; 3 = Average; 4 = High level of action; 5 = Very high level of action;

a. The project had a communications plan ___
b. The project had set deliverables in place for communicating to the business unit ___
c. Most staff members understood what lean is all about and where the business was planning to go ___
d. All stakeholders were communicated effectively on the projects scope and objectives on a constant basis ___

SECTION 9: RATING MATRIX

26. Rate the following factors in terms of their priority and importance to the successful implementation of a lean project:

L = Minimal priority; M = Medium priority; H = High priority; C = Critical

	L	M	H	C
a. Project Management skills				
b. Prioritisation and selection of value streams				
c. I.T capability				
d. Skills and expertise of project resources				
e. Project governance				
f. Incentives for success				
g. Training of lean principles to staff (in the process)				
h. On-going communication				
i. Common understanding of direction				
j. Consistent focus on process improvement				
k. Support and buy-in from staff				
l. Motivation and energy of the project team				
m. Being part of the business strategy				
n. Executives support				
o. Proper planning before implementation				
p. Realistic expectations				
q. Competent staff				
r. Having a clear vision of the projects objectives				
s. Hard working focused staff				
t. Competent value stream manager				
u. Sufficient allocation of resources				
v. Adequate communication channels				
w. A feedback mechanism to management				
x. Technical skills				
y. Minimised scope				
z. A enabling environment for lean				
aa. A culture working towards constant improvements				
ab. Quick responsiveness to stakeholders queries				
ac. Ability to mitigate risks and issues (troubleshooting)				

27. In your view, what are the 5 most important factors (using the exercise above) that determines the success of a lean project (in order of importance from most important to least)?

a._____
b._____
c._____
d._____
e._____

28. How would you finish the following sentence?:
" For any lean project to succeed, the one non-negotiable is....."

29. How would you start the following sentence?:
".....will cause a lean project to fail".

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Signature of participant:

Appendix B: List of projects being implemented at the bank selected for the analysis

VS No:	VS Title	Current Phase
WAVE 1		
VS001	Credit Card Opening	Complete
VS002	Affordable Home Loans	Implementation
VS003	AVAF Commercial Origination	Test Cell
VS004	Recruitment	Implementation
VS005	Customer Service Enquiry	Complete
WAVE 2		
VS006	TACC AVAF	Complete
VS007	TACC Home Loans	Implementation
VS008	TACC Micro Loans	Implementation
VS009	Credit Card Fraud	Complete
VS010	Customer Service - Dr Order Switching	Implementation
VS011	Technology Service Request (416)	Test Cell
VS012	Cash Management	Preparation & Planning
VS013	Private One Account Origination	Implementation
VS014	Acquisition - Core Products	Implementation
VS015	Lean Workplace	Complete
VS016	Commercial Property Finance	Test Cell
WAVE 3		
VS017	Home Mortgage Protection	Complete
VS018	AVAF - TFS Origination	Preparation & Planning
VS019	Procure to Pay	Preparation & Planning
VS020	Customer Service Complaints	Test Cell
VS021	TACC Unsecured Lending	Assess Phase
VS022	Business Bank	Discontinued
VS023	Lean Workplace II	Discontinued
VS024	Home Loans - Valuations	Preparation & Planning
VS025	Small Business - Short Term Facilities	Implementation
VS026	Compliance Operations	Discontinued
VS027	International Mortgages	Discontinued

Appendix C: List of projects in scope of the sample

VS No:	VS Title	Current Phase
WAVE 1		
VS001	Credit Card Opening	Complete
VS002	**Affordable Home Loans**	**Implementation**
VS003	**AVAF Commercial Origination**	**Test Cell**
VS004	Recruitment	Implementation
VS005	**Customer Service Enquiry**	**Complete**
WAVE 2		
VS006	**TACC AVAF**	**Complete**
VS007	**TACC Home Loans**	**Implementation**
VS008	**TACC Micro Loans**	**Implementation**
VS009	**Credit Card Fraud**	**Complete**
VS010	**Customer Service - Dr Order Switching**	**Implementation**
VS011	Technology Service Request (416)	Test Cell
VS012	Cash Management	Preparation & Planning
VS013	Private One Account Origination	Implementation
VS014	**Acquisition - Core Products**	**Implementation**
VS015	**Lean Workplace**	**Complete**
VS016	**Commercial Property Finance**	**Test Cell**
WAVE 3		
VS017	**Home Mortgage Protection**	**Complete**
VS018	AVAF - TFS Origination	Preparation & Planning
VS019	Procure to Pay	Preparation & Planning
VS020	Customer Service Complaints	Test Cell
VS021	TACC Unsecured Lending	Assess Phase
VS022	Business Bank	Discontinued
VS023	Lean Workplace II	Discontinued
VS024	Home Loans - Valuations	Preparation & Planning
VS025	Small Business - Short Term Facilities	Implementation
VS026	Compliance Operations	Discontinued
VS027	International Mortgages	Discontinued

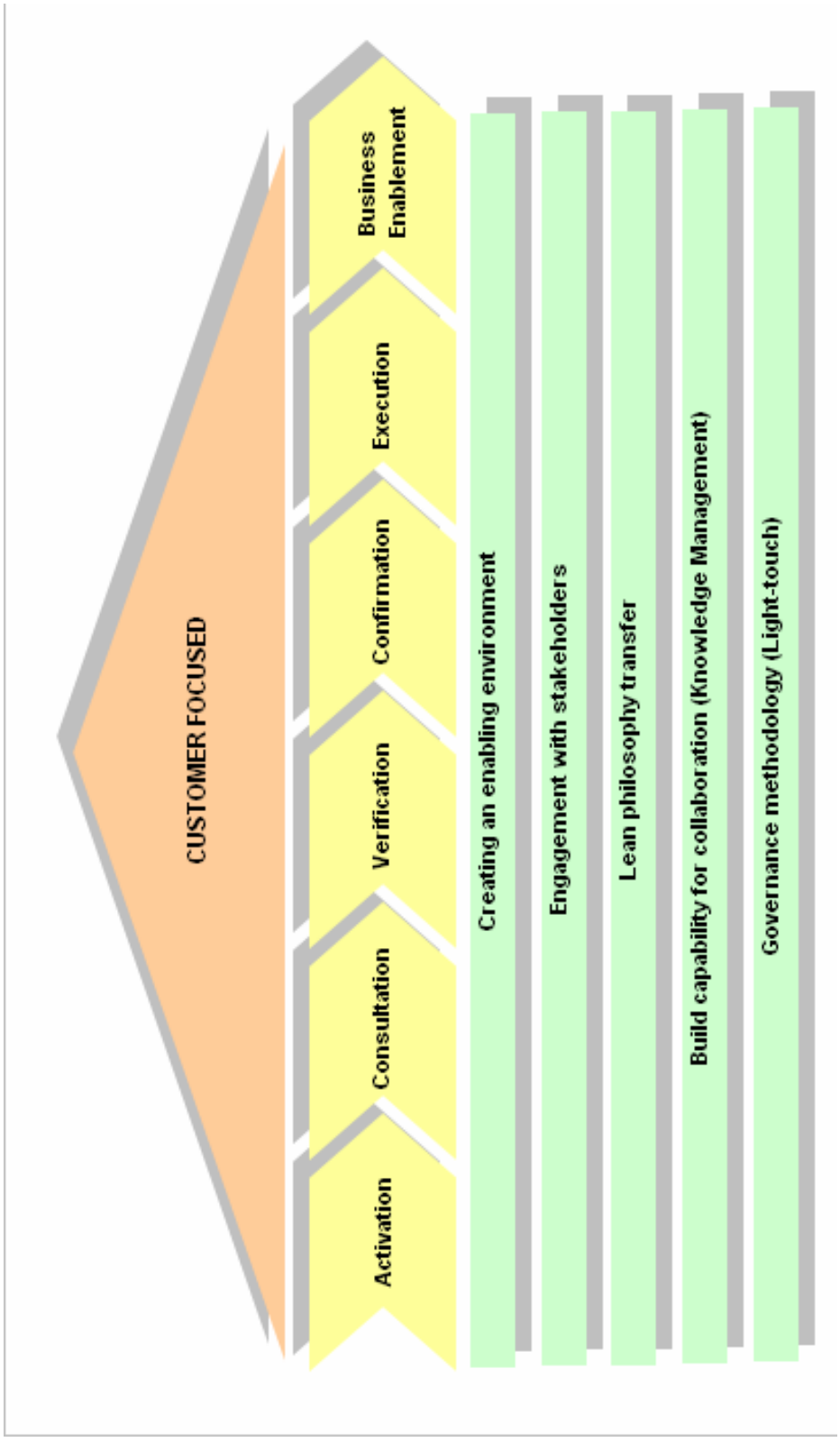
Appendix D: Comparison of success factors for the successful implementation of lean projects across the literature

(Frese et al., 2003)	(The Standish Group International 2008)	(Motwani, 2003)	(Pay, 2008)
Clearly defined goals	User involvement	Strategic initiatives	Management's involvement and commitment
Competent project manager	executive management support	Learning capacity	Skills and expertise of resources
Top Management Support	Clear business objectives	Cultural readiness	being part of the business strategy.
Competent project team members	Agile optimisation	Information Technology and leveragability	Culture readiness
Sufficient resource allocation	Emotional maturity	Network of relationships	
Adequate communication channels	Project management expertise	Change management practice	
Control Mechanisms	Financial management	Process management practice	
Feedback capabilities	Skilled resources		
Responsiveness to client	Formal methodology		
Client consultation	Tools & infrastructure		
Technical tasks			
Client Acceptance			
Trouble-shooting			

Appendix E: Characteristics and responsibilities of senior management when running an initiative as depicted by the bank selected for the analysis

Characteristic	What they need to do …
Power. The authority to legitimise the change within the organisation	Ensure that the necessary resources can be acquired and deployed
A sense of urgency. A compelling business need to drive the change	Actively and effectively address any obstacles that get in the way
A vision. A clear, compelling description of the desired end state	Create an active dialogue about the desired state with all stakeholders
A public- and private communication role. Communicating and reinforcing the change	Communicating in public, and in one-on-ones with key individuals—to discuss the need for change and reinforcing the role that each individual must play
Leverage. Utilisation of consequences (both rewards and punishments) to reinforce the new, desired behaviors	Rewarding and punishing individuals and constituencies for behavior / activity that is consistent or inconsistent with the desired state

Appendix F: High level lean implementation model (first draft)



Stages of the Lean implementation model	Stage objective	Required Input	Desired output	Key features
Activation	To understand from senior management the requirements and rationale behind the need for the change and what the next steps are to commence further.	Input from senior management, commence discussions to understand the need for the change	A project concept document outlining the key objectives they hope to achieve through the project	* Set meetings with senior Management; * Allocation of a sponsor to drive the change;
Consultation	To investigate the current state of the process they wish to address, understand the dynamics, scope and requirements to make the change.	Input from employees that work with the process, understand the dependencies, points of entry and delivery of the current process.	A full depicted process map of the current state depicting its actual flow with reference to key KPI's.	* Walk the process; * Interview individuals that manage the process; * Map out the KPI's.
Verification	To apply the lean principles, eliminate the waste that exists within the current process and map out a desired state.	Input from the employees that work with the process to understand what would improve the process and their current conditions.	A full depicted process map of the suggested future state depicting its actual flow with reference to key KPI's.	* Application of lean; * Map out the future state; * Facilitation of the process (Lean Coach);
Confirmation	To practicalise the future state into workable components whereby business can plan and allocate resources accordingly.	A session is required with key stakeholders to understand the dynamics around implementing the overall future state.	A list of future state components prioritised and depicting the resources required per FSC.	* List of FSC's; * FSC's prioritised; * Resource requirements analysis;
Execution	To physically test and implement the FSC's with adherence to governance and project management practices and principles.	Resources to effect the change in place, briefed and managing the change. Set structured meetings to engage with each other and key stakeholders.	Day-to-day execution of the projects, consistent input from stakeholders, reporting on progress.	* Formal projects in place; * Set structure and governance framework in place; * Allocated resources in place;
Business enablement	To finalise the end of the projects delivery, handover to business so that the changes made become part of business as usual.	Closure of the activities that have been delivered from a project perspective, support and guidance from the team to the business being effected from the change.	Business to confirm their satisfaction that the project has come to a close and that the business will handle the management of the changes onwards.	* All agreed objectives delivered and in place; * Business sign-off for the closure of the project; * BAU handover document with guidelines and recommendations;
In conjunction with the implementation of projects, the aspects below should be run in parallel to compliment the change and to ensure buy-in and sustainability of the change.				
Creating an enabling environment	Effort should be place in assessing the current working conditions, physical layout, look and feel of the area that the employees work in that form part of the process that is being impacted by the change.			
Engagement with stakeholders	The Value Stream Manager needs to engage with identified stakeholders on a consistent basis to ensure the change is following in the right direction and that buy-in is maintained.			
Lean philosophy transfer	Workshops, courses, training material and road shows on lean manufacturing should be commenced with all employees in the area being effected by the change in order to ensure there is congruency in the understanding of the lean approach and to drive for the behaviours that lean strives towards.			
Build capability for collaboration (Knowledge Management)	Further emphasis should be placed on creating a centralised body of individuals that engage the wider organisation to share success and learning's and determine how they can consistently improve lean implementation efforts with reference and engagements to external bodies and forums.			
Governance methodology (Light-touch)	Governance is crucial to sustain the momentum of delivery and minimise project failures but should be 'light-touch' in its approach, policies and procedures in order to ensure effective, speedy delivery whilst driving the right practices, procedures and adherence to set norms.			

Appendix G: Lean implementation approach utilised by the bank selected for the analysis