THE USE OF LEAN TOOLS TO INCREASE PRODUCTIVITY AND IMPROVE EFFICIENCY IN PORT ELIZABETH ENFORCEMENT AUDIT

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Submitted in partial fulfillment of the requirements for the degree of

Masters in Business Administration

at the

Nelson Mandela Metropolitan University Business School

November 2011

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ABSTRACT

Lean philosophy is based on the continuous quest to improve the organisation’s processes by creating a culture and operating principles which eliminate all non-value adding activities within organisation’s processes. Manufacturing firms consider the adoption of the Lean tools as basic requirements for achieving World Class operational excellence or Best Practice. For some time, lean has been used by the manufacturing organizations. Most organizations understand that lean will help them survive global competition and stay in business.

The objective of this study is to investigate how lean manufacturing tools can be used to improve efficiency and enhance the embedding of a continuous improvement culture in the South African Revenue Service Enforcement Audit Port Elizabeth.

The activities that took place in Enforcement Audit Port Elizabeth from September 2010 until 31 October 2011 were observed. During the study, an introductory presentation by the researcher was made to Regional Enforcement Management and staff in general, the presentation was to introduce the study highlighting different Lean tools. Thereafter the Port Elizabeth audit staff members were engaged formally, using surveys to assess their underlying mindset and behaviour as well as informally, using unstructured interviews to solicit more information on activities taking place and the reasoning behind certain actions. The results of the survey and observations are analysed and interpreted.
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DECLARATION:
In accordance with Rule G4.6.3, I hereby declare that the above-mentioned treatise/dissertation is my own work and that it has not previously been submitted for assessment to another University or for another qualification.

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ACKNOWLEDGEMENTS

I would like to extend my sincere gratitude to the following:

- My Supervisor, Prof Koot Pieterse, for his guidance, patience and input during this study;

- SARS Audit Management for the financial support and PE audit staff for your willingness to participate in this study. I’m truly grateful to you all; and

- Lastly, I would like to dedicate this thesis to my family especially my parents, for their immense support and prayers.
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CHAPTER 1

PROBLEM STATEMENT AND OUTLINE OF THE STUDY

1. INTRODUCTION

Carter (2010) defines Lean as a proven, systematic approach for eliminating or minimizing waste that results in the production of goods or services at the lowest possible cost. It goes beyond the shop floor. Lean affects every system, every process, and every employee in the company. In its most basic form, Lean is the systematic elimination of waste by focusing on production costs, product quality and delivery, and worker involvement.

Schwiebert (2006) emphasizes that Lean is not about cutting staff and resources. Instead, it is about:

- Focusing people’s efforts creating value for the customer and eliminating waste; and
- Speeding up the operation by eliminating idle time created by paperwork and bureaucracy.

Womack and Jones (1996:115) found from their studies of lean manufacturing that there are five elements managers must address to create a lean system approach. These five elements are as follows:

- Identifying practices which provide customer service and activities which yield no benefit to the customer and can result in a cost to the business;
- Identifying the value stream which supports the organisation and meets customer quality standards;
- Creating a flow of materials that links the supplier and the enterprise by avoiding delays of batching and queuing of products;
- Creating Pull systems within the facility, allowing the customer in the next department to pull and not have goods pushed onto themselves; and
- Creating the ‘perfect’ system, thus the company cannot remain static, but must continuously improve.

1.1 BACKGROUND OF SARS ENFORCEMENT AUDIT

The South African Revenue Service (SARS) was established in 1997 with the integration of Customs and Excise and Inland Revenue. The SARS Act, No. 34 of 1997, gives the entity the mandate to efficiently and effectively collect all national taxes, duties and levies imposed in different pieces of taxation legislation as well as all revenue that may be collected in terms of any other legislation, as is agreed between SARS and the organ of state or institution concerned. SARS is also responsible for the control over the import, export, manufacture, movement, storage or use of certain goods. The organisation also provides advice to the Ministers of Finance and Trade and Industry on all revenue and customs matters (Audit Strategy 2008-2011).

Auditing is a risk-based tool, used to assess whether the stated declarations of taxpayers match the independently assessed findings of the tax authority. Accordingly, the mandate of the Enforcement Audit Division is to verify the tax compliance of taxpayers through conducting effective quality audits on their returns, to enable SARS, where non-compliant behaviour is found, to address such behaviour with punitive action.

The audit strategy document highlights that the efforts of Enforcement Audit can be undermined if high standards of professionalism are not adhered to within the SARS management environment.

1.2 MAIN PROBLEM

Low skill levels, a lack of continuous training, and awareness of the changing complexities of the tax and customs environment, are the result of several historical factors, including:

- Staff members seconded from other units to perform auditing work for extended periods without having the necessary qualifications and skills;

- Lack of specialists like forensic auditors
- Key Performance Indicators focusing on the number of completed audits rather than the quality of audits

- Lack of training regarding policies and procedures

- Lack of training, ongoing support and development of auditors.

In addition, adequate staffing to meet the Audit requirements considered optimal to have a deterrent effect, is necessary. This is particularly pertinent as SARS loses skilled auditing staff through attrition.

The main problem being researched is an investigate of how Lean tools, as used in manufacturing can be used to improve efficiency, increase productivity and contribute to the embedding of a continuous improvement culture in the SARS Port Elizabeth Enforcement Audit.

1.3 SUB-PROBLEMS

An analysis of the main problem allows identification of the following sub-problems.

1.3.1 Sub-problem 1

What lean tools does the literature reveal that Enforcement audit can use to solve the main problem?

1.3.2 Sub-problem 2

What does the literature say about adopting lean manufacturing in service industries?

1.3.3 Sub-problem 3

What is the appropriate Lean implementation strategy for Port Elizabeth Enforcement Audit?
1.4 OBJECTIVES OF THE RESEARCH

The overall purpose of this research is to investigate how Lean can be used in order to improve the SARS Enforcement Audit Process.

The objectives of this study are:

- Establish how a culture of process improvement can help the audit to be more effective and efficient;
- Establish if the enforcement audit teams are effective and productive;
- Identify wastes in the audit process;
- Establish the importance of quality control in the audit process; and
- Develop recommendations on how lean can be implemented to improve the Enforcement Audit Process.

1.5 DEMARCATION OF THE RESEARCH

Demarcation of the research makes the research topic manageable when researching. Certain topics have been omitted, but this does not imply that there is no need to research these topics.

1.5.1 ORGANISATION

The study was conducted in SARS Port Elizabeth Enforcement Audit Department.

1.5.2 AREA WITHIN ORGANISATION

The empirical component of this study was limited to PE Enforcement Audit Department which employs a total of 36 employees. The reason for choosing Enforcement Audit staff is because they have had first-hand experience of the audit process.
1.6. DEFINITION OF KEY CONCEPTS

1.6.1 LEAN

Lean is a philosophy that applies specific tools and methods in a consistent, disciplined and systematic manner to eliminate waste and improve operational effectiveness. It emphasizes the smoothest possible flow of work (Solotorow & Banks: 2006).

1.6.2 SARS Enforcement Audit

The South Africa Revenue Service (SARS) was established by legislation to collect revenue and ensure compliance with tax law. Enforcement Audit is mandate is to verify the level of tax compliance of taxpayers through conducting effective quality audits on their affairs and to enable SARS, where non-compliant behaviour is found, to address such behaviour with punitive action.

1.6.3 Efficiency

According to Heizer and Render (2001:252), effective capacity is the capacity a firm expects to achieve given the current operating constraints. Efficiency is the percent of effective capacity actually achieved. It is a measurement of the organisation's usage of current resources at its disposal.

1.6.4 Productivity

Schermershorn (1989:17) defines productivity as a measure of the quantity and quality of work performance with resource utilisation taken into consideration. Stevenson (1993:36) simply defines productivity as a measure of the effective use of resources that is usually expressed as the ratio of output to input.

1.6.5 Organizational culture

Organizational culture is what the employees perceive and how this perception creates a pattern of beliefs, values, and expectations. It is a pattern of basic assumptions, invented, discovered, or developed by a given group as it learns to cope with the problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new
members as the correct way to perceive, think, and feel in relation to those problems (Ivancevich & Matteson 1999:72).

1.7 ASSUMPTIONS

- The study will assist the Port Elizabeth office as well as other Enforcement Audit offices nationally in improving efficiency and productivity;
- Enforcement Audit Management will want to implement the lean management tools in the audit process as well as in other areas thereafter; and
- Management and employees will participate in the research with the intention of bringing about positive changes in their workplace.

1.8 THE SIGNIFICANCE OF THE RESEARCH

SARS Enforcement Audit Division’s vulnerability relates to inadequate systems, policies and procedures to support the work of the auditors, resulting in inconsistency in audit practices and inaccurate risk assessments resulting in inappropriate and time-wasting deployment of the capacity of the Audit Department. The security vulnerabilities include a lack of physical security of the assets, poor control of documents and records, inadequate controls over access to manual and electronic information systems. All of the above factors impact negatively on the Enforcement Audit Division and must receive attention in equal measure to the actual task of conducting audits.

The SARS Enforcement Audit Division through the use of Lean tools will create an environment embedded in the culture of continuous improvement. Employees will be empowered to identify and eliminate waste in the audit process as well as solve their own problems in a structured and systematic manner. The successful implementation of the study’s results will create an environment in which the employees will want to change rather than being forced to change.
1.9 RESEARCH DESIGN

The description of the broad methodology that was followed is as follows:

1.9.1 RESEARCH METHODOLOGY

To solve the main and sub-problems the following procedure was utilised.

- **LITERATURE SURVEY**
  
  Lean manufacturing tools, which can improve enforcement audit process to become world class, were identified from the literature as well as previous research conducted in this field was reviewed and the gaps, where possible were identified.

- **EMPIRICAL STUDY**
  
  The empirical study consisted of:

  - **SURVEY**
    
    The empirical survey was conducted by means of a questionnaire. The questionnaire was drawn up by the researcher that would establish what lean tools are required in trying to improve the efficiency and increase productivity of enforcement audit nationally at SARS focusing on the four research objectives.

  - **MEASURING INSTRUMENT**
    
    The instrument used to measure Lean tools required to increase productivity and efficiency was a comprehensive questionnaire. The questionnaire was delivered to each respondent and was later either collected or brought back to the respondents to the researcher.

  - **SAMPLE**
    
    Enforcement audit staff members from the Port Elizabeth office were used for the empirical study. Although all the 36 audit staff members were given
the questionnaires only 29 took part by completing and returning the questionnaires given to them.

- **STATISTICAL ANALYSIS OF DATA**

  Microsoft Excel spread sheet was used to capture the data from the questionnaire. Tables and graphs were used to analyse the data.

**1.10 OUTLINE OF THE STUDY**

The study includes the following chapters.

- Chapter 1 contains the problem statement, definition of key terms and outline of the study;
- Chapter 2 examines theories of lean manufacturing tools and discusses literature on LEAN
- Chapter 3 describes the empirical study and analyses the biographical details of the respondents;
- Chapter 4 analyses and interprets the results of the survey; and
- Chapter 5 reaches conclusions and makes recommendations to Enforcement Audit management team.

**1.11 CONCLUSION**

In this chapter, the main problem and sub-problems of the study were stated. Selected concepts were defined and an outline of the study was presented. In the following chapter the literature review is discussed.
CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Although the Enforcement Audit Division functions in an ever changing SARS context, the underpinnings of the audit profession are stable and regulated both by international standards and South African legal requirements. In addition, the audit profession in general sets a high bar on ethical and professional competence, and requires the registration of external auditors with professional bodies such as the South African Institute of Chartered Accountants (SAICA) and International Regulatory Body for Auditors (IRBA) national certifying body.

Auditing is a risk-based tool, used to assess whether the stated declarations of taxpayers match the independently assessed findings of the tax authority. Accordingly, the mandate of the Enforcement Audit Division is to verify the tax compliance of taxpayers through conducting effective quality audits on their returns, to enable SARS, where non-compliant behaviour is found, to address such behaviour with punitive action.

Shah (2010) defines the word “audit,” in the broadest sense, as a variety of activities. There is a systematic attempt to take a closer look at something whether financial statements or a factory process or customer service for the purpose of evaluation and, ultimately, decision making. In general, there must be a basis for an audit and a systematic method for gathering facts or evidence. An auditor compares the evidence with the requirements and comes up with observations, which can be either positive or negative. Up to this point, the process is similar to inspection, but an audit entails much more.

2.1.1 LEAN BACKGROUND

Lean is the name given to the Toyota production system which was developed after the World War II by Taiichi Ohno. It is the basis for much of the lean production system that has dominated the manufacturing industry for many years. (Liker: 2004).
Liker (2008) points out that the Toyota Production system can be summarized by the two pillars that support it namely:

1. Continuous improvement, often called Kaizen, which defines the basic Toyota approach to doing business, which is to challenge everything. The value of continuous improvement is in creating an atmosphere of continuous learning and an environment that not only accepts but also embraces change; and

2. The second pillar is respecting people. Toyota demonstrates this by seeking to engage team members through active participation in improving their jobs.

According to Booz, Allen and Hamilton (2002:2) lean manufacturing has gone through three waves of development over the last thirty years. These are:

- **Lean Wave 1**: The early thinking, applied solely to production environments, focused on three sub-principles:

  - Quality assurance to build accuracy into the system rather than requiring inspection after products are manufactured;

  - Stable production to minimize unnecessary variability created by the production system; and

  - Waste awareness to minimize low-value activities while stocking only necessary inventory (inter alia, Just-In-Time).

- **Lean Wave 2**: Application of the lean principles led to a set of five detailed sub-principles:

  - Reduce cost drivers not cost buckets;

  - Manage quality, speed, and cost collectively because quality and speed initiatives remove more cost than focusing on cost alone;

  - Enable frontline ownership of work to ensure lean production is realized;

  - Manage processes end-to-end to realize benefits; and

  - Drive out complexity by starting at the structural level of product design and production footprint.
**Lean Wave 3:** Based on the recent work of leading edge manufacturing companies, a third lean wave has emerged that addresses all the principles and sub-principles, using a simple suite of three architectures:

- **Product architecture** that manages structural complexity, which seeks to balance cost and variety by finding the common factors in many products. Product architecture, can be developed;

- **Decision rights architecture** that drives speed, quality and costs as well as involves rethinking who can make what decisions, at what levels and what everybody needs to make effective decisions; and

- **Technological architecture**, which is the underlying enabler to the process that should be developed to enable and support product and decision architecture.

### 2.1.2 WHAT IS LEAN?

Meredith and Shafer (2007) define Lean as a philosophy that seeks to eliminate all types of wastes, whether it be excessive delays, excessive lead times, carrying excessive levels of inventory, workers travelling excessive distance, spending too much time setting up equipment, unneeded space, reworking defective products, clarifying orders, idle facilities and scrap. He further points out that since waste can be thought of as those activities and outcomes that do not add value for customer, a strong customer orientation is central to lean.

Lean is defined by Solotorow and Banks (2006) as being a philosophy that applies specific tools and methods in a consistent, disciplined and systematic manner to eliminate waste and improve operational effectiveness, as well as being the philosophy that emphasizes the smoothest possible flow of work. Its primary focus involves determining.

The lean process requires a way of thinking that focuses on making the product flow through value-adding processes without interruption; a pull system that cascades back from customer demand by replenishing only what the next operation takes
away in short intervals, and a culture where everyone is continuously striving to improve. (Liker: 2004)

2.2 LEAN TOOLS

Bicheno and Pieterse (2008:49) listed Lean tools that are developed by Ohno and his associates to achieve a perfect state of continuous flow as follows:

- Flexible resources
- Cellular layouts
- Pull production
- Kanban production
- Small-lot production
- Quick set-ups
- Uniform production levels
- Quality at the source
- Total Productive Maintenance
- Supplier networks
- Continuous improvements
- Line-stop authority
- Standard tasks; and
- Autonomation
2.2.1 Kaizen

Kaizen is a Japanese word for continuous improvement. In a lean enterprise it is expected that every worker must contribute ideas and improvements regularly. This is a culture that must be taught with proper channels, rewards and systems in place in order for this to be practiced by all the workers. (Pieterse, Van der Merwe, Lourens & Murray: 2010).

According to Peterka (2006) the reasons why a non-manufacturer would implement Kaizen include the following:

- **Lowers costs:** Services differ from manufacturing. More variety exists in services than production. With manufacturing, the ideal is to produce the same product at the rate of customer demand. Manufacturers abhor variety because it slows production and creates the potential for incurring costs. With services the ideal is to accommodate variety. A call center, for example, must handle as many different types of customer events as possible. Many events are the result of something not done or something not done right. Thus, services generate costs by “failure demand.”

  Kaizen focuses on eliminating failure demand. Employees make suggestions on how to do things right and use Kaizen to make changes. By helping workers get it right, Kaizen minimizes the need for, as well as the cost of, doing something or providing a service. Obviously, the more things a service or non-manufacturer does right, the less cost it generates.

- **Immediate results:** Kaizen takes place one small step at a time. It’s driven to resolve specific problems. Instead of tackling large improvements, Kaizen makes minor enhances that solve large numbers of small problems. Thus, firms see Kaizen results quickly, encouraging them to make more suggestions. Large capital projects and major changes are still needed, but the real power of Kaizen is in making small improvements continually that improve processes or reduce waste. In short, Kaizen concentrates on making fast changes cost-effectively.

- **Reduces waste:** The Kaizen methodology involves making alterations looking at the results and additional alterations to improve the processes. These changes reduce waste, that is, eliminate activities adding cost only. Waste includes activities like overproduction; people, materials, or information waiting; unnecessary motions by
workers; and unsynchronized transportation. It also includes excess inventory, correcting defective work, and unnecessary processing steps.

- **Energizes Employees:** Kaizen depends on employees suggesting changes. For example, in 1999 alone, 7000 employees at a Toyota plant in the U.S submitted over 75,000 improvement suggestions, of which 99 percent were implemented. Kaizen encourages employees to come up with more and more of these small improvements, motivates them to improve their work lives, excites them about their work, and challenges them to be responsible for change. In other words, it empowers employees, enriches the work experience, and motivates workers.

- **Increase Productivity:** A major national bank used Kaizen whenever it wanted to attack process speed and efficiency problems. The projects were all well defined, involved participants pulled off their jobs for only a few days, and included a cross-functional team. The projects also supported a cross-functional view of the process or work area. Using Kaizen, the bank achieved cycle time improvements ranging from 30 percent faster to nearly 95 percent faster. One administration process went from 20 minutes to 12, and a complaint resolution process dropped from 30 days to 8. An added bonus for the bank was an increase in revenues. One high level project enabled the bank to charge for a service it had never charged for before.

Kaizen is a powerful improvement tool. It isolates employees from day-to-day tasks for a few days so they can concentrate on specific activities, like problem solving and improvement exclusively. Companies using kaizen find that they not only reduce waste and see immediate results, they also increase productivity, lower costs, and energize employees.

### 2.2.2 Quality Control

Quality control is a process employed to ensure a certain level of quality in a product or service. It may include whatever actions a business deems necessary to provide for the control and verification of certain characteristics of a product or service. The basic goal of quality control is to ensure that the products, services, or processes provided meet specific requirements and are dependable, satisfactory, and fiscally sound. Quality control can cover not just products, services, and processes, but also people. Employees are an important part of any company. If a company has employees that don’t have adequate skills or training, have trouble understanding
directions, or are misinformed, quality may be severely diminished. When quality control is considered in terms of human beings, it concerns correctable issues. However, it should not be confused with human resource issues (Madison: 2003).

Total quality management is an art of managing the whole to achieve excellence. The purpose of total quality management is to provide a quality product or service to customers, which will in turn increase productivity and lower costs.

Pieterse, K. et al. (2010) identified the principles of total quality as follows:

- the customer defines quality, and customer satisfaction as the top priority;
- top management must provide leadership for quality;
- quality is a strategic issue and requires a strategic plan;
- quality is the responsibility of all employees at all levels of the organisation;
- all functions of the company must focus on continuous quality improvement to achieve strategic goals;
- problem solving and continuous quality improvement use statistical quality control methods; and
- training and education of all employees are the basis on continuous quality improvement.

**Figure 2.1** The scope of Total Quality: Evans and Lindsay (2005:23)
2.2.3 Kanban

Kanban is the Japanese word for card. Kanbans were derived from the two-bin system used in manufacturing. A kanban card can contain basic information such as a brief description, unit load, preceding station and subsequent station. Sometimes the Kanban is colour coded to indicate the stages in the process. The same Kanban can rotate back and forth between preceding and subsequent workstations. Kanbans are closely associated with the fixed-quantity system. (Russel & Taylor: 2006).

According to Todd (1995:65), since the introduction of kanban, a number of variants have been introduced:

- The two card kanban system in which the user releases a card that authorises the store to move a replenishment supply to the user. The store also removes a second card, which is attached to the pallet and sends it to the component supplier as authorization to produce another standard quantity of components;

- The one card kanban system operates in the same as the two card kanban system except that the once card acts as both the move and produce authoriser. This is used when the supply point is close to the user point;

- The container-based kanban system which uses predetermined number of pallets or containers in the system that are uniquely identified to a particular part number or component and the empty container is filled with parts;

- The shelf-space kanban system, which uses a minimum and maximum number allowed per pigeon hole. When the minimum number is reached, more is added; and

- The floor grid kanban system which works similar to the shelf-space kanban system but is used for bulky or heavy components.
2.2.4 5S.

According to Monden (1997:199) when it comes to organizational and office management techniques, the goal is to have the leanest organization possible that can deliver the best results possible to the satisfaction of all stakeholders. The 5S management methodology is an important organizational technique that originated from Japan. It represents the Japanese words Seiri, Seison, Seiketsu and Shitsuke, which collectively translate to a cleanup activity at the work place. Over time various kinds of dirt can accumulate in offices within a company. Dirt includes unnecessary work-in-progress, inventories, defective inventories, documents, reports and stationery (Monden, 1997: p199).

A number of attempts have been made to have an English equivalent to the 5S office without losing the original meaning of each word.

According to Sowards (2004), the 5S’s were developed by Toyota and are actually “S” words in Japanese. The 5S tools reduce waste present in every operation in both the field and office. They can be listed as follows:

- **Seiri**: *Sorting* means to go through a designated work area and to sort out the necessary from the unnecessary. Necessary is defined by frequency of use. If you don’t use an item at least annually it is probably not necessary to your work. If you don’t use it at least monthly, you probably don’t need to keep it anywhere near your operations. Items that are necessary are kept and all the rest are disposed of, recycled or returned. Sorting is fun; it feels good to get rid of stuff;

- **Seiton**: *Simplifying* means to put everything in a designated place and to visually mark it. This is the critical step in eliminating time wasted in doing “treasure hunts.” Not only is a place established for every necessary item, but also the actual location is based on how often it is used. The items we use most often are located closest to where we use it. Those used less often are farther away;
- **Seiketsu**: Sweeping means to physically clean up the work area and to deliberately pickup all parts and material that are out of place and return each to its assigned place as defined in Simplifying;

- **Shitsuke**: Standardizing means creating standard ways to keep the work areas organized, clean and orderly and to document agreements made as part of the 5S’s. Employees must understand the value of using and maintaining standard methods if this “S” is to be successful. It also means to repeat the first three steps over and over to continuously improve; and

- **Shitsuke**: Self-discipline means following through with the 5S’s agreements. If we don’t maintain the changes we made with the 5S’s, we will not maintain the gain.

### 2.2.5 Muda

Muda is the Japanese word for waste. Bicheno and Pieterse (2008:33) highlight 14 office wastes as being the most universal but not mutually exclusive types of office waste:

- **Sorting and searching**: This includes looking for documents or files that could be misplaced or poorly allocated. This is most evident in areas where 5-S has not been implemented;

- **Inappropriate measurement**: When incorrect measures are used, unnecessary collection and analysis of data will occur which is non-value adding and therefore a waste that needs to be eliminated.

- **Underload**, especially from the manager or supervisor could mean the imposition of additional work to those who are busy and effectively spending their time assisting the customer. This could come up as new forms, templates, procedures or measures.

- **Overload or overburden**. This happens when the capacity and demand planning was not done properly when the labour balance or workload leveling is not done and some resources are stretched.
- **Inappropriate prioritising**: This happens when there is no balance between what is urgent and what is important. People respond to what is urgent and relax forgetting that what is not urgent today will be urgent tomorrow;

- **Interference**: “A variant on inappropriate prioritising is interference – by e-mails, excessive socializing, dropping-in and noise” This happens when there is no time set aside to focus on value adding or important activities.

- **Inappropriate frequency**: This is when there is no balance between essential but non-value adding activities like reports, meetings and value adding activities.;

- **Start up and end off**: This refers to the drop of speed at the start and end of the shift as well as after breaks.

- **Mistakes, errors or lack of appropriate knowledge**: “These result in failure demand and so are major sources of reduced capacity.” This happens when there are no measures in place to check the causes of mistakes as well as not equipping staff to meet demand and/or challenges.

- **Misunderstanding or communication errors**: This is the root of many other wastes. This normally happens when the information received is not the information passed on by the other party.

- **Sub-optimisation or improving the part but not the whole**: This happens when the analysis of the entire system was done and a response or a quick fix is given to one element and as a result, the entire system fails or suffers.

- **Waiting**: This waste happens when team members wait for their team leaders or vice versa to either get approval or some information. This also happens between team members waiting for assistance or information from each other.

- **Inappropriate presence**: This is particularly observed when people attend meetings and after the meeting they do not understand why they attended the meeting in the first place as it was not productive for them or the important part was covered in the first half of the meeting.
- Inappropriate trade off: Made either implicitly or explicitly between four objectives: development speed; product or service cost; product or service performance and development programme expense.

2.2.6 Value Stream Mapping (VSM)

A value stream map is a tool to help sort all the product types into distinct families. The whole process is drawn schematically to show the supplier, the customer and the individual steps in the process. These steps are described in detail to facilitate the drawing of a future state map, which describes the ideal future layout of the process after making appropriate lean changes. It assists in visualizing, identifying and eliminating all forms of waste (Conner, 2001:29).

Conner (2001) identified four steps of value stream mapping namely:

- Product Development
  - Identify customer requirements;
  - Define method of delivery; and
  - Define typical quantity requirement

- Process Design
  - Perform an upstream walk through for each process step, observing and documenting as much of the following as possible:
    - Cycle time;
    - Changeover times;
    - Average inventory queue;
    - Average production batch size;
    - Number of operators at each process;
    - Available time;
- Scrap rate; and
- Number of product variation

- **Preparation**

Record as much information as is pertinent in the process description box.

- **Planning**

- Development future state map
- Dream about perfection
- Think outside the box
- Develop alternatives to the current state map that are muda free, and
- Focus on velocity

### 2.2.7 Lean Teams

Cohen and Bailey (1997:241) described a team as a collection of individuals who are interdependent in their tasks, share responsibility for outcomes and who manage their relationships across organizational boundaries. Whilst Sundstrom et al. (1990:p 120) defined work teams as interdependent collections of individuals who share responsibility for specific outcomes for their organizations. Bacharach’s (2005) more recent description of a team is a group of agents with a common goal that can only be achieved by appropriate combinations of individual activities.

Frieling, Freiboth, Henniges, and Saager (1997:382) identified six characteristics of self-directed work teams: organizational structure; team-oriented activities; participation autonomy; formal communication; qualification and continuous improvement process.

According to Lee (2004), teamwork provides superior motivation, enhanced coordination, improved problem solving, and better decision-making. Team building is not an easy task. Teams require training, compatible workflow, compatible organizations structures, understanding management, and patience. Work teams are
an important component of Lean Manufacturing. They enhance the performance of work cells and improve quality efforts. In Lean manufacturing, teamwork enhances work cell operation through superior motivation and better balance. Teams can improve work processes, solve problems and prevent errors in all parts of the organization.

Guzzo & Dickson (1996), classifying types of teams is essential when designing, managing, and determining the necessary resources for training and output requirements that contribute to overall team effectiveness.

Hackman (1987) identified three types of teams based on their level of authority:

- **Manager-led work teams** require management to monitor, design, and determine the structure while teams perform prescribed tasks, with effectiveness highly dependent on the decision-making process of management rather than on individual members of the team;

- **Self-managed work teams** are designed and structured by management, with the team members being responsible for monitoring and managing their own performance of the tasks, resulting in shared accountability between management and team effectiveness; and

- **Self-designing work teams** transfer the majority of the authority to team members, with only the organizational context determined by management; this type has the highest level of autonomy among the three.

### 2.3 LEAN IN PUBLIC SECTOR AND SERVICE INDUSTRY

According to Wright (2006), non-manufacturing industries have not embraced lean manufacturing to the same extent as those producing a product. Some service industries have found the same principles apply, although the use of lean manufacturing tools is different.

In a study by Radnor and Walley where they analysed a series of case studies of Lean in the public sector around four themes; process-based view, focus on value, elimination of waste and employee-driven change before considering the implementation approach taken and outcomes achieved. The outcomes were
significant, but the authors warn against an implementation approach which focuses solely on Lean tools.

The majority of the academic literature on Lean in the public sector is descriptive and developmental in nature. Although much of the academic literature could not therefore be described as very rigorous, nevertheless it gives support to the idea that Lean can be successfully adapted for use in the public sector. Lean is shown as a methodology that helps configure resources and processes in a customer-focused manner, using staff to generate the analysis of what is wrong with a process and how to make improvements (Radnor and Walley: 2008).

In an office environment, the customer could be a consumer purchasing a product, a citizen receiving a service or another department or operation within the same organization. The primary goal of Lean is improved customer service. By working to eliminate "waste" that is not valued by the customer, we are better able to provide exactly what the customer wants, when the customer wants it and in the way the customer wants it.

According to Seddon (2008), the Core Paradigm for conventional service management is derived from the philosophy underpinning factory thinking. The three questions that make up the Core Paradigm are the questions that preoccupy managerial decision-making in transactional service organisations:

- How much work is coming in?
- How many people have I got? and
- How long do they take to do things?

2.3.1 Case examples of Lean Service:

Bowen & Youngdahl (1998) examined three service companies that implemented Lean using the following Lean Service characteristics:

- Reduction of performance tradeoffs
- Operations goals of both internally-focused efficiency and customer-defined flexibility
- Flow production and JIT pull
  - Minimize set-up time allowing for smoother flow
  - JIT levels of both input and output
- Value-chain orientation
  - Apply service blueprinting and value analysis to eliminate non-value-added activities
- Increased customer focus and training
  - Involve the customer in the design of the service package
  - Train employees in customer service skills and behaviours
  - Train customers in how to contribute to quality service
- Employee empowerment
  - Invest significantly in employees (skills, teambuilding, participation)
  - Empower employees to leverage customers’ value equation (benefits divided by price and other costs)

**Taco Bell:** In the early 1990s, Taco Bell began determining what its customers valued in a meal. They discovered that people wanted fast food fast, accurate orders, food served in a clean restaurant, and food served at an appropriate temperature. The company developed its business strategy to reinforce and support any activities that help the company deliver FACT. Taco Bell effectively reduced performance tradeoffs by delivering FACT, while reducing costs and offering a new “Value” menu of low-cost meals (Schlesinger and Hallowell: 1994).

**Lean service at Southwest Airlines:** According to Hallowell (1996), Southwest Airlines (SWA) won the airline industry’s “triple crown” for fewest late flights, fewest mishandled bags, and fewest passenger complaints for three years in a row and has been the only major US airline to earn a profit throughout the 1990s.
A close look at SWA’s strategy and operations reveals another example of the “lean” production-line approach to service. SWA has resolved the performance tradeoff between efficiency and other customer benefits such as flexibility, quality, and variety. SWA achieved “dual competitive advantage” by realizing a position of both cost advantage and superior service. SWA’s operations are driven by a value chain orientation and are supported by flow production and JIT pull. SWA’s “no frills” approach has eliminated the waste and cost of services such as in-flight meals that are considered to be relatively unimportant to passengers. To enhance the speed and flow of service delivery, SWA restricts service to those airports characterized as uncongested, concentrates on short-haul routes, and uses only the smaller aircrafts. All these operating characteristics allow SWA to turn around a flight in only 17 minutes whereas the average airline takes approximately 45 minutes (Hallowell:1996).

Customers are involved in co-producing the in-flight service experience. Games and contests are held in-flight where customers compete to guess the ages of flight attendants, to show which passenger has the largest hole in his/her socks, and so on. Moreover frequent-flying passengers may also be invited to serve on a board of SWA interviewers who screen applicants for flight attendant positions (Schneider & Bowen:1995).

SWA has empowered its check-in personnel and flight attendants to exercise their personal discretion to create a positive service experience for passengers. The empowerment of SWA employees represents a radical departure from the mass production-line approach, which still seems to characterize the majority of the airline industry. (Hallowell:1996).

**Shouldice Hospital**: Herzlinger (1977) described Shouldice Hospital as a focused factory. The hospital does indeed focus its service delivery system on a single procedure, repair of external types of abdominal hernias. However, the Shouldice approach to healthcare does not rely solely on the back-office standardization and efficiency of the production-line approach to service. Rather, extensive participation on the part of the customer, or patient, in the preparation, delivery, and healing phases of service delivery drives the effectiveness and efficiency of the Shouldice approach to hernia repair. Patient involvement frees the nursing staff to focus on
counseling activities. Surgeons are encouraged to minimize risk, work as part of a team, and strive for absolute perfection.

Furthermore Herzlinger (1977) explains, the screening process and patient involvement in preparation maximize value-added and efficiency. Achieving flow, or continuous addition of value, at Shouldice depends on patient involvement. Unlike stereotypical surgeons, striving to develop new procedures and receive individual recognition, Shouldice surgeons are encouraged to work as part of a team. Their surgical work must conform to the Shouldice method, but patient assignments are rotated such that surgeons receive a certain number of non-routine procedures. Similar to the rationale of group technology work cells found in manufacturing, operating rooms are arranged in a U-shaped configuration to allow for sharing of information, expertise, and a common anaesthesiologist. Also, nurses having been freed of routine work such as shaving patients and emptying bedpans, have the freedom to work on solving individual patients’ problems in truly value-adding ways. The results of Shouldice Hospital’s “lean” approach to service include low costs and remarkable recovery rates. Patients recover faster and with fewer complications than patients who undergo traditional hernia repair procedures. Integrating patient involvement into all aspects of preparation and healing frees Shouldice nurses and surgeons to add value through counselling and surgery. The entire system is driven by patient pull. The availability of operating rooms and patients’ rooms is “pulled” by the effectiveness and efficiency of patients’ contribution to both preparation and healing.

In summary, service companies such as Taco Bell, Southwest Airlines, and Shouldice Hospital have successfully implemented a “lean” service model, by adopting practices associated with “lean” manufacturing, e.g. value chain orientation and employee empowerment, they have become visible, acclaimed service role models Bowen & Youngdahl (1998).
2.4 LEAN OFFICE

According to Drew (2008) attempts to apply lean principles in service organizations or to administrative processes in manufacturing companies often fall short of complete success. Key reason for these shortcomings is that office work has more variability than factory work. However, the cause of the variability is often how the company organizes itself to Process information. In many printing companies, the information Process consumes the largest amount of lead time, which a printer typically addresses through prepress but the lengthy lead times in the prepress Process are related to the many hand-offs and queues that exist. To minimize the delays, printers make significant investments in direct-to-plate or direct-to-press technologies.

Carter (2010) identified the following benefits of a lean office:

A lean office management system can affect administrative processes at all levels of your organization.

- **Enterprise-level processes**: The processes that touch your external customers and suppliers: order entry, customer service, accounts payable, accounts receivables, marketing and sales, research and development, product development, and distribution. Lean management tools can streamline and speed up these processes.

- **Organizational-level processes**: The key support processes in your organization: information technology, human resources, engineering, and purchasing. Lean will streamline these processes and improve process efficiency.

- **Department-level activities**: Lean reduces activities that add time but little or no value. It can help create flow at the pull of the customer, reduce hand-offs, and improve departmental quality.

- **Individual-level tasks**: Lean can reduce the paperwork, manual entries, and errors within standardized work procedures; help improve workplace organization; and clarify individual roles and responsibilities.
Lean has been successfully implemented on the shop floor to eliminate waste and increase revenue. It is only recently that companies are using Lean Office as a key productivity factor to streamline and eliminate waste from their office and administrative processes and achieve bottom-line savings.

Juroff (2003) identified ways that Office Lean can impact administrative processes at all levels of an organization:

- **Enterprise Level**: Streamlines and accelerates those processes that touch external customers and suppliers such as order entry, customer service, accounts payable/receivable processing, marketing/sales, R&D, product development and distribution;

- **Organizational Level**: Streamlines key support processes (e.g. Information Technology, Human Resources, Engineering, Purchasing), identifies internal customer requirements and value, improves communication and cross-functional cooperation;

- **Departmental Level**: Focuses on objectives, reduces activities that add time but little value, measures progress to Takt Time, creates Flow to reduce hand-off breakdowns, implements Pull and Kanban systems and uses Visual Management to identify issues; and

- **Individual Level**: Reduces paperwork, manual entries and errors using Standard Work Procedures, improves organization using 5S, and clarifies individual roles, responsibilities and objectives.

Audrey (2011) identified Waste in a plant is usually quite visible. On the surface it’s easy to see raw materials and resources that aren’t being used. Piles of sheet metal and other parts sitting around are easy to spot too. But in an office, waste can be a little trickier to see and identify.

- **Processes** - The number of signatures required to get an initiative approved and in place in a company. How long does the paperwork sit in someone’s office? Sometimes a bottleneck occurs which keeps things from moving
forward. If this is the case, can a few signatures be removed from the layers presently required?

- **Customer orders** - Once someone places an order, how long do they wait until it’s fulfilled and shipped? This represents another process that needs to be studied and evaluated on a regular basis to make sure that the customer’s needs are being met.

- **Paper** - Paper represents one of the most common wastes in an office. Hanging on to items because when not sure whether or not they need to be saved.

- **Office Supplies** - Having too many office supplies is not as easy to spot. Sometimes people become mini hoarders in keeping their favourite pens and sticky notes tucked away. To avoid this waste of Inventory, a designated person should oversee the purchasing and maintenance of office supplies.

- **Time** - Identifying wasted time is hard to do because people don’t always want to admit that they are wasteful in this area. In the office too much time is spent in meetings or reading and processing emails. Using a time log sheet or software helps to be more realistic in understanding where time is spent and where adjustments can be made.

Discovering wasteful areas in and around offices motivates to remove waste and replace it with more efficient systems and processes.

### 2.5 IMPLEMENTATION OF LEAN

Lean principles have been adapted and adopted in various public sector organizations, although the way that they have been implemented differs depending on the organization. The most extensive examples of Lean applications in public services appear to be in healthcare, although there is no reason that it could not be applied to the wider public sector. (Radnor and Walley: 2008)

According to, O’Neill (2006:2) states that the following are the key steps for the successful implementation of lean Manufacturing:
- **Step 1** - Companies and their leaders need to develop long term thinking and ditch the short term thinking of shareholders who can often provide a stumbling block as they seek a quick payback on their investment.

- **Step 2** - Find a change agent, either within your company or someone with a track record of implementing change.

- **Step 3** - Find someone who can teach you, preferably someone who has a great track record as a lean expert.

- **Step 4** - Set up an action plan for change. Sometimes this is forced because of a crisis such as competition threatening to take orders or quality problems but in any case one must set out a vision of no turning back and this is where the leader comes in.

- **Step 5** - Pick something important and get a quick win. This sets the scene and gets people onto your side. You will be surprised how much you can get done in a very short time.

- **Step 6** - Once you have your quick win under your belt, you should draft an implementation plan to roll out the process. Measure where you are now and then apply the same measurements to see your progress after each improvement exercise.

**Conclusion**

Lean principles have been adapted and adopted in various public sector organizations, although the way that they have been implemented differs depending on the organization. The most extensive examples of Lean applications in public services appear to be in healthcare, although there is no reason that it could not be applied to the wider public sector (Radnor and Walley: 2008).

In this chapter, the SARS enforcement audit background was defined and discussed. The background of Lean was also discussed together with the Lean tools. Lean in public sector and service industry was also discussed.
CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

By definition, theory must have four basic criteria: conceptual definitions, domain limitations, relationship-building, and predictions. Theory-building is important because it provides a framework for analysis, facilitates the efficient development of the field, and is needed for the applicability to practical real world problems. To be good theory, a theory must follow the virtues for 'good' theory, which apply to all research methods. Theory-building research seeks to find similarities across many different domains to increase its abstraction level and its importance (Wacker: 1998).

3.2 RESEARCH METHODOLOGY

3.2.1 Research Objective

Enforcement Audit Management, have tried for many years to find different ways to improve the quality and efficiency of audits. The objective of this study is to investigate how Lean tools can be used in order to increase efficiency in Enforcement Audit Port Elizabeth.

3.2.2 Research Limitation

This research will only be limited to the Port Elizabeth enforcement audit division of the South African Revenue Service. The questionnaires will be distributed to the audit staff members in the Port Elizabeth office.

3.2.3 Research Approaches

Qualitative research is defined as a form of research rooted in empiricism in which the researcher is the means through which the study is conducted to learn about some aspect of the social world. Quantitative research is defined as research conducted to test reality by testing hypotheses through experiments, quasi-experiments, or correlations in an effort to view social realities objectively qualitative research is not interested in numerical measurements, or for that matter, measurements of any sort very often. Quantitative analyses and measures cause and effect relationships between variables, not what the variables constructed
meanings are. However, quantitative results are often more generalized than qualitative results, but, in qualitative, rare communication phenomena are given just as much importance as more frequently occurring phenomena (Phillips: 2007).

Table 3.1 The differences between qualitative and quantitative research approaches Miles & Huberman (1994: 40).

<table>
<thead>
<tr>
<th>Qualitative</th>
<th>Quantitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>All research ultimately has a qualitative grounding</td>
<td>&quot;There's no such thing as qualitative data.</td>
</tr>
<tr>
<td>The aim is a complete, detailed description.</td>
<td>The aim is to classify features, count them, and construct statistical models in an attempt to explain what is observed.</td>
</tr>
<tr>
<td>Researcher may only know roughly in advance what he/she is looking for.</td>
<td>Researcher knows clearly in advance what he/she is looking for.</td>
</tr>
<tr>
<td>Recommended during earlier phases of research projects.</td>
<td>Recommended during latter phases of research projects.</td>
</tr>
<tr>
<td>The design emerges as the study unfolds.</td>
<td>All aspects of the study are carefully designed before data is collected.</td>
</tr>
<tr>
<td>Researcher is the data gathering instrument.</td>
<td>Researcher uses tools, such as questionnaires or equipment to collect numerical data.</td>
</tr>
<tr>
<td>Data is in the form of words, pictures or objects.</td>
<td>Data is in the form of numbers and statistics.</td>
</tr>
</tbody>
</table>
Subjective - individuals interpretation of events is important, e.g., uses participant observation, in-depth interviews etc.

| Objective seeks precise measurement & analysis of target concepts, e.g., uses surveys, questionnaires etc. |
| Qualitative data is more 'rich', time consuming, and less able to be generalized. |
| Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail. |
| Researcher tends to become subjectively immersed in the subject matter. |
| Researcher tends to remain objectively separated from the subject matter. |

According to Sofaer (1999), qualitative research methods are valuable in providing rich descriptions of complex phenomena; tracking unique or unexpected events; illuminating the experience and interpretation of events by actors with widely differing stakes and roles; giving voice to those whose views are rarely heard; conducting initial explorations to develop theories and to generate and even test hypotheses; and moving toward explanations. Qualitative and quantitative methods can be complementary, used in sequence or in tandem.

This study employed a qualitative research design to determine lean tools that can be used to increase efficiency in SARS Enforcement audit. A qualitative method was chosen because it assesses the efficiency of the current audit process using quantifiable measures collected being reliable and precise. A self-administered questionnaire based survey was adapted for this study.

**3.3 DATA COLLECTION INSTRUMENT AND SOURCE**

Good measurement is of absolutely critical importance to good research. It is unfortunate that problems in measurement so often go unrecognized and, if recognized, are treated so lightly. It is impossible to demonstrate effectiveness of any intervention without reliable measurement (Sechrest: 2001).
Qualitative research begins with the specific and moves toward the general. The data collecting process in qualitative research is personal, field-based, and iterative or circular. As data are collected and organized during analysis, patterns emerge. These data patterns can lead a researcher to pursue different questions or concepts, in a manner similar to rolling a snowball downhill. Throughout the data collecting process, researchers typically record their thoughts and impressions about the emerging data patterns. Qualitative researchers gather data about their research in several different ways or from many different sources (DeVault).

3.3.1 Questionnaire Design

Collis and Hussey (2003:173) describes a questionnaire as a list of careful structured questions that are chosen after considerable testing with a view to drawing out reliable responses from a chosen sample on what they do, think or feel.

According to Collis and Hussey (2003:174) the main decisions when using questionnaires are:

- Sample size;
- Type of questions;
- Wording of the question and how to ensure that they are intelligible and unambiguous;
- Design of the questionnaire, include any instructions;
- Wording of any accompanying letter;
- Method of distribution and return of the completed questionnaires;
- Test for validity and reliability and when they should be applied;
- Methods for collating and analysing the data thus collected; and
- Any action to be taken if questionnaires are not returned;
The questionnaire was divided into various sections. The first Section of the questionnaire was designed to capture biographical information that was relevant to the objectives of the study. This section gathered demographic data of the respondents on the job function and the length of service at SARS, another section consisting of 20 closed ended questions and the last section consisted of open ended questions. The layout ensured that all questions of a section fitted on one page for easy reading. The questions were asked to measure the respondents’ Process Improvement; Team Work; Wastes and Quality Control.

Thirty six questionnaires were distributed to the whole of Port Elizabeth enforcement audit staff members. The questionnaire was accompanied by a covering letter which gave background to the study. The researcher was also responsible for advising the respondents on informed consent and instructing them on how to complete the questionnaire.

The first two questionnaires handed out were used as pilot studies. There were no alterations made to the tool since the first two respondents found the tool easy to use and understand. The researcher individually distributed the questionnaires and was available if the respondents needed clarification on the questionnaire.

3.3.2 Validity and Reliability

Research instruments must be selected or developed carefully to fit the research design and the plan for data analysis so that the data collected will be useful for answering the research questions. Good research instruments produce valid and reliable results (Gaberson: 1997)

- **Validity**

Researchers make inferences from measurement results about how much of the variable being measured is present. Validity refers to the extent to which these inferences are sound. A researcher’s interpretation of a score is valid if it yields accurate conclusions about the variable. Validity, therefore, is not a characteristic of the research instrument itself, the term refers to the ways a researcher interprets and uses measurement results (Gaberson: 1997).
Although a valid assessment is by necessity reliable, the contrary is not true. A reliable assessment is not necessarily valid. For some researchers, mainly qualitative, ‘validity’ is not a singular acid test that can be applied to the research process as a whole. The ‘validity’ measure can be applied differently depending upon the researcher's beliefs as to what stage of the research process is in need of validation. Such an approach may perceive validity as referring only to measurement, observers, scores, instruments, relationships between scores or observable variations, rather than to the whole research process. Within this approach, ‘validity’ is claimed either by viewing it as resident in a particular stage of the research process, or as combinations of certain stages (Winter: 2000).

According to Incrisis (2009), there are 6 primary types of validity. Following is a brief description of each.

- **Face Validity.** This form of validity is based on commonly accepted opinion or consensus of opinion. Face validity is normally established by qualified professional observation, investigation or experience with an instrument, test or a computer-based test interpretation system. Face validity is based on how the results look.

- **Content Validity.** This form of validity is based on the content (actual questions) used in a survey or questionnaire. Content validity is established by a professional or professionals selecting appropriate content for questions and statements. The results of a questionnaire or survey are considered valid if the questions are appropriate and necessary to identify a specific attribute, state or quality.

- **Predictive Validity.** This form of validity is based on a questionnaire's ability to predict what it is supposed to predict that its ability to predict some future state, result or event.

- **Concurrent Validity.** This form of validity means a questionnaire or survey is capable of identifying a state, attribute, quality or result that is
already known. An instrument is valid if it correctly identifies by some other means a state or result that is already known to exist.

- **Construct Validity.** This form of validity is the most difficult to establish. It is normally based on demonstrating meaningful relationships among elements of states, attributes, results, problems or disorders.

- **Incremental Validity.** This form of validity can help determine whether or not a particular instrument or method provides a significant improvement in addition to the use of another approach. A particular approach is said to have incremental validity if it actually helps more that not using it.

- **Reliability**

  Although the term ‘Reliability’ is a concept used for testing or evaluating quantitative research, the idea is most often used in all kinds of research. If we see the idea of testing as a way of information elicitation then the most important test of any qualitative study is its quality. A good qualitative study can help us understand a situation that would otherwise be enigmatic or confusing. When quantitative researchers speak of research validity and reliability, they are usually referring to a research that is credible while the credibility of a qualitative research depends on the ability and effort of the researcher. Although reliability and validity are treated separately in quantitative studies, these terms are not viewed separately in qualitative research. Instead, terminology that encompasses both, such as credibility, transferability, and trustworthiness is used (Golafshani: 2003).

  According to Gaberson (1997), reliability has been categorized into several different types, including stability, equivalence, homogeneity, and scorer reliability.

  - **Stability.** Evidence of stability indicates that research subjects would achieve essentially the same scores if they took the same test at another time. This type of reliability evidence is appropriate for situations in which the variable being measured is expected to be stable over time, such as trait anxiety.
- **Equivalence.** Evidence of equivalence involves the use of two or more forms of the same test. Both forms of the test are administered to the same research subjects, and the resulting scores are correlated. A high reliability coefficient indicates that the two forms sample the domain of content equally well. The major weakness of this type of reliability evidence is that many research instruments are not available in equivalent forms.

- **Homogeneity.** Tests of homogeneity are performed to assess the extent to which each item on the instrument measures the same construct. A homogeneous instrument contains items that are highly interrelated. This type of reliability evidence is sometimes referred to as internal consistency.

- **Scorer reliability.** Depending on the type of measurement instrument used, error may arise from the person who scores a test or from the procedures used. Researchers need to collect evidence of scorer reliability to answer the question "Would the same score have been obtained if a different person had scored the instrument or if the same person had scored the instrument at another time?"

Golafshani: (2003) argues that the concept of reliability is even misleading in qualitative research. If a qualitative study is discussed with reliability as a criterion, the consequence is rather that the study is no good.

### 3.3.3 Rating System

The rating scale used in this study was the Likert scale. This method of measuring attitudes is widely used to indicate agreement or disagreement and the strength of agreement and disagreement with a statement. The Likert scale normally uses a 5 or 7 point scale, with the 5 point scale being the most common. For this study, a 5-point scale was used to indicate level of agreement such as “STRONGLY DISAGREE=1”, “DISAGREE=2”, “UNCERTAIN=3”, “AGREE=4”, “STRONGLY AGREE=5” (McKenna, 2006:290).
3.4 SAMPLING METHODS

A sample is a finite part of a statistical population whose properties are studied to gain information about the whole. When dealing with people, it can be defined as a set of respondents selected from a larger population for the purpose of a survey. A population is a group of individuals, persons, objects, or items from which samples are taken for measurement for example a population of presidents or professors, books or students. Even if it were possible, it is not necessary to collect data from everyone in a community in order to get valid findings. In qualitative research, only a sample of a population is selected for any given study. The study’s research objectives and the characteristics of the study population such as size and diversity determine which and how many people to select (Mugo).

3.4.1 Types of Samples

According to Byrne (2001), there are three primary kinds of samples: the convenience, the judgement sample, and the random sample. They differ in the manner in which the elementary units are chosen.

- **The convenient sample**
  
  A convenience sample results when the more convenient elementary units are chosen from a population for observation.

- **The judgement sample**
  
  A judgement sample is obtained according to the discretion of someone who is familiar with the relevant characteristics of the population.

- **The random sample**
  
  This may be the most important type of sample. A random sample allows a known probability that each elementary unit will be chosen. For this reason, it is sometimes referred to as a probability sample. This is the type of sampling that is used in lotteries and raffles.

Choosing a study sample is an important step in any research project since it is rarely practical, efficient or ethical to study whole populations. The aim of all
quantitative sampling approaches is to draw a representative sample from the population, so that the results of studying the sample can then be generalized back to the population (Marshall: 1996).

The sampling method used for this study is convenient sampling where the Port Elizabeth Enforcement Audit office was chosen out of all the enforcement audit offices around South Africa.

When this study was conducted, the aim of the researcher was to sample every staff member working in the Port Elizabeth Enforcement Audit office but due to operational reasons, such as staff members working outside the business premises on field audits, only 80.6 percent of the audit staff members were present when the survey was conducted.

**Conclusion**

In this chapter, the research methodology was described in detail and a brief discussion on the sub-scales used in the tool measuring motivation, and its relevance to this research.
CHAPTER 4
ANALYSIS AND INTERPRETATION OF THE EMPIRICAL STUDY RESULTS

4.1 INTRODUCTION

In this chapter the results of the research will be presented, discussed and interpreted according to the research objectives. Pie charts have been used to analyse the job function and length of service of the respondents at SARS. Bar graphs have been used to analyse the closed ended statements in the first section of the questionnaire and Tables were used to analyse data from the second section data from the questionnaire.

4.2 QUESTIONNAIRE COLLECTION PROCESS

The questionnaires were distributed to all Port Elizabeth enforcement audit staff members who are involved in the audit process, as discussed in Chapter 3. A total of 36 questionnaires were distributed to the audit staff. The questionnaires were distributed and interviews were conducted with the respondents who were available in the office. However, due to the nature of the audit work the researcher could not conduct interviews with all respondents because of their schedule. A period of one week was allowed for the completion of the questionnaire, to ensure that the questionnaires would not be forgotten in the midst of pressing official business. Of the 36 questionnaires distributed, a total of 29 completed questionnaires were returned, giving a response rate of 80.5%.

4.2.1 CLOSED QUESTIONS

The scale used in the questionnaire was 1 to 5 where “1 = Strongly disagree”; “2 = Disagree”; “3 = Uncertain”; “4 = Agree” and “5 = strongly agree”. There were questions which were negatively worded and a special attention was given to the question by making sure that the scale was reversed when scoring those questions.
4.3 DEMOGRAPHIC DATA.

4.3.1 JOB FUNCTION

The PE enforcement audit business unit consist of different job functions that form part of the audit process. The audit process involves team members up to regional business area manager.

The respondents included Business Area Managers 10%, Team Leaders 14% and Team Members 76% as seen above in Figure 4.1. It should be noted that Graduate Trainees are included under the Team Member job function. The high number of team members who took part in this study is satisfactory as the people that are mainly and directly involved in the audit process are the team members, therefore they are the ones who can give a better perspective on whether the process is effective or needs improvement. According to Bhatia and Drew (2007), it is important to understand the effect and gaining ‘buy-in’ of the individuals who are involved with the process.
4.3.2 Length of service

Respondents’ length of service was grouped into year categories. As seen in Figure 4.2, the majority of the respondents had worked in audit for more than 11 years. The rest of the respondents have been working for less than 11 years and it should be noted that the 0 to 5 years category included graduate trainees who are on a two years employment. 52.0%, or More than half of the respondents have worked for SARS for more than 11 years and the rest are divided in half with 24% at 0 to 5 years and another 24% at 5 to 10 years. These results can be interpreted as more than half of the audit staff have been working in audit for more than 11 years meaning that they have developed a certain way of working. The above is important when it comes to effecting change as it is difficult to introduce changes to people who have been doing the same thing for years. This could be a potential problem when implementing Lean because Lean focuses on the culture change and changing the way people think.
4.4 FIRST SECTION OF QUESTIONNAIRE

4.4.1 Process Improvement

In question one, the respondents were asked if they feel responsible for their work place and equipment. As seen in Figure 4.3 51% of the respondents answered that they feel responsible for their work place and only 8% did not feel responsible for their work place and equipment. How they possibly read this question was based on the fact that managers are measured on asset management of their team members assets therefore team members are required to report on a monthly basis on the assets in their offices. Based on the above the respondents are responsible for their work place and equipment under their care.
In question two the respondents were asked, if changing the way they work, performance will improve. As seen in Figure 4.4 55% strongly agreed and only 7% disagreed. When the researcher engaged with the respondents regarding this question, more than half of the respondents say that SARS does not involve those who are directly affected when new changes are made. As discussed in chapter 2, continuous improvement depends on employees suggesting changes.

In question three of Process Improvement as seen in Figure 4.5, the respondents were asked if they know what causes delays in the audit process. 66% of the respondents agreed that they know what causes delays in the audit process and only 3% disagreed. The respondents know the current audit process well, they can add value if they are encouraged to contribute ideas to improving the process.
Question four asked if there are clear visual displays highlighting possible deviations from procedure and work instructions. As seen in Figure 4.6, 38% of the respondents agreed whilst 31% did not agree and 13% not certain, when the researcher walked around the audit floor there visual boards in team leaders’ offices. However, most of the information was outdated and some not relevant, see Picture 1 below. The results can thus be confusing as stated before that the researcher could not interview or explain the questionnaire to all the respondents due to their busy schedules. There is a possibility that this question was not understood by most of the respondents.

Figure 4.6 Respondents results on Process Improvement question 4.
In question 5 the respondents were asked if the organisation considers it important to continually improve its processes through identifying and solving problems. As seen in Figure 4.7, 48% of the respondents agreed, whilst only 13% of the respondents that didn’t agree. Based on the answers given by the respondents on other questions under this topic it is evident that most of the respondents do not feel like SARS encourages them to contribute to come up with suggestions and ideas.

4.4.2 Team Work

Question 6 asked if team members are aware of their roles and responsibilities within a team. As seen in Figure 4.8, 51% of the respondents agreed with the statement followed by 24% that strongly agreed that team members are aware of
their role and responsibilities within their teams however 21% did not agree. Most of the respondents say SARS is a Key Performance Indicators (KPI) driven organisation, these indicators do not encourage team work but individual achievement.

![Team work](image)

Figure 4.9 Respondents results on Team Work question 7 of questionnaire

In question a statement that teams regularly review and discuss their performance and share ideas. 59% of the respondents agreed with the statement followed by 17% that strongly agreed that team members are aware of their role and responsibilities within their teams however 21% did not agree. Highly effective teams work together and grow together. It is important that SARS understand that teams are only effective if they work together towards a goal.
Question eight refers to team Leaders or Managers facilitate problem solving session when problems have been identified. As seen in Figure 4.10, 62% of the respondents agreed with the statement whilst 31% that were not certain and only 7% disagreed with the statement. Respondents say because of the current ineffective process team leaders are not equipped to handle problems instead they are encouraged to escalate them to the next management level who also does the same therefore problems never get resolved.

Statement nine refers to the organisation’s various teams are aligned and work together towards a common goal. As seen in Figure 4.11, 38% were uncertain whilst another 38% of the respondents disagreed with the statement and only 24% agreed.
with the statement. The general feeling when this was analysed and from engaging with respondents was that the overall Enforcement audit teams don’t work together and are not aligned to the overall goals of the organisation. The respondents mentioned that the reason for this could be the high targets that do not allow time for collaborative work.

![Team work](image)

Figure 4.12 Respondents results on Team Work question 10 of questionnaire

Question ten asked if team members regularly come up with ideas to improve audit procedures. As seen in Figure 4.12, only 41% agreed with the statement and only 20% of the respondents disagreed. Respondents say their suggestions or ideas do not count. Highly empowered teams that can make decisions on-the-spot, can help organizations to reach their goals quicker.
4.4.3 Wastes

Figure 4.13 Respondents results on Wastes Work question 11 of questionnaire

Statement eleven refers to team members spending time working on reworks that is audits that had errors in them and were therefore sent back to the team member to fix the errors. As seen in Figure 4.13, 55% of the respondents agreed with this statement whilst 31% disagreed and only 14% were uncertain.

Figure 4.14 Respondents results on Wastes Work question 12 of questionnaire

Statement number twelve refers to SARS having specific housekeeping standards and targets. As seen in Figure 4.14, 69% of the respondents agreed with the statement compared to the 20% of respondents who do not agree and 11% were not certain. The respondents responses were confusing because according to the
pictures taken during this study of the audit staff’s offices it would appear that SARS does not seem to have any housekeeping standards or the audit staff does not adhere to the housekeeping standards if SARS has any, see Picture2 to Picture5 below:

![Picture2: File rack in Auditor’s office](image1)
![Picture3: Auditor’s desk](image2)
![Picture4: Auditor’s desk](image3)
![Picture5: Pile of files in Auditors’s office](image4)

**Figure 4.15 Respondents results on Wastes Work question 13 of questionnaire**

This question refers to team members often sit waiting for the next step of the audit process or team leader’s approval before moving to the next step of the process,
44% of respondents agree compared to only 28% that disagrees and the 24% that were uncertain. This question too seemed to have confused the respondents, however many of them agreed that the audit process and the standard operating procedures allow this waiting as it is part of the standard procedure to wait for someone’s approval before moving to the next step.

Figure 4.16 Respondents results on Wastes Work question 14 of questionnaire

Statement number 14 refers to team members working on a number of cases as the same time this resulting finding it hard to finalise the audits, 48% agreed to this statement compared to the 24% that did not agree and the other 24% that were uncertain. The reason for this could also be the reason mentioned in the previous question, regarding the Audit Standard Operating Procedures.

Figure 4.17 Respondents results on Wastes Work question 15 of questionnaire
Statement number 15 refers to the time spent by auditors walking from their offices to their team leader’s office to drop off and collect audit files. 52% of respondents agreed whilst 31% disagreed and 14% were not certain. The reason for this is that team leaders do not sit with their team members, they sit on different floors of the building.

When the researcher interviewed some of the respondents mentioned the bulk printing where about 7 or 8 staff members print. They mentioned that one can spend about half of an hour trying to print a two page document, because the printer is few offices away and it is shared by many staff members.

4.4.4 Quality Control

![Quality Control Chart](image)

Figure 4.18 Respondents results on Quality Control question 16 of questionnaire

When the respondents were asked if they have time to quality check their work due to high number of audits they are required to complete as a result they rely on their team leaders to quality check their work. As seen in Figure 4.18, 65% of respondents agreed with the statement compared to 21% that disagreed and the 10% that were not certain. In the current audit process quality checks are done by a team after the audit has been completed.
In question seventeen the respondents were asked if they are constantly looking to identify problems when performing a function in the audit process. As seen in Figure 4.19 79% of the respondents agreed with this statement compared to the 17% of the respondents who did not agree with the statement and only 3% that was uncertain.

In question eighteen the respondents were asked whether solutions and corrective actions are implemented effectively and timeously. As seen in Figure 4.20 45% did not agree with this statement compared to the 31% that agreed and the 24% that were uncertain.
Figure 4.21 Respondents results on Quality Control question 19 of questionnaire

This question refers to audit staff members being allowed to contribute to improving procedures and work instructions. As seen in Figure 4.21, 45% disagreed with the statement whilst only 28% agreed and another 28% were uncertain.

Figure 4.22 Respondents results on Quality Control question 20 of questionnaire

The last statement refers to audit staff members ensure that their work is correct the first time and is not get sent back for rework. As seen in Figure 4.22, 80% of the respondents agreed with the statement compared to the 17% that did not agree and the 3% that was uncertain.
4.5 ANALYSIS OF SECOND SECTION OF QUESTIONNAIRE

The second section of the questionnaire is open ended questions that asked the respondents to comment on the four Lean topics covered earlier. The responses yielded rich data which described, in respondents’ own words, what they thought about the different topics. The data obtained was grouped into themes under the different topics covered for analysis and are summarised in Tables below:

4.5.1 Process Improvement

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Theme</th>
<th>No. of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2,C3,C8,C13,C14,C15,C16,C20 ,C26,C27,C29</td>
<td>It will help to improve overall audit's performance</td>
<td>11</td>
</tr>
<tr>
<td>C3,C10,C14,C15 ,C17</td>
<td>It will help to reduce wastes in the audit process</td>
<td>5</td>
</tr>
<tr>
<td>C3,C10,C11,C12 ,C15,C17,C29</td>
<td>Improve quality of work</td>
<td>7</td>
</tr>
<tr>
<td>C6, C12</td>
<td>Help to eliminate processes that do not add value and outdate audit processes</td>
<td>2</td>
</tr>
<tr>
<td>C8,C10,C12,C13 ,C15,C16,C17,C19,C23,C27,C28</td>
<td>Increase audit's effectiveness and efficiency</td>
<td>11</td>
</tr>
<tr>
<td>C11,C23,C28</td>
<td>Job satisfaction due to continually improving processes</td>
<td>2</td>
</tr>
<tr>
<td>C13,C16,C27</td>
<td>Innovative and flexible process that keeps up with new demands</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 4.1 Process Improvement Themes: n=16, Source: researcher’s own questionnaire

The themes with the highest number of respondents are: Process Improvement improves the overall performance of the audit business unit and increased
effectiveness and efficiency of the audit department. This means that most of the respondents see process improvement as a driver of improved performance, effective and efficient in the audit department.

4.5.2. Team work

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Theme</th>
<th>No. of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2</td>
<td>Team work is not part of SARS values, therefore management does not see its value</td>
<td>1</td>
</tr>
<tr>
<td>C3,C8,C20,C28, C16,C27</td>
<td>Team members work individually not working as a team to achieve a common goal</td>
<td>6</td>
</tr>
<tr>
<td>C10,C013,C12,C14</td>
<td>Performance management system does not encourage team work it encourages individual work as it rewards individuals, Auditors are not willing to assist others because of KPI</td>
<td>2</td>
</tr>
<tr>
<td>C11,C20</td>
<td>No growth, development and mentoring</td>
<td>2</td>
</tr>
<tr>
<td>C14</td>
<td>Constant restructuring of teams does not allow teams to work effectively</td>
<td>1</td>
</tr>
<tr>
<td>C15</td>
<td>No time to solve problems as a team rather problems are escalated to managers even the ones that can be solved by individuals.</td>
<td>1</td>
</tr>
<tr>
<td>C22,C23,C11</td>
<td>No mixed teams, new auditors with experienced auditors for skills transfer and knowledge sharing.</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4.2 Team Work Themes: n=16, Source: researcher’s own questionnaire
As seen in Figure 4.2, 38% out of the 16 respondents that took part in this section of the questionnaire feel that team members work individually not as a team to achieve a common goal. This means that as much as teams are part of the organizational structure the functioning of the teams is not in line with what Miller (2005:2) describes as a team based organization is comprised of high performance business teams. They are high performing because they know that they are responsible for the results of their process and they have the satisfaction of knowing that they are empowered to make decisions about their own work.

4.5.3 Wastes

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Theme</th>
<th>No. of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2,C10,C15,C16,C20,C22,C23,C27,C28,C29</td>
<td>Duplication of work in the audit process e.g printing information that is already in the system</td>
<td>10</td>
</tr>
<tr>
<td>C3,C13</td>
<td>Team members compiling reports of their performance stats which team leaders can access from system</td>
<td>2</td>
</tr>
<tr>
<td>C4</td>
<td>Telephone engagements with taxpayers are a waste of time because source documents cannot be verified</td>
<td>1</td>
</tr>
<tr>
<td>C6,C29</td>
<td>Standard operating procedures, some procedures don’t makes sense and therefore do not add value</td>
<td>2</td>
</tr>
<tr>
<td>C10,C15,C20,C22,C23,C26,C27</td>
<td>Printing of information of documents from the system, wasting paper</td>
<td>8</td>
</tr>
<tr>
<td>C11,C15,C16,C22,C23,C26</td>
<td>Audit programs and SOPs too many steps and duplication and no value adding</td>
<td>7</td>
</tr>
</tbody>
</table>
When the respondents were asked to briefly identify wastes in the current audit process, as seen in Table 4.3, 43% of the respondents highlighted that the current Standard Operating Procedures (SOP) have too many steps and some of the steps are duplicated like printing information from internal systems that every employee has access to. Furthermore they highlighted that end of line does not add value because they spend time working on reworks when the audit has already been finalised.
### 4.5.4 Quality Control

<table>
<thead>
<tr>
<th>Questionnaires</th>
<th>Theme</th>
<th>No. of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2,C3,C4,C15, C23,C29, C19,C26</td>
<td>The current quality control does not improve quality or encourage auditors to produce high quality of work. No, no feedback given on errors therefore same errors are made every time</td>
<td>8</td>
</tr>
<tr>
<td>C4,C27,C22</td>
<td>Should be in line not END of line</td>
<td>3</td>
</tr>
<tr>
<td>C12, C1,C12</td>
<td>Team leaders overlook errors when reviewing audit files and end of line inspectors only pick up errors when the case is finalised. Team leaders should take responsibility of quality checking</td>
<td>3</td>
</tr>
<tr>
<td>C14</td>
<td>It should be applied at planning stage not at the end of an audit</td>
<td>1</td>
</tr>
<tr>
<td>C13,C10,C16</td>
<td>The focus is on immaterial administrative errors. Errors are made because some audit steps are not clear</td>
<td>3</td>
</tr>
<tr>
<td>C28</td>
<td>Not Applied correctly, auditor checks, TL checks, BAM checks and EOL checks too many checks.</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4.4 Quality Control Themes: n=16: Source: researcher’s own questionnaire

When the respondents were asked if in their opinion they thought there is a need for quality control in the audit process and if they thought so did they think it was applied effectively in the current audit process. As seen in Table 4.4, most of the respondents thought that there was a need for quality control however they felt that the current quality control process is not applied effectively. The current quality
control does not improve quality or encourage auditors to produce high quality of work and no feedback given on errors therefore same errors are made every time.

4.6 SUMMARY OF FINDINGS

In summary, 29 respondents from PE Enforcement Audit participated in the study. Due to the big sample size, it was possible to generalise results to the entire population of Enforcement Audit PE. Purposive sampling was used to select enforcement audit staff members who use the audit process on a daily basis. The demographics consisted of BAMS, Team Leaders and Team Members who have worked for SARS between 1 to above 11 years. The sample consisted of three levels of audit functions: BAMS (14%), Team Leaders (10%) and Team Members (76%). All the participants could understand English and thus it was not necessary to analyse their abilities based on language factors, as English is the official language used at SARS.

The respondents highlighted the benefits process improvement and one of them is having a process that is effective and that increases audit’s overall performance. When it comes to team work the respondents highlighted that the current audit teams aren’t effective because the focus is on individual work than working together to achieve a common goal. The respondents identified wastes in the current audit process such as duplication of work, reworks, motion waste etc. The respondents also highlighted the need for quality control however thought that the way it is currently applied is not effective.
CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

In the previous chapter, the results of the empirical survey of this study were discussed. In this Chapter, the results will be used to make conclusions and recommendations, with reference to the main research problem and sub-problems, limitations of the study and recommendations for future research stemming from this study.

5.2 RESOLUTIONS TO THE FIRST SUB-PROBLEM

What lean tools does the literature reveal that Enforcement audit can use to solve the main problem?

A comprehensive literature research was carried out in order to address this sub-problem. Definitions, concepts and guidelines were studied and the core components and arguments extracted in order to indicate how some of the lean tools could be used to resolve this problem.

5.3 RESOLUTION TO THE SECOND SUB-PROBLEM

What does the literature say about adopting lean manufacturing in service industries?

A comprehensive literature research was carried out in order to address this sub-problem. Examples of companies in Service Industries were compared and the findings were discussed.

5.4 RESOLUTION TO THE THIRD SUB-PROBLEM

What is the appropriate Lean implementation strategy for Port Elizabeth Enforcement Audit?

Shah M, (May: 2010) identified the following challenges for audit to be an effective improvement and compliance tool, it must be conducted on an on-going basis. And this can be daunting for companies that rely on a paper-based or a partially
electronic system. The following are some of the biggest challenges faced by such companies:

- **Poor Communication and Scheduling:** Starting with planning and scheduling, a paper-based or hybrid process would entail face-to-face meetings and conference calls to bring together the auditors, auditees, corporate management, and others involved. Follow-up work would entail uncoordinated phone calls, e-mail, and personal reminders. Scheduling of audit-related tasks would depend on someone remembering to send assignments at certain dates. The situation may be manageable if there’s only one audit being conducted at a time and if the parties involved are 100% attentive. It can be downright problematic if there are multiple audits happening at the same time, especially if the same teams are involved in all audits. If the scenario happens several times a year, it is likely that tasks will fall through the cracks, and the company might fail some audits.

- **Inefficiency:** Most internal auditors are out in the field inspecting facilities. They might use paper forms and either paper or electronic spreadsheet to collect data. Then they enter all data in the computer as soon as they return to the office. The process is pretty straightforward if there’s only one auditor conducting one audit once a year. However, if there are several auditors working as a team, using large checklists, generating voluminous paperwork, and conducting multiple audits under tight deadlines, then the inefficiency of the process becomes a serious problem.

- **Poor Tracking:** Even when a company performs only a small number of audits annually, each audit typically results in numerous findings and related corrective or preventive actions that all need to be addressed and managed. Under a manual or hybrid system, tracking these findings and related documents, evaluating risks, verifying findings, and ensuring proper closure could mean combing through voluminous paperwork and a lot of legwork, both of which could result in delayed audits.

- **Lack of Oversight:** It is difficult to generate accurate and timely reports and trends using disparate tools (electronic spreadsheets, paper documents). Without an effective reporting tool, managers are unable to see the big picture that audit findings may reveal. When audit is not connected to other quality
processes, such as in a paper-based system, it is almost impossible to monitor the entire quality system.

The problems above can be resolved if Lean is implemented effectively using the Lean implementation strategy discussed in chapter two.

5.5 FINDINGS ACCORDING TO RESEARCH OBJECTIVES

5.5.1 Objective One: Establish how a culture of process improvement can help the audit to be more effective and efficient

- The leadership team of an organization must take responsibility for actively managing the process of improvement. The value stream map is an excellent tool for service industries. Value stream maps of the current state are the most useful tool for evaluating the state of any process. They should show all of the steps in the process and ask whether each step is valuable, capable, available, adequate, and flexible. They should also show whether value flows smoothly from one step to the next at the pull of the customer after appropriate levelling of demand (Womack: 2006)

- Standardized Operations should be utilized to minimize motion and waiting, such as a decision flow diagram. Obviously the 5S tools are also relevant, as well as root cause problem solving to eliminate the non-value adding activities. One of the best long term lean manufacturing tools to apply in a service industry is the kaizen event. Kaizen means "incremental improvement" in Japanese.

Burnett & Green-Goldsborough (2010), suggest that leaders can take the following steps to support process improvement efforts:

- **Provide visible support for process improvement efforts.** SARS senior management must make it clear to people in the organization that they strongly support process improvement efforts, both verbally and through their actions. Following an improvement event, they must lead by example and implement the new process. Actively participate in follow-up meetings after the event, recognizing the team's progress and reinforcing the importance of continued implementation. Communicate in writing and in
meetings why it is important that everyone in the organization commits to supporting and using the new process.

- **Monitor progress and hold people accountable.** Identify the metrics and information that is needed to understand how the process is performing. Request that managers and teams concisely report metrics and information on key aspects of the process. Use a bulletin board to visibly track process performance and implementation progress. Review metrics and process performance at least monthly or quarterly. Request status reports from managers. Discuss managers’ performance in supporting specific process improvement efforts during their performance reviews and as part of criteria used for compensation and promotion decisions, where appropriate.

- **Clear obstacles to successful implementation.** As new issues and challenges emerge, it is easy to lose focus on the performance and improvement of existing processes. Create time during meetings with managers and staff to discuss performance of work processes targeted by improvement efforts. Routinely walk around the office to check in with employees at their work stations and ask specific questions about how the process is working, what support is needed, and what challenges are being experienced. Work to remove barriers. Where barriers cannot be removed, work with managers to calibrate goals and strategies to optimize results.

- **Recognize and celebrate accomplishments.** The more a leader acknowledges process improvements, the more people will want to deliver them. Recognize accomplishments at staff meetings and in newsletters. Give certificates and awards to acknowledge individual and team achievements. Support events, such as parties or lunches, to celebrate reaching goals or milestones. Be generous with praise when it is deserved.

5.5.2 **Objective Two:** Establish if the enforcement audit teams are effective and productive

In chapter 4 the when the respondents were asked if the current teams are effective their unanimously agreed that their current teams are not effective because team work was lacking. In order for SARS to be a team-based organization it is important to understand that the process is an exercise not only in redefining organization, but developing new skills, new habits, a new culture. It will require motivation and
discipline. How to create effective teams, team work, and team building is a challenge in every organization. Work environments tend to foster rugged individuals working on personal goals for personal gain. Typically, reward, recognition, and pay systems single out the achievements of individual employees as pointed out by some of the respondents in Table 4.2 in Chapter 4.

Appraisal, performance management, and goal setting systems most frequently focus on individual goals and progress, not on team building. Promotions and additional authority are also bestowed on individuals. Given these factors, is it any wonder that teams and team work are an uphill battle in most organizations?

Employee involvement, teams, and employee empowerment enable people to make decisions about their work. This employee involvement, team building approach, and employee empowerment increases loyalty and fosters ownership. These resources tell you how to do team building and effectively involve people. People in every workplace talk about team building, working as a team, and my team, but few understand how to create the experience of team building or how to develop an effective team. Many view teams as the best organization design for involving all employees in creating business success and profitability. Learn how team building helps enable the success of work teams and team work

Miller, L (2009) recommends the following to be done to make teamwork happen:

- Executive leaders communicate the clear expectation that teamwork and collaboration are expected. No one completely owns a work area or process all by himself. People who own work processes and positions are open and receptive to ideas and input from others on the team.
- Executives model teamwork in their interaction with each other and the rest of the organization. They maintain teamwork even when things are going wrong and the temptation is to slip back into former team unfriendly behaviour.
- The organization members talk about and identify the value of a teamwork culture. If values are formally written and shared, teamwork is one of the key five or six.

5.5.3 Objective Three: Identify wastes in the audit process
The process map and movement will show the waste in each step of the audit process. The waiting waste which was highlighted in the previous chapter is often a huge problem in any office or service job. For example, the waste from waiting on a colleague, manager, supplier, or anyone else can be eliminated. There are ways to minimize it by removing the root cause as well as finding activities to fill the time. These activities should be of short duration, such as data entry, filing, or printing.

The 5S tool can be used to organize the surroundings in the audit environment. All materials the auditor staff uses should be organized and within reach without having leave the area. This Lean tool will enable the audit staff members to continuously utilize any material in front of them as well as keep an eye on a computer.

According to Sowards (2004), the 5S’s were developed by Toyota and are actually “S” words in Japanese. The 5S’s will help reduce waste present in every operation in both the field and office. They will help improve productivity in your operations. They can engage employees in continuous improvement.

The benefits of applying 5S to electronic and paper files go beyond just the elimination of old or obsolete documents. The very act of reviewing the files will help people figure out what’s important to the business and what has been a waste of time. In that respect, the value of 5S is more in the review than in the deleting of files (Markovitz, 2007).

**5.5.4 Objective Four:** Establish the importance of quality control in audit

The real problem with poor quality is not the poor quality information itself. It is about the costs of the waste caused by poor quality. The real business case for information is to be found in measuring the costs of poor quality information and improving processes to prevent the defective information and the wastes and costs associated with it.

- SARS should also consider introducing other lean techniques, e.g., continuous improvement and capability building in the operations environment to improve productivity and efficiency.
- Closed file reviews conducted systematically using a statistical sample to measure performance and identify areas for improvement. Findings are incorporated into training to address gaps.
- Dedicated staff across the country to compare a sample of files against quality standards. Interviews are conducted with staff after quality assessments. Action plans are created at a regional level to address findings.
- Quality is reviewed by a panel that studies and grades a selection of random cases. The panel’s findings are communicated to the examination teams who are responsible for determining the improvements needed in the future.

5.6 LIMITATIONS

Some limitations were experienced during the study, and these need to be noted in order to understand the potential generalise the study. The first limitation was time constraints that led to the researcher not properly piloting the research tool. Nonetheless the first three questionnaires handed out were used as pilot samples.

Another limitation was the small size of the sample Port Elizabeth office staff as opposed to the many audit business units nationally, which limits the researcher’s ability to generalise results, therefore, the findings are only relevant to the study site and should not be generalised to all Enforcement audit business units in South Africa.

5.7 RECOMMENDATIONS FOR FUTURE STUDY

It is recommended that a before and after lean implementation study in enforcement audit is done in order to evaluate the effectiveness of lean.

Future research should aim to refine the investigation tool used, by adopting it to the national enforcement audit offices nationally by introducing more offices in order to compare one office to another. It would also be of value to investigate whether Lean has been implemented in any of the enforcement audit business units nationally.
5.8 CONCLUSION

This report was toward investigating how Lean tools, as used by the manufacturing firms, can be used to improve efficiency, the embedding of a continuous improvement culture in the SARS Port Elizabeth Enforcement. The three sub-problems were solved as follows:

The likelihood of successful and lasting change is directly related to the degree to which that change is practiced at the top, expected below, and reinforced from the top down. If senior managers who initiate change processes understood this, they would save a great deal of wasted energy. To expect change to be initiated at a low level, in a narrow area, and to expect that change to succeed over time, is entirely unrealistic and defies the law of nature. It rarely happens. Nor does it happen that the culture of the organization will change based on words alone, without the support of clear deeds. The essence of leadership is to be serve as a model, to do what you ask of others, and this is never truer than when trying to change the culture of an organization (Miller:2005).
REFERENCE LIST


Evan, J.R & Lindsay, W.M. 2005. The Management and Control of Quality. 6th ed. Australia: Thomson, South-Western


Annexure 1.1 Questionnaire used for the survey study

<table>
<thead>
<tr>
<th>Job function</th>
<th>Length of service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Area Manager</td>
<td>0 – 5yrs</td>
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<tr>
<td>Team Leader</td>
<td>6- 10yrs</td>
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<tr>
<td>Team member</td>
<td>&gt; 11</td>
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</table>

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<td>Process Improvement</td>
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<tr>
<td>1. I feel responsible for my work place and equipment</td>
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<td>2. If we change the way we work, performance will improve.</td>
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<td>3. I know what causes delays or disrupts work</td>
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<td>4. There are clear visual displays in my work area highlighting possible deviations from procedure and work instructions</td>
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<td>5. It is considered important in the organisation to continuously improve through identifying and solving problems.</td>
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<td>Team work</td>
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<td>6. My current team members are aware of their roles and responsibilities within the team</td>
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<td>7. My team regularly reviews and discuss performance and share ideas.</td>
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<td>8. My Team leader/Manager facilitates problem solving sessions when problems have been identified</td>
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<td>9. The organisation’s various teams are aligned and work together towards a common goal</td>
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<td>10. My team regularly comes up with possible ideas to improve procedures or work instructions.</td>
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<tr>
<td>Wastes</td>
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<td>11. I spend time working on cases that have been sent back for rework.</td>
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<td>12. The organisation has specific housekeeping standards and targets.</td>
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<td>13. I often sit waiting for the next step of the process or waiting for team leader’s approval in order to move to the next step</td>
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<td>14. I have a lot of cases that I’m auditing simultaneously and therefore find it hard to finalise audits.</td>
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<td>15. I spend time walking from my office to my team leader’s office to fetch or drop off audit files.</td>
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<td>Quality control</td>
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<td>16. My work is of the nature that I don’t have time to quality check my own work as a result I rely on others to quality check my work.</td>
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<td>17. I constantly look to identify problems or concerns when performing my job function.</td>
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<td>18. Solutions and corrective actions are implemented effectively and timeously</td>
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<td>19. I am allowed to contribute to improving procedures and work instructions</td>
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<td>20. I ensure that my work is correct the first time.</td>
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Dear Respondent

I am a post-graduate student studying towards my MBA (Masters in Business Administration) at the Nelson Mandela Metropolitan University Business School. I am doing my project on Lean. I want to conduct a study to improve the current Enforcement Audit process in SARS. The aim of this exercise is to identify wastes, eliminate all the wasteful steps to create a leaner and smoother process flow. For this exercise, waste will be defined as any activity which uses resources but does not create value, or anything other than the minimum amount of equipment, materials, space and time which are absolutely necessary to add value to the product.

We believe that this study would make a contribution to increasing the productivity and improve the overall audit process. The empirical results of the study will be made available to the participants on request.

We guarantee the confidentiality and anonymity of all participants. The names of participants and will be known only to the researchers of this study and will not be divulged to anyone else. You also have the right not to participate in this study should you feel that your confidentiality and anonymity would be compromised.

You are part of our selected sample of respondents whose views we seek on the above-mentioned matter. We would therefore appreciate it if you could answer a few questions in this regard, which should not take more than twenty minutes of your time. Please note that the information gathered will not be used against SARS in any way and that all your responses will be strictly confidential. We thank you in advance for your highly appreciated contribution towards this study.

There are no correct or incorrect answers. Please answer the questions as accurately as possible. For each statement, tick the option which best describes your experience. **Tick only one answer for each statement, but answer ALL QUESTIONS please.**

Thank you very much.

Student: Bantom PP

Supervisor: Professor JJ Pieterse
### Annexure 1.3 Survey results analysis

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