



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
INSTITUTE OF QUALITY AND PRODUCTIVITY
MANAGEMENT**

**EVALUATION OF THE EFFECTIVENESS OF ISO
9001:2008
QUALITY MANAGEMENT SYSTEM AND ITS
TRANSITION TO ISO 9001:2015 IN HORIZON
ADDIS TYRE COMPANY**

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JUNE, 2019

ADDIS ABABA, ETHIOPIA

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**A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES OF
ST. MARY'S UNIVERSITY IN PARTIAL FULFILLMENT FOR THE
DEGREE OF MASTERS OF SCIENCE IN QUALITY AND
PRODUCTIVITY MANAGEMENT**

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JUNE, 2019

ADDIS ABABA, ETHIOPIA

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of my Advisor Mr. Matias Taye. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as university advisor.

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ACKNOWLEDGEMENTS

First of all, I would like to thank the Almighty God for being with me in every step of my life.

My particular gratitude and appreciation goes to my wife Frehiwot Muluneh for her strong support, both materially and morally.

I am extremely grateful to Ato Mesai Girma (director, institute of quality and productivity management) and my advisor, Mr. Matias Taye for their encouragement, insight, guidance and professional expertise.

Finally, I am grateful to the Horizon Addis Tyre company staff respondents especially Mr. Yohannes Melaku , for giving information and time for this study.

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ACRONYMS

EMS	Environmental Management System
ES	Ethiopian Standard
FMEA	Failure Mode Effect Analysis
HATC	Horizon Addis Tyre Company
ISO	International Organization for Standardization
PDCA	Plan, Do, Check, Act
QC	Quality Control
QM	Quality Management
QMS	Quality Management System
RBT	Risk-Based Thinking
SWOT	Strength, Weakness, Opportunities, Threats

ABSTRACT

In the quest to achieve superior performance and business results, organizations have extensively adopted models such as ISO 9001 Quality Managements Standards. Research supports that Quality Management System brings significant benefits for organizations competitiveness and success. In a world of increasing complexity and interconnection, the revised ISO 9001:2015 International Standard aims to ensure that Quality Management Systems are flexible while remaining reliable. Horizon Addis Tyre Company is the sole tyre manufacturing industry in Ethiopia with small amount (26%) local market share. To face the competitive challenges from local tyre importers and to increase its product quality, time to time different strategies came into action. The latest Horizon Addis tyre company strategy to face the competitiveness is the implementation and certification of ISO 9001 QMS as the company has been certified of the 2008 version which has expired since 2018. The aim of this research is to analyze the benefits and challenges of the implementation of ISO 9001 in Horizon Addis tyre industry. A descriptive research approach was employed using a self-administered questionnaire and unstructured interview to get primary data from employees of HATC. Thirty-five participants from different management level in the company were interviewed and ninety-five respondents participated in questionnaire survey. With respect to perceived benefits, the result revealed that better documentation, higher quality awareness of employees and increase Tyre product quality are the most important benefits that ISO 9000 QMS certification brought to HATC. The results of the study also revealed that most respondents agreed that ISO 9001:2008 certification has faced two main challenges i.e. biased internal audit and Work procedures do not comply with the ISO 9001 requirements. Finally, a theoretical (conceptual) framework mainly developed for successful transition to ISO 9001:2015 at the horizon Addis tyre company.

Keywords: *ISO 9001:2015, Quality Management Systems, improvement, tyre production, Horizon Addis tyre.*

CHAPTER ONE: INTRODUCTION

The first chapter of this study includes general background of the study; statement of the problem; objectives, significance, limitation, and delimitation of the study; definition of key terms and how the study was organized.

1.1. BACKGROUND

Quality management is critical for all organizations and involves identifying and satisfying the needs of customers who demand high quality products and services, which are the organization's duty to offer. The International Organization for Standardization (ISO) standard is one of the quality systems commonly used by most organizations to provide businesses with the capability for their processes and requirements, or to give guidance on good management practice. ISO 9001 was adopted as a tool in a grand strategy for achieving competitive advantage and providing a stepping stone on the way to effective quality management practices. ISO 9001 applies to all types of organizations, irrespective of size or what they do. It can help both product and service oriented organizations achieve standards of quality that are recognized and respected around the world.

The ISO was founded in Geneva in 1947, the original purpose of which was to provide standardization of technical specifications for products traded in the international marketplace. The ISO 9001 family of quality management system standards was first developed in 1987 and revised in 1994, 2000, 2008 and 2015.

According to Bansal & Hunter (2003), one of the strategic explanations for why firms get certified to ISO 9001 is because they may seek to 'reinforce' their present strategies thus further enhancing their competitive advantage. Another explanation can be due to marketing motivations or customer pressure (Buttle, 1997). This study seeks to explore the actual benefits and challenges the HATC gets from these certifications. HATC have implemented certain quality management and environmental standards, e.g. ISO 9001 and ISO 14001 requirements customized to the tyre industry.

The International Organization for Standardization is an international federation of standards bodies responsible for creating and maintaining international standards. It developed a series of generic quality management standards, referred to as ISO 9000 and a series of generic environmental standards, referred to as ISO 14000. This study will

explore how the company deal with the compliance to ISO 9001 and investigate the challenges and benefits of it.

The ISO certification process is lengthy and expensive (Berk&Berk, 2000); the process typically involves contracting with a consulting organization to guide the company's implementation process, which typically takes 12-18 months and a series of pre-audits by the consulting company to assess the company's readiness (Berk&Berk, 2000).

The big question is whether the implementation of the ISO standards has provided its hope for returns. The answer for some companies is yes; for others, it is no. Some companies claimed to have realized significant sales increases once the certification was awarded. Others have spent much effort, time and money to become certified but experienced no increase in overseas sales.

The effects of obtaining the ISO certification could vary from one company to another. This could be caused by several factors (Heras et al., 2001). Firstly, there are many internal and external drivers that can influence a company's performance. For example, in order to proclaim that a company's higher profitability is only and directly affected by ISO 9000 certification, there needs to be an assurance that no other variables could possibly cause the difference.

Secondly, the characteristics of the companies undergoing the ISO implementation might differ in terms of size, economic sectors and types of goods produced (Heras et al., 2011). Thirdly, the implementation of the ISO standards may only be effective in the long run. A study by (Heras et al. 2001) demonstrated that the ISO 9000 standard benefits a company several years after implementation. Many studies disclose that effective implementation of ISO 9001 standard has benefits to the organization such as improvement of management control, efficiency, productivity, and customer service (Nabavi et al., 2014). As a result of the positive perception of the performance of the standard there has been a consistent increase in the number of countries which have adopted ISO 9001 as their national quality standard.

This study aims to investigate the underlying subject – quality management system, and explore how it influences firm performance and how it has been implemented in the tyre industry. There is a vast literature that studied the effect of ISO certification on firm performance. However, a review of literature discovered that there has not been any that focused on the companies in the tyre industry. The purpose of the study is to explore the

benefits and challenges of the implementation of ISO 9001 standards in company belonging in the tyre industry, and to analyze the factors that affect the implementation of ISO standards and investigate the influence of those factors. The study will be beneficial for the organizations that are involved in the manufacturing industry and other readers that have interests in the industry by (1) providing a valuable and useful analysis for tyre and other manufacturing companies which intend to pursue the ISO certification, (2) helping HATSC to effectively and strategically adopt and utilize the ISO certification for their organizational benefits, and (3) as research of the tyre industry in this topic is not widely available in the literature, it can be used as a supplement, complement, as well as a comparison of the results of research of similar topic. Moreover, it has been confirmed that customers seek manufacturers that are ISO standard certified and registered before entering negotiations to do business.

Although implementing a QMS may appear simple at first, especially given the increasing numbers of ISO 9001 certified organizations over years there are so many barriers to overcome when taking the decision of implementation. Certification does not guarantee an effective QMS implementation, as the process brings inevitably change to the organization. Many forces acting against it create barriers, such as resistance, commitment and flexibility issues when the implemented change is not managed the best way possible.

ISO 9001 Quality Management System Standard is now transforming itself into a new brand with major changes from the earlier 2008 version. This new version was published in 2015 and known as ISO 9001:2015. The changes include more clauses and use a new concept and approach. The comparison of the changes between the old and new versions was well explained by (Cochran C, 2015). If ISO 9001:2008 emphasizes on continual improvement and customer satisfaction, ISO 9001:2015 puts more focus on risk-based thinking. Risk-based thinking, as the concept and approach added in the new version, requires organizations to identify and analyze potential risks that could arise both from inside and outside of the organizations. Thus, organizations can formulate strategies to prevent any impact of the risks and they can be expectantly more resilient and sustainable by accommodating the risks. Other changes in the new version are the consideration of the organizational stakeholders' needs, the importance of knowledge management and less emphasis on documentation (Fonseca et al, 2017).

1.2. Statement of the Problem

Horizon Addis tyre has been certified ISO 9001:2008 QMS and ISO 14001:2015 EMS and the version of ISO 9001:2008 QMS is obsolete and the certification not valid as of September 2018. But the company is struggling to maintain the certification status and to adapt their quality management to match with the latest version which can help the company to integrate it with the environmental management system.

ISO 9000 certification can deliver business benefits by making an organization be competitive in the market, but the managers of organizations should carefully design the implementation strategy. Successful businesses understand the value of an effective Quality Management System that ensures the organization is focused on meeting customer requirements and they are satisfied with the products and services that they receive.

The company is unable to design its QMS to meet the requirements of the new international standard for Quality Management Systems ISO 9001:2015, which replaces ISO 9001:2008.

The new version has been written to maintain its relevance in today's marketplace and to continue to offer organizations improved performance and business benefits.

With the 2015 version of ISO 9001 the organization can:

- Introduce an integrated approach with other management system standards
- Bring quality and continual improvement into the heart of the organization
- Increase involvement of the leadership team
- Introduce risk and opportunity management

1.3. Objectives of the Study

This research seeks to evaluate the effectiveness of current status of QMS implementation at HATC, and its transition to ISO 9001:2015 from 2008.

1.3.1. Specific objectives

- ❖ Assess the challenges and benefits of organization when implementing ISO 9001:2008
- ❖ Identify the key factors for successful transitions to ISO 9001:2015
- ❖ Learn how to implement ISO 9001:2015 in an effective and efficient manner.

1.4. Basic research questions

The investigative questions to be researched in support of the research question are as follows:

1. Does top management understand the extent to which policies and procedures are required to change in order to comply with the requirements of the Quality Management System (QMS)?
2. Is top management aware of the extent to which they may need to improve on the current infrastructure to establish process conformance to the QMS, and therefore customer requirements?
3. To what extent should employees take ownership of the system to facilitate implementation of the required changes?
4. To what extent are employee tasks required to be changed or revised in order to establish proof of process and product conformity to customer requirements?

1.6. Significance of the study

The results of this study will benefit the management of HATSC, other government manufacturing sector, private organizations and researchers. For management in private and government manufacturing sectors, the study will shed light on the importance of process-oriented quality, change management in terms of improving business process quality and process re-engineering. Once well established and operational, ISO 9001:2008

QMS will provide a basic framework for the incorporation of innovations leading to fewer nonconformities within and outside the organization.

To the researchers, this study will add to the growing body of knowledge on the impact and challenges of ISO 9001:2008 certification. The proposed conceptual framework will help manufacturing industries to implement successful QMS.

Practical implications: The findings of this paper provide HATC managers with a practical understanding of the factors and that are likely to obstruct ISO 9001 QMS implementation and provide better understanding to successful transition of 2015 version. Managers should overcome these barriers to achieve a successful implementation and higher QMS performance.

The theoretical relevance of this study is the development of conceptual framework for QMS implementation roadmap in assuring successful implementation of ISO 9001 in Ethiopian manufacturing industry.

Insight on the transition process which can be used as a benchmark by other organizations that will indulge in the transition.

1.7. Scope of the study

The study had been conducted on Horizon Addis Tyre Company. Heads of production and engineering department including group and shift leaders will be approached for interview. The result cannot be concluded to other company within different situations.

The reason for this is that the research will be conducted through one-to-one in-depth unstructured interviews with the quality manager, coordinators, and quality champions (the middle management people in the organizations who deal directly with issues of quality management).

The study also did not include customers and suppliers of this company. Hence interpretations should be made carefully.

1.8. Limitation of the study

There were some boundaries that had to be set as this research completion was limited to a specified time frame and also there were some obstacles faced during data collection that affected the outcome of the research. Some of them are as below

- Response to interview depended on individual's perception on challenges of ISO 9001 implementation and some who involved in the implementation were now not contactable.

- Hesitant to give information worrying about the reputation of the company and were reluctant to reveal the barriers of senior managers.
- The study also focused only on the perceptions of management and did not explore the perception of employees, those who actually implement QMS.

1.9. Definitions of key terms

- ✓ **ISO 9001:** This is the international standard that specifies requirements for a quality management system.
- ✓ **Quality Management Systems:** “Quality management system constitutes a formal record of an organization’s methods of managing the quality of its products or services” (Beckford, 2002).
- ✓ **Strategic Quality Management:** “Strategic quality management (SQM) is the formulation and deployment of quality management within the overall framework of strategic planning, in a way that is aligned with all the other initiatives such as process re-engineering, cost management, inventory control and target analysis” (Srinidhi, 1998)
- ✓ **ISO 9001:2015:** is the requirement for Quality Management System.
- ✓ **Stakeholders:** are all peoples who can affect and be affected by the case company
- ✓ **Change Management:** “When the organization decide to alter the present mode of business activities into a new one style or model to cope with rapid changes of the business world, but keep in mind the profit maximization factor” (Hashim, 2013)

CHAPTER TWO: LITERATURE REVIEW

This chapter examines various studies done on the field of ISO certification. It gives a critical view of the aspects of ISO, benefits and challenges of ISO certification in various settings. It will also address the gaps in the studies that prompt the study of ISO certification at HATC.

2.1. The main aim of ISO 9001

ISO 9001 is the standard (title of the document) that outlines all the requirements the company has to make in their quality system. What is important ISO 9001 is being the only ISO standard that requires certification. Another important fact is that the standard ISO 9001 does not define the actual quality of a given product or service. This is the standard that helps the enterprise to achieve consistent results and continually improve the process. The norm ISO 9001 is the example of the Quality Management System, which simply can be described as the set of different policies, processes and procedures required for planning and production in the given company. The concept of QMS is quite clear and is shown on the below chart.

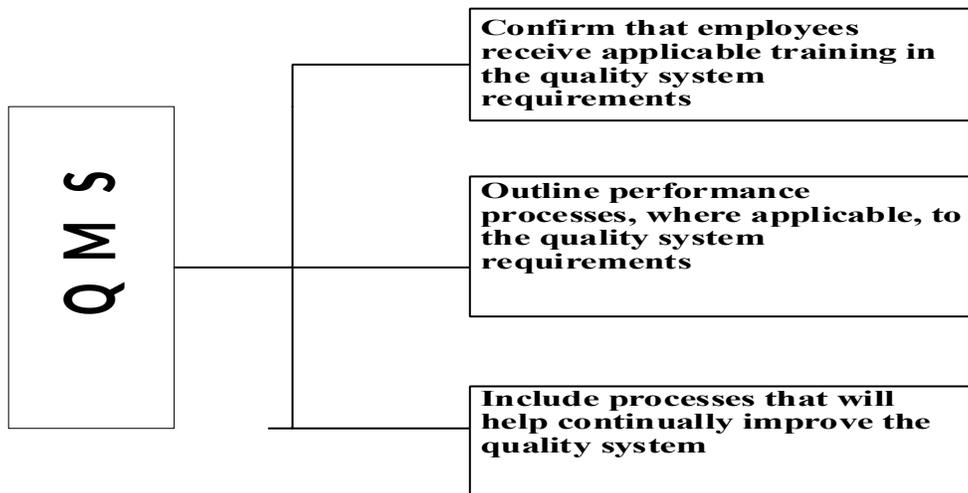


Figure 2.1: Concepts of QMS

ISO 9001 is important for the company because it can provide maximum benefit:

- Having the certification will help the company get new customers
- By ISO 9001 the present clients will get exactly what they want- so that their requirements will be met
- The QMS will improve the level of production in the enterprise

- The QMS will improve efficiency, reduce waste and save money in every business where it will be implemented

ISO 9001 is quite flexible; in some aspects it does not specify exactly what an organization must do in case to implement it. The standard allows the company to customize it to ensure its individual success, instead of blindly following the standard. The enterprise must figure out the best way to meet the requirements. At first the company has to determine what is most important for its success and build the Quality Management System around this fields which were taken as the most valuable. Then there is the need to identify the risks and opportunities the standard can bring. Most companies can achieve to get a certification within 3 to 6 months depending in the size of enterprise and its complexity. The figure below presents some steps that has to be done to implement ISO 9001.

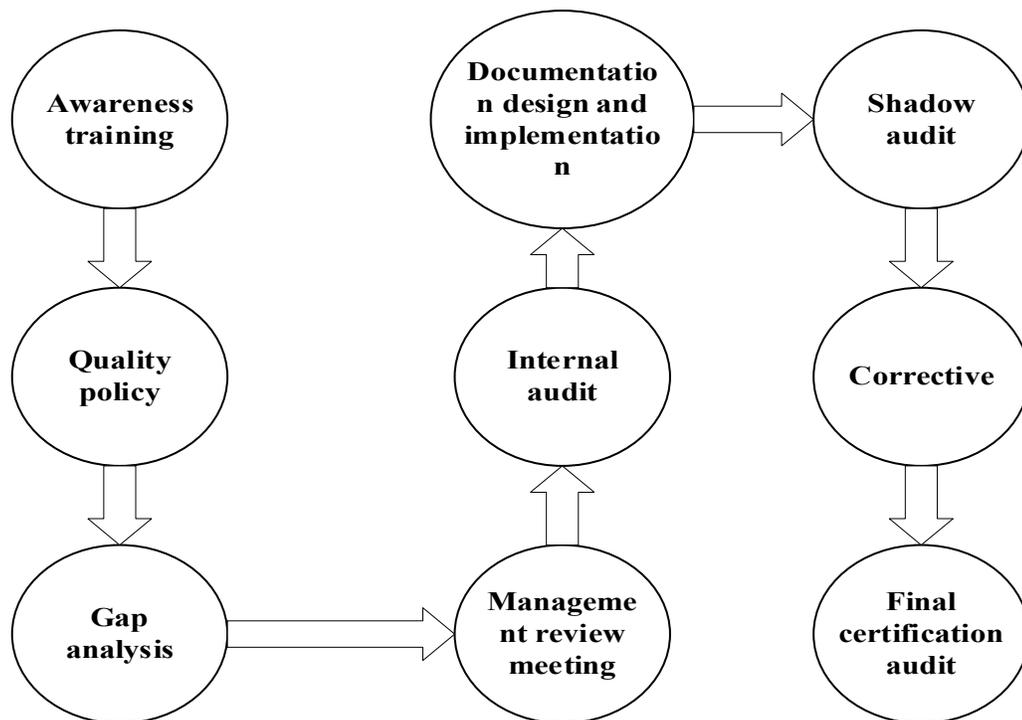


Figure 2.2: Steps in implementation of ISO 9001

2.1.1. Overview of ISO 9001:2008 and its principles

ISO 9001:2000 has been developed by the International Organization for Standardization (ISO) and is the accepted international standard for quality (ISO, 2015a). The implementation of the ISO quality standard ISO 9001:2000 is influenced by the objectives,

the services provided, the processes employed and the structure and size of the organization. This process approach is used to enhance customer satisfaction by meeting customer requirements (ISO, 2015a). Such an approach emphasizes the importance of understanding and meeting requirements, the need to consider processes in terms of added value, obtaining results of process performance and effectiveness, processes based on objective measurement with continual improvement.

The ISO (2015b) states that the ISO 9001:2015 code of practice has eight quality management principles. The first principle is leadership which establishes the direction, unity of purpose and supportive work environment within an organization. The internal environment must be maintained so that people can become fully involved in achieving the organization's objectives. The second principle is customer focus which states that organizations should understand the current and future needs and expectations of the customers and strive to exceed customer expectations.

The Process approach principle states that a desired result is achieved more efficiently when activities and related resources are managed as a process. The fourth principle, the Systems approach to management principle deals with identifying, understanding and managing interrelated processes contributing to the organization's effectiveness and efficiency in achieving its objectives. Involvement of people ensures that all employees at all levels are able to use their abilities fully for the institution's benefit.

Factual approach to decision making principle acknowledges that sound decisions should be based on the analysis of factual data and information. The seventh principle, mutually beneficial supplier relationships enhances the ability of both the organization and its suppliers to create value. Synergy can be found in mutually beneficial supplier relationships. Finally, the principle of continuous improvement states that there should be a permanent institutional objective recognizing and acting on the fact that no process is so good that further improvement is impossible.

2.2. Theoretical literature review

The signaling theory applied at the case of quality management standard suggests that ISO 9001 certification can signal to market some unobserved ability of the companies. Compliance to ISO 9001 requirements can signal to less informed part (e.g. remote customers) commitment to quality and the ability of company to meet stakeholder

expectations. If ISO 9001 certification facilitates the distinction between high and low quality companies, then certified companies can more easily access to new markets (Clougherty&Grajek, 2008) or grow faster (Terlaak& King, 2006).

As shown in the above paragraph, the market is in separating equilibrium if certification is valuable high quality, but not for the low quality companies. That means that holding the benefits of ISO 9001 constant, the total cost of ISO certification has to be lower for high skilled and quality companies, then for low quality low skilled companies. If this is not the case, low quality companies can find it convenient to certify and all companies in the market would be ISO 9001 certified100. Thus, ISO 9001 can be investigated focusing the cost function of certification to test if more skilled companies are certified and less skilled are not.

However, it is difficult to observe the skills of a company and the quality of products; therefore, the current chapter adopts another strategy. Instead of focusing on the cost of ISO 9001 certification and the skills of companies, the study focuses on the benefits of the certification considering that the signaling effect should be more important in case it is more difficult to detect the attributes of the ability of the company. Thus, *ceteris paribus*, ISO 9001 certification should be more likely when customers have more difficulties to assess the attributes of the company or the market is more opaque. For example, *ceteris paribus*, it is easier to gather information and assess the ability of closer company than a more remote company. Therefore, companies active on the international market should be more likely to certify than a comparable company active in local market.

2.3. QMS implementation motivation

Many researchers have studied the factors that motivate organizations to implement QMS and ISO certification was found to be one of the key motivation factors (Singels et al.2001). In their study, (Leedy et al. 2005) found that organizations take different efforts in implementation of QMS requirements as they might have different emphasis and motivations. (Amponsah et al, 2008) studied US manufacturers and found that their motivation to implement QMS was to achieve standardization of organizational processes to improve the quality of products and internal processes that would enhance customer satisfaction levels and reduction in costs associated with quality.

The focus on implementation factors is essential because the complete benefits of ISO 9001 can be experienced by an organization only after it has established the appropriate

conditions for its implementation and sustenance (Huo et al., 2014). Prior work has focused on the identification of factors influencing effective implementation (Psomas et al., 2010), and evaluation of factors that impact organizations which plan to implement ISO 9001 (Augustyn and Pheby, 2000; Lin and Jang, 2008).

Due to such varying motivation factors, Leung et al. (1999) classified them into internal driven motivation factors and external driven motivation factors, which were also called as non-customer driven and customer driven motivations respectively.

Internally motivated organizations, that implement QMS for achieving internal benefits, achieve higher levels of organizational performance than externally motivated organizations, which seek certification due to external pressure (Singels et al., (2001). This was also proved from the research conducted by Gotzamani&Tsiotras (2002) which concluded that those motivated by internal factors gain more overall benefits from an effective QMS than those motivated by external factors. However, the long-term effectiveness of QMS depends on overall efforts and commitment of people within the organization in achieving quality improvements. Thus, to ensure that QMS is successful and maximum benefits are achieved, an organization must ensure that QMS performance is regularly monitored for making improvements through total commitment of its employees. In an extensive literature study carried out by Kim et al. (2011) motivational factors responsible for QMS implementation were classified as quality related, operations related, competitiveness related, external pressure related and organizational image related factors. We believe that, all organizations looking to implement QMS must verify if QMS implementation has successfully achieved their motivations for seeking it. This is especially true for small and medium business.

2.4. Benefits and challenges of ISO certification

ISO 9001 designs a framework of requirements of quality management for an organization, which will ensure customers get consistent, good quality products and services (Tummala& Tang, 1996). Brown et al. (1998) also reported that the ISO standards do not only contribute to improvements in the quality of the products and services, but also improvements in quality awareness and improved management control. ISO 9001 can also contribute towards customer satisfaction (Low & Omar, 1997). Gotzamani&Tsiotras (2001) added that improvements in company performance, particularly in complaints

handling and processing for the quality improvement of products and/or services, are vital for customer satisfaction.

A 24 step QMS development program proposed by S. Aniyani (2002) was used to implement QMS at a large manufacturing company. The implementation was aimed at achieving both organizational benefits as well as ISO certification. The case study concluded that organization achieved several benefits from successful implementation of QMS. The highlight of this study was the strong commitment from the top management of the company to provide necessary resources for successful implementation that was eventually achieved.

Beattle (2003) examined the issue of ISO 9001 certification and its perceived benefits for Singapore based companies. Using an empirical approach, the paper sort to ascertain if certification had indeed improved the performance for listed and non-listed companies.

The results from a survey of 146 firms suggested that while certification led to better overall financial performance, non-listed certified firms experienced better documentation procedures, higher perceived quality of products or services, and more effective communication among employees than listed certified firms. Some problems encountered in certification included the failures to establish adequate monitoring programs, to follow set procedures and to carry out appropriate management reviews of the new system as well as unclear authorization.

Chow-Chua, Goh and Wan (2000) studied the ISO certification on improvement of business performance and found that there was no proven link between quality certification (ISO 9001) and improved business performance. However, it was clear from the research reviewed on business performance factors, that better quality does have a consistent, positive relationship with business performance. Combining these findings led to the inference that quality certification to ISO 9001 standards is not consistently associated with having a quality assurance system that delivers improved process control, or better quality. They concluded that the National Accreditation Registrars needed to reflect on the standards of proof that they currently use to support claims for business performance improvement from the application of the ISO 9001 standards.

Heras,Dick and Casadesus(2000) using a longitudinal methodology study found that although the performance of certified companies is superior to that of 400 non-certified

firms, there is no evidence of improved performance after registration in the 400 certified firms studied. They concluded from these findings, that the superior performance of certified firms was due to firms with superior performance having a greater propensity to pursue ISO 9001 registration. They illustrated the potential dangers in inferring that ISO 9001 certification leads to superior business performance. Certification is a major investment yet the findings showed that inflated expectations of performance improvement after ISO 9001 accreditation may be unfounded.

An empirical analysis of financial impact of ISO 9000 certification in USA by Corbett, Montes, David and Kirsch (2001) found that the prescriptions contained in ISO 9000 lead to superior performance. Firms may use the certification procedure as an opportunity for process improvement. In the latter view, it is the firm's own efforts that lead to superior performance, not the standard in itself, but these efforts are triggered and guided by the ISO 9001 certification process. One firm may have the potential to be more successful than another, but this potential is turned into reality as a result of ISO 9000. Firms that do have the potential to be successful may need an external trigger to unlock that potential; ISO 9001 appears to.

Najmi and Kehoe (2000) studied the role of performance management systems in promoting quality development beyond ISO 9000 and found that many companies who had obtained certification to ISO 9001 eventually observed a diminishing business benefit and required further stimulus to their quality management efforts. This further progression beyond the requirements of ISO 9001 required a rigorous measurement of performance to ensure that the selected direction is appropriate. The research indicated that the lack of an appropriate performance measurement system is a barrier to post-ISO 9001 quality development.

Certification to ISO 9001 is objective evidence that the organization has a QMS compliant to the standard. The importance of certification, lies not in the physical certificate, but in the fact that the organization has a working QMS that is compliant to ISO9001 (Geiger et al., 1997). Possibly the most well-known of the benefits associated with Quality Management systems is that certification allows an organisation to compete worldwide. Organizations need standards to do business (Amponsah, DeCouette, Dew, Pogue & Wilson, 2008). The authors also contend that small organizations can use certification to

prove that they are in control of their own business processes. They should be considered as serious competitors (Amponsah et al., 2008).

Barrier (1994), notes that although certification does not guarantee that the product of the organization is of high quality, it at least indicates that they have documented their system and is operating it. Geiger et al. (1997), points to the importance of a strong quality inspection programme, and mention that according to the feedback from a series of interviews with top organizations, certification to ISO9001 is important, although not essential.

(Allen, et al, 2015) mention that many of the companies that currently have the certification have obtained it for only one reason: their customers required it. He points out that, although this is a valid reason, it should not under any circumstances be the only one, as there is a danger associated with this kind of thinking. The danger is that, although customer focus is one of the key aspects of the ISO 9000 system, many other principles, such as people involvement, leadership, a process approach, a systematic approach to management, a factual approach to decision-making, continual improvement, and mutually beneficial supplier relationships are equally important. The system is built on these eight principles; focusing only on one will not provide the full benefits of the system. These key principles provide a holistic synergy that enables the effective operationalization of the organization.

Ashrafi& Bashir (2011) conducted an empirical investigation into the differences between ISO 9001 standard certified and non-certified organizations in Oman. Their findings showed significant differences between the two in terms of benefits and improvement of organizational performance. However, they also revealed that organizations that are not certified but are trying to achieve high quality performance by the use of effective quality management can be successful as long as the steps taken increase the organization's sales and profits. They listed the benefits of certification as follows:

- ❖ Clear communication of quality goals by top management;
- ❖ The active involvement and commitment of employees to quality-related activities;

- ❖ The development of procedures for monitoring key indicators of customer satisfaction;
- ❖ The utilization of cross-functional teams;
- ❖ The availability of quality data (internal to the organization);
- ❖ The evaluation of employees throughout the organization based on customer satisfaction with quality of product and services;
- ❖ The emphasis of quality by top management through a well-defined quality policy;
- ❖ An open and trusting organizational structure.

2.5. Barriers to Quality Initiatives

Given that implementing ISO 9001 is intended to fix business processes inconsistencies through

Implementing a new system, it brings inevitably change to the organization. Change is an important part of business for several reasons i.e. competitiveness improvement, organizational renewal, international standards, performance maximization, innovation and technology. When an organization is experiencing change, and goes through a transformation that alters or restructures major parts of its sections, it's called an organizational change. (Zorn, Christensen & Cheney, 1999). As stated by Hiatt and Creasey (2012), in order to have a successful organizational change, a good change management is important to ensure to get the desired results. Akdeniz (2014) reported that change management is a specific approach of management by using specific technics and tools to ensure a successful change implementation, based on prosci definition of change management as a set of processes and tools used to lead the people side of change in order to attain the desired results.

When implementing change, there are always barriers that are involved, as Gill (2003) quoted, such as lack of communication, lack of top management commitment, misunderstanding of the aims and process of change and resistance.

While Ackerman-Anderson and Anderson (2010) reported that leaders and employees have to integrate personal changes related to culture, behavior and mindset in organizational

change to prevent failure, Paton and McCalman (2008) argued that one of the important successful change guarantors is a shared perception amongst people affected by change, regarding related issues and implications and a strong involvement and commitment to achieve desired outcome.

As for implementing quality initiatives in general and implementing ISO 9001 QMS in particular.

Table 1.1: Systematic literature review result of the important barriers identified by various authors.

Authors	Research method	Country and sample	Identified challenges
Glover & Siu (2000)	Case study	2 case study companies in china	<ul style="list-style-type: none"> • Poor commitment and motivation of workers • Low coordination and team work • Avoidance of responsibility • Lack of communication and biased internal audit
Al-Khalifa & Aspinwall (2000)	Questionnaire survey	143 organizations in Qatar	<ul style="list-style-type: none"> • Lack of training and biased internal audit • Top management support • Human resources • Financial resources • Time
Hesham&Magd (2007)	Questionnaire survey	70 firms in Egypt	<ul style="list-style-type: none"> • The need to change the existing system • Resistance to the standard introduction • Lack of understanding its importance • Costs and time consumption

From Table 2.1 there is literature to support the following points:

- The shortage of African countries studies, not one on those studies was carried out in Ethiopian manufacturing studies mainly tyre industry. This supports the originality of this research and adds another contribution to the field;
- Most common challenges in studies mentioned in Table 2.1 are: Top management related issues (lack of commitment and inadequate leadership), resistance of employees and biasedness in internal audit result.

- All African countries mentioned in Table 2.1 experienced human resources barriers to QMS implementation such as issues related to understanding the purpose of ISO 9001 certification, requirements of the standard in addition to lack of competence in the field.

2.6. Critical success factors to successful QMS implementation

An organization with a desire to implement QMS must adopt all the necessary requirements specified in the standard (Psomas et al., 2010). However, many research studies have found implementation of QMS to be challenging (Chow-Chua et al., 2003). Organizations might have different motivations for implementing QMS like achieving certifications. Contrary to that, researchers have also revealed several barriers and critical success factors that organizations seeking QMS implementation should consider.

Zeng et al. (2007) examined companies that adopted QMS in china and found that main barriers to effective implementation of QMS are lack of commitment to maintaining QMS, keeping high expectations from QMS results and tendency of companies to satisfy minimum requirements to achieve certification. A research conducted on QMS performance levels in Korean shipbuilding companies revealed several factors that hindered the success of QMS implementation like lack of understanding of QMS requirements among employees, partial fulfillment of QMS requirements, lack of interest in QMS from other functional areas and Failure to assign proper responsibilities and authorities related QMS maintenance (Park et al., 2007). The author also highlighted other barrier of deceitful and dishonest audit reports and other quality records. They suggested that organizations should analyze the impacts of organizational change before to boost their chances of implementing QMS successfully.

awad and Al-Najjar (2011) studied the QMS implementation barriers faced by companies in Iraq. One of the most important barrier revealed through their research was difficulty in conducting internal quality audits. Their study also revealed common misconceptions regarding QMS. Most important misconceptions that they highlighted was that QMS causes a decrease in production levels and QMS implementation requires high financial resources. Another research conducted by Magd (2008) in Egyptian manufacturing companies discovered that there was a lack of qualified personnel required for successful implementation and maintenance of QMS and inadequate training was provided to tackle quality related problems.

Garza-Reyes et al. (2015) proposed a five-stage conceptual framework for implementing a quality system or improving a quality system. The first step is QMS and business process diagnostic followed by strategic planning, selection of right models, methods & tools, QMS implementation and Evaluation of QMS and business processes. However, we believe that the framework is very complex and assumes the organization to have prior understanding of audits, quality models and quality methods. The approach might be useful for large organization rather than SME's where these limitations persist. The authors have also called for the validation of this framework before adopting it.

And no research study has been conducted on the topic in Ethiopian tyre industry. So the purpose of this case study is to highlight challenges of ISO 9001:2008 implementation faced in HATSC. The researcher expect that the findings will help the case company in particular, and Ethiopian manufacturing companies in general, willing to get ISO 9001 certification to prepare themselves properly in order to overcome obstacles that are likely to occur during the change process and furthermore, to ensure an effective QMS implementation process and improve quality management performance.

2.7. The revised standard ISO 9001:2015

To ensure ISO 9001 remains updated, simultaneously reliable, and flexible, ISO has revised the International Standard, issuing ISO 9001:2015 edition September 2015. This revision is accompanied by the most significant changes of the last 15 years, and many certified companies worldwide must now overcome obstacles and challenges in order to adapt to and successfully master these changes. Although some sections of the ISO 9001 standard have been adopted unchanged in the new version, the transition to ISO 9001:2015 requires a precise analysis and a solid preparation by organizations and auditors. They all have to deal with numerous and partially significant changes, not just in terms of content, but also in terms of layout and structure.

The risk-based-thinking approach

In the previous versions of the ISO 9001, the requirement to consider risks was already embedded “through requirements for planning review and improvement.” (ISO 9001:2015 2015, A.4). Within the revised version the risk-based thinking approach lays beneath the whole standard as an approach which is seen crucial to manage an organization successfully besides cost-benefit-ratio. It is, for instance, demonstrated in chapter

“preventive action” which requires a determination of measures in order to “eliminate the causes of potential nonconformities” and “to prevent their occurrence.” (ISO 9001:2015 2015, chapter 8.5.3).

The revised version of the ISO 9001 requires an “application of risk-based thinking” in terms of “planning and implementing quality management system processes” (ISO 9001:2015 2015, A.4) and it becomes obvious that a strong interaction among business areas within the organization takes place and any risks-based approach must be seen not in isolation, but holistically. Consequently, and in consideration that an effective quality management system acts “as a preventive tool” (ISO 9001:2015 2015, A.4) the clause on preventive action has been deleted. Preventive measures therefore are no longer mentioned as an independent requirement, but are included in the risk-based approach (ISO 9001:2015 2015, A.4.).

Actions to address risks and opportunities

Nowadays, hardly no successful organization can afford to waive target agreement processes. A consideration of organization’s future and its further proceeding with help of correct measures requires future-oriented thinking, according to the motto “good managers manage risks, poor managers manage problems” (Koubek 2015, 82.)

This thinking is part of anticipating upcoming risks, challenges or opportunities, which is in accordance to standard requirement of analysis of risks. It calls for anticipation, identification, estimation of impact and an appropriate management of risks, and is now an obligatory part of ISO 9001:2015 through amendments in Annex SL.

According to (Fonseca 2015), risk identification is the initial step in pre-emptive risk management practice. It offers opportunities, indicators and information that allows an organization to raise major risks prior they may negatively distress operations and consequently the firm.

2.7.1. Benefits of ISO 9001:2015

With the 2015 version of ISO 9001 the following benefits can be achieved:

- ❖ Introduce an integrated approach with other management system standards
- ❖ Bring quality and continual improvement into the heart of the organization
- ❖ Increase involvement of the leadership team
- ❖ Introduce risk and opportunity management

It's much less prescriptive than the 2008 version and can be used as a more agile business improvement tool. This means that companies can make it relevant to the requirements of their own organization to gain sustainable business improvements.

One of the major changes to ISO 9001 is that it brings quality management and continual improvement into the heart of an organization. This means that the new standard is an opportunity for organizations to align their strategic direction with their quality management system. The starting point of the new version of ISO9001 is to identify internal and external parties who support the QMS.

This means that it can be used to help enhance and monitor the performance of an organization.

The new version of the standard will continue to do this and provide additional value.

The new standard will:

- ✓ Help companies to become a more consistent competitor in the marketplace
- ✓ Provide better quality management that helps to meet present and identify future customer needs
- ✓ Increase efficiency that will save organizations time, money and resources
- ✓ Improve operational performance that will cut errors and improve profits
- ✓ Motivate, engage and involve staff with more efficient internal processes
- ✓ Win more high value customers, and achieve improved customer retention with better product quality
- ✓ Broaden business opportunities by demonstrating compliance

2.8. Comparison of ISO 9001:2008 and ISO 9001:2015 Quality Management Systems

Concerning ISO 9001:2015 edition, it incorporates major changes when compared with the 2008 version (Fonseca, 2015a):

- ❖ It is required that the organizations identify the external and internal issues that may impact its QMS ability to deliver its intended results. If there are changes in the context of the organization, in needs or trends, or in the relevant requirements of the relevant interested parties (those that influence the quality of their products and services), the organization's quality policy need to be reviewed, and the QMS changes should be planned and implemented;
- ❖ There is a stronger focus on process approach and intended results;

- ❖ The concepts of change and knowledge management have been introduced. Changes need to be managed both at strategic and the operational level, across the organization, and those that are necessary to ensure that products or services continue to meet their specified requirements need to be controlled. The objectives to be achieved with the changes must be defined, the positive (and negative) implications identified, and the impacts should be assessed. It should be confirmed that the necessary resources and organizational knowledge are available and that the QMS integrity is checked and assured;
- ❖ There is now “Improvement”, instead of “Continual improvement” (incremental improvement). Examples of improvement can include correction, corrective action, continual improvement, breakthrough change, innovation, and re-organization (ISO, 2015).

Organizational culture should be dynamic and renewable (Jacobs and Christe-Zeyse, 2013), but organizational change is risky and multifaceted, and its success is dependable in the external environment and the internal dynamics of organizations (Jacobs et al. 2013). ISO 9001:2015 is in line with this approach (Fonseca, 2015c), by adding a stronger open systems perspective (influence of the environment, dynamic environment, need for survival). When compared with international standard 2008 edition, more based on natural systems views (follow rules and processes).

The notable differences between the ISO 9001:2008 and the new ISO 9001:2015 standard is the overall structure in which the new standard uses a High Level Structure, introduction of a clause on context of the organization, updates to requirements such leadership, planning, support, operation, performance evaluation and improvement. Some terminologies were also altered and others omitted in the new version (BSI, 2015).

It is also required that change management is addressed in a systemic way (Maes and Hootegem, 2011) and in a controlled process (Burke, 2008), as ISO 9001:2015 prescribes it, through the effective application of the Quality Management System, including processes for improvement of the system, and the assurance of conformity to customer and applicable statutory and regulatory requirements (ISO, 2015).

The main changes introduced by the ISO 9001:2015 include (Berdowski 2016, p. 26):

- ❖ Implementation of the structure specified in Annex SL, Part 1 of the ISO / IEC;

- ❖ Redrafted for ease of use by service organizations;
- ❖ Taking into account the context of the organization and interested parties relevant to the environmental management system and their requirements (needs and expectations);
- ❖ Determination of the scope of the management system;
- ❖ The adoption of risk-based approach in the planning, implementation and operation of the system;
- ❖ Ensuring the integration of the management system requirements with the business process of organization;
- ❖ Increased involvement of top management in effective quality management throughout the company;
- ❖ A flexible approach to documentation; the organization will have greater freedom in deciding what information is documented for the appropriate and useful;
- ❖ Enhanced focus on achieving the desired results in order to increase customer satisfaction;

2.9. Factors for successful transition of ISO 9001:2008 to 2015

In order to successfully transition, organizations must strategically manage the change in their procedures and processes to meet the new requirements. According to (Hashim 2013) change management can be defined as when an organization makes the decision to modify the present model/style of business activities into a novel model/style in order to cope with rapid changes of the business world while keeping in mind the profit maximization factor. Any major organization change involves three distinct conditions: the present state which is the organization's current position; the future state which is where the leadership wants the organization to get to; and the transition state which is the set of conditions and activities that the organization must go through to move from the present to the future (Hill, 2001). The new standard requires a significant adjustment in the current Quality Management Systems in place, strategic planning on how to execute a graceful and successful transition as well as progress assessment is therefore necessary to ensure that when audited for certification the organizations are able to meet the new requirements (ISO, 2015b).

Success factors of ISO 9001 both during the certified period and post the certified period according to Moturi and Mbithi (2015) are; management commitment, continual improvement, training and sensitization, communication and people involvement. This study selected three of the five factors i.e. Training, employee involvement and communication in relation to transition state of an organization. Training is an influencing factor in the transition as it is a prerequisite to ensuring that changes such as the new structure, requirements and concepts are well understood by the parties within the organization that directly affect the effectiveness of the quality management system. Employee involvement is necessary to ensure that there is little or no resistance to change while simultaneously strengthening the potential effectiveness of the quality management systems. Lastly, communication is crucial in the transition process as it ensures there is commitment to the culture and climate, shared trust, motivation and support needed to successfully meet the requirements of the new standard.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

This section defines research methods, research instruments and research tools. It also presents the instruments and tools selected for this study. The research plan and design development is based on the context of the study.

3.1. Research design

A case study approach was adopted for this research. The case study was horizon addis tyre Company. This approach helped in obtaining detailed information on the subject of the study. (Omondi, 2008) argued that case studies excel in bringing out an understanding of complex issues or objects. As pointed out by (Leedy and Ormond ,2005), case studies are useful for investigating how individuals or programs change as a result of circumstances or interventions overtime. Therefore, the case study design approach was the most appropriate for the study on the challenges of ISO 9001:2008 implementation certification on the quality of HATC.

A qualitative descriptive survey study used in this research. It presents an opportunity to fuse both quantitative and qualitative data as a means to reconstruct the ‘what is’ of a topic. Qualitative research investigates subjective data, and focuses on the experiential state of the participants and their perceptions of a situation (Strauss and Corbin, 1990). The objective of qualitative methods is to collect data and information and gain a better understanding of the research topic. The data gathered may be unstructured, at least in their raw form, but will tend to be detailed, and hence rich in content and scope (Fellows, 1997). One of the disadvantages of the qualitative method is that it is unable to support empirical judgments; the study may therefore not support completely the empirically held notions. However, it can be employed to draw analytical conclusions (Maxwell, 1996). The advantage of this method is that it provides a greater range of insight, which improves the overall validity of the results.

The unifying purpose of this research was to identify the enablers and barriers affecting the implementation of QMS within horizon addis Tyre Company. This was achieved by assessing the current practices adopted by the company and then the gaps or areas that need to be filled were measured. The research was designed using a mixed methods approach involving the use of both quantitative and qualitative research methods.

The method of sampling combines both random and non-random categories of data. A stratified random sampling method was used to select respondents representing the company, including top management, middle management and shop floor staff. Under top management, the respondents included owners, quality managers and project managers. Middle level management included supervisors, foremen and quality advisors. Shop floor staff included the workers in workshops, plants, storage facilities and laboratories. A simple random sampling was used to select the sample size in this study: survey questionnaires were distributed to the case company.

3.2. Sampling and study population

HATC Company which has implemented and certified the ISO 9001:2008 QMS were used for the study. A total of 540 were the target populations included in the study.

For the purpose of this study, a simplified formula by (Cochran, William G, 1977) is used to calculate sample sizes. The formula is shown hereunder. Where, SS is the sample size from the total population, N is the total population and e is Margin of error = 0.07 with 93% of accuracy level.

$$SS = \frac{(Z-score)^2 * p * (1-p)}{e^2} \dots\dots\dots(1)$$

$$SS_{adjusted} = \frac{SS}{1 + \frac{(SS-1)}{population}} \dots\dots\dots(2)$$

Z-score = 1.96 for confidence level 95%

Proportion p is expected outcome. If you don't have any idea about the proportion, you can take 0.5 (Cochran, William G, 1977). This will maximize your sample. The total population of HATC is 540. Then with those given value computing the above two equations and confidence level 93% with margin of error 7% the sample size would be 144.

3.3. Data gathering method

Primary and secondary data sources were used for this research work, the researcher has been gathered questionnaires and interview for the primary data. Researchers tend to

gather this type of data when, what they want cannot be find from outside sources (Ayalewshibeshi, 1999). The questionnaire was distributed and the interview were conducted from top management, supervisor and quality management department manager. To collect primary data, the researcher distributed both structured and likert scale questions.

3.3.1. Questionnaire

Questionnaire was developed on the basis of basic questions of the study, review of literature, and ISO 9001 toolkits. The questionnaires were closed-ended and open-ended; respondents have direct involvement in QMS application in the factory. The questionnaires help to collect data from large number of respondents in different management position from top to shop floor level. Further, the questionnaires can be detailed and help to cover many subjects or issues can be easily and quickly analyzed once the field data gathering work is completed. A rating is a measured judgment of some sort. While opened-ended questionnaires were used for respondents to explain their feeling and understanding freely as much as possible based on the question rises.

The respondents were asked to mark their perception about the challenges, benefits and strategic relevance of ISO 9001 certification on a continuous five point Likert scale ranging from “strongly disagree (=1)” to “strongly agree (=5)”. A higher scale score indicates high extent of practices. Likert scale shall mainly be used in structuring the expected responses in the questionnaire. According to Hill (1995) the Likert scale is commonly found in many types of attitude-measuring research. This scale is easy to complete but does have a considerable disadvantage when bold statements are used to bias respondents’ answers. The measurement was adopted from several authors (Barney, 1986). The researcher alleviated this by not using leading questions.

The structured questionnaire consists of five sections (Appendix A)

1. Personal information
2. Motivation to implement ISO 9001
3. Strategic relevance of ISO 9001
4. Benefits of ISO 9001
5. Challenges of ISO 9001
6. Transition challenges

3.3.2 Interview

In order to triangulate the data obtained through questionnaire, a semi-structured interview was conducted with management and supervisors. For this, interview guides (a written list of open items) were prepared by the researcher and present to face to face interaction. This method was selected because it provides uniform information, which ensures the comparability of the data (Kumar, 1999). The respondents result of the interview found at (appendix B).

3.3.3. Observation

In addition to the interviews, a thorough observation of the factory's operations procedures through plant tours was carried out.

Once the ISO processes are fully implemented, the quality department is held reliable for the continuous compliance with the quality standard and for organizing regular audits. Internal audits are performed by internal departments whereby one department of an organization evaluates another department of the same organization, while external audits are performed by a qualified third-party organization, which in this case has to be an Ethiopian ISO standard.

Every staff member is pressured to achieve a certain quality level and follow the quality rules. In spite of this, employees in different departments do not experience the same level of pressure. Those who are in the quality and production departments, for example, experience more pressure to follow the strict quality regulations.

3.4. Methods of data analysis and presentation

Both qualitative and quantitative data analysis techniques were used in the study for the understanding and find out of the challenges faced and benefits obtained through implementation certification of ISO 9001 in HATC. With respect to this, (Kumar,1999) stated that employing multiple data collection instruments help the researcher to combine, strengthen and amend some of inadequacies of the data. For quantitative analysis, Minitab 14 were used, and also for qualitative analysis descriptive statistics such as frequency and percentage, were used to analyze the data obtained from questionnaire and interview by using Excel software.

Accordingly, questionnaires were used as the main data gathering instruments whereas semi-structure interview and document analysis were used to enrich the data obtained through questionnaire.

The arithmetic mean for an item measures the core image of the distribution of agreement scores that are collected on an ordinal scale. Also, since related distributions are often skewed, the mean cannot be appropriate. Two of the other three measures of location used here- median and first quartile - are preferred to the mean in such circumstances.

The second appropriate measure used here is cumulative % of respondents with score 4 or 5. The researcher has argued that this measure has at least four attributes (K. R. Sundaram et al, 2009). It is straight forward, easy to understand and to use by the case company management. The clues obtained are expected to be more meaningfully translated into action towards further improvement in those challenges the company faced.

Finally, conclusions were made regarding the challenges that HATC faced during implementation of ISO 9001 and its transition to 2015 version.

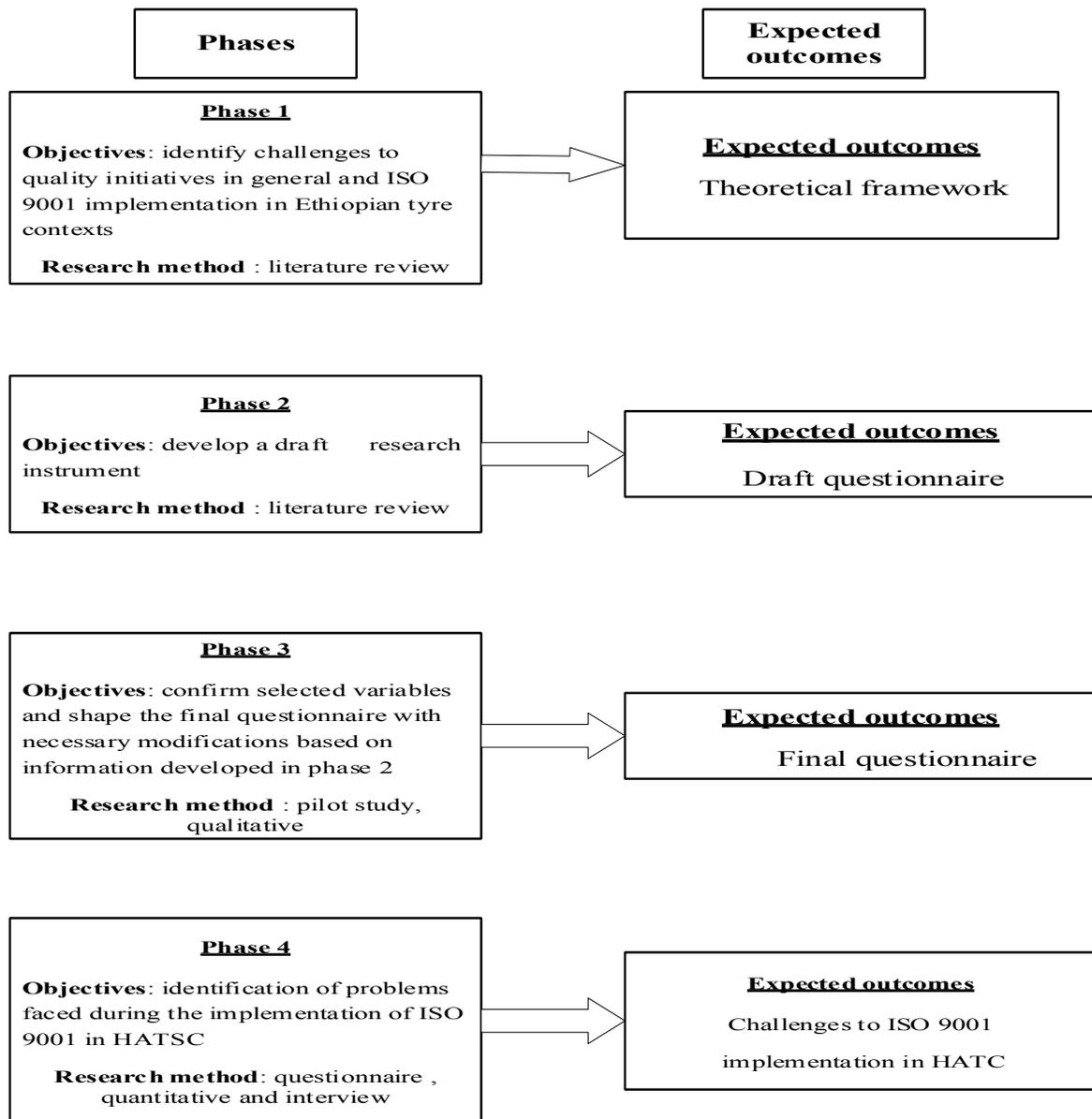


Figure 3.1: Step by step Research Approach

3.5. Response rate

Response rates are of serious concern to any research since the greater the response the more probable the research would precisely estimate the variables under investigation of a specific population sampled (Tuten, Urban, & Bosnjak, 2002). A greater response rate would not only offer better findings and the possibility to draw better inferences and analysis, but it would also strengthen the conclusion reached by the researcher based on the collected data (Yin, 2003).

Ninety-five usable questionnaires were collected from the respondent in the company, out of one hundred and forty-four questionnaires so distributed. The response rate is 66%.

Table 2.1: Purposive samples of Horizon Addis tyre company

Management level	Questionnaire sent	Questionnaire returned	Questionnaire used in the analysis
Top managers	23	11	9
Middle managers	33	27	26
Shop floor managers	88	64	60
Total	144	102	95
Response rate = $95/144*100 = 66\%$			

Number of respondents' category and response rate (researcher's compilation)

3.6. Reliability and validity of the measures

In any study reliability tests are undertaken to ensure that measures used in the study are dependable. Reliability tests certify internal uniformity. For the purpose of this study an alpha value of .70 and above was used to point out reliability (Nunnally& Bernstein, 1994).

In order to be assured about the reliability and validity of this study, a pilot test with 15 respondents was undertaken. The results of the pilot test will be inferred through Cronbach's alpha test (a statistical test used in order to confirm the validity of the measures adopted for this study). According to measurement (survey variables) validity, the researcher also asked respondents about the clarity of each statement and whether each statement was easy to understand and reflected the variables in the survey questionnaire. It is very important to check that there are no mistakes or errors in the survey in order to

ensure validity. The researcher also reviewed this survey by asking a supervisor to confirm the validity of these measures.

In addition to this, internal consistency of this study was checked by Cronbach's alpha. The data obtained were analyzed by using **Minitab 18** to say the reliability and scales of tools and patterns under the questionnaire two items were considered to be disregarded based on their value of item and some of them were improved (wording, clarity, and order).

Table 3.2 presents, the reliability coefficient alpha which is 0.867 Higher than 0.7. Accordingly, the research instrument and the scale used are judged to be reliable.

Table 3.2: Reliability coefficient alpha result

VARIABLES	Cronbach's Alpha
Question 1 –Question 7	0.88935
Question 8-Question 21	0.87016
Question 22-Question 36	0.86363
Overall Cronbach's Alpha = 0.8672	

Source: own research data (2019)

3.7. Ethical Considerations

The researcher maintained scientific objectivity throughout the study, recognizing the limitations of competence. Every person involved in the study was entitled to the right of privacy and dignity of treatment, and no personal harm was caused to subjects in the research. Information obtained was held in strict confidentiality by the researcher. All assistance, collaboration of others and sources from which information was drawn is acknowledged.

CHAPTER FOUR: DATA COLLECTION AND ANALYSIS

This chapter provides information on the collected data procedure adoption, analysis of the data and findings. The responses from the respondents are described, analyzed, and inferences made to established relationships. The data is presented in tables and diagram as well as analyzed and discussed in brief.

4.1 Profile of the Organization

The first part of the questionnaire was used to gather demographic information on the respondents and the organization. Data obtained from the questionnaire and secondary data sources are summarized.

Horizon addis tyre is the sole tyre manufacturing company in Ethiopia. The company produces wide variety of tyre that is up to thirty-nine types of tyre. The basic types are radial and diagonal.it has implemented ISO 9001: 2008 and 14001:2004 quality management systems since 2008(HATC Bulletin, 2018).

The company currently has about 540 employees out of which are 460 are permanent employees which were taken as target population in the company. From the sample size computation, we have observed a result of 144 samples to be collected that would represent the entire population. However, out of the 144 questionnaires distributed only 95 of them were filled and returned which were made ready for the analysis. The other forty-nine samples were not replied for reasons beyond the researcher's understanding.

Demographic characteristics of the respondents, analyses and interpretation based on the data collected from the respondents of the study area are presented in this chapter. Moreover, summarized results of the demographic profile of respondents and the response towards the items included in the questionnaire as well as descriptive statistics were described, analyzed and synthesized in tables, percentage and charts with the help of Microsoft Excel and Minitab 14.

4.2. Demographic Characteristics of the Respondents

The demographic characteristics of the management respondents based on the gender, age, education and their position are presented in the Table 4.1.

Table 4.1: *Demographic characteristics of management respondents*

Sex	No.of Respondents	(%)		Age(in years)	No. of Respondents	(%)
Male	83	87.4		21-30	21	21.10
Female	12	12.6		31-40	34	35.79
				41-50	37	38.94
				51 & above	3	3.16
	95	100.00			95	100.00

Education	No. of Respondents	(%)		Position	No. of Respondents	(%)
Bachelor degree	72	79.10		Top Management	9	9.50
Master degree	12	13.20		Middle Management	26	27.40
Diploma	11	7.70		Lower Management	60	63.10
High school	0	0.00				
	95	100.00			95	100.00

Source: Own computation based on data collected (Microsoft excel result, 2019)

Table 4.1 above shows that the majority of the respondents 83 (87.4%) are males while the remaining 12(12.6%) are females. This shows that the large majority of the HATC staffs are males and this study is also conducted based on respondents which is largely made out of males.

The age distribution of the participants was: 38.94% of the respondents were in the age group of 41- 50, 35.79% of the respondents were in the age group of 31-40, 21.10 % were in the age group of 21-30 and 3.16% of the respondents were 51 and above. This shows that majority of the participants i.e. 38.94% of them were between the ages of 41-50. The main advantage of HATC in terms of hiring large number of experienced employees is the degree of ease to accept change quickly and better understand and perceive the importance of QMS having previous exposure. Besides this the respondents capable to answer the questionnaire and interview questions.

The respondents were asked to indicate their highest level of education they had achieved and 72 (79.1%) of the respondents have bachelor degree, 12(13.2%) have Master's Degree, 11(7.7%) of the respondents have Diploma and no one is below diploma as depicted in the above graph. It can be seen from the table as well as the following graph that most of the respondents i.e. 79.1% are first degree holders. Surely the educational level of the employees positively affects the organization in implementing QMS quickly and effectively. Educated employees are quick to receive new ideas and incorporate and implement them as well. This in return benefits the organization in terms of return on investment and higher profitability in short period of time. Furthermore, these employees have better knowledge in understanding the benefits achieved and challenges that the company faced of QMS implementation at all levels of the organization and endeavor more to come up on how to improve and also anticipate and predict customers need effortlessly.

This suggests that majority of the workers at the HATC were well-informed and had high literacy levels they would therefore be capable of understanding and responding to the questionnaire validly.

4.3. Relevance of ISO certification to the strategic plan

The respondents were asked to rate the extent to which certification aided in realizing the strategic plan. Findings of the study was, the respondents agreed that ISO certification enabled the achievement of the company's strategic plan (84.6 %). Respondents, to a great extent agreed that the certification was relevant to the vision and mission (Mean of 3.9). Certification was also seen to enhance product quality to a great extent (mean =4.1). This is in line with studies done by (Irianto, 2005), that strategic quality planning should be in line with strategic objectives, work processes and performance projections.

Compared to other items of the strategic plan, innovation has lowest relevance followed by team work. Relevance of ISO certification to competitive advantage was ranked equal (mean = 3.7). ISO Certification was observed to be of great importance in achieving the goal of product quality.

Table 4.2: Relevance of ISO to Strategic Plan

Strategic plan dimension	Mean score	Percentage score (%)
Vision	3.9	87
Mission	3.9	87
Innovation	3.0	77
Team work	3.5	80
Recognition of customers	4.1	89
Product quality	4.1	89
Competitive advantage	3.7	83
Average	3.74	84.6

Source: Research data

The extent to which ISO certification was relevant to strategic plan and core values have been depicted by the above table. From the table, recognition of customers' needs and product quality improvement seem to be areas of great emphasis of certification.

4.4. Reasons of Certification

ISO 9001 motivations and benefits can be categorized as being mostly external or internal ones. External reasons are essentially related with marketing and promotional issues, while the internal category is related to internal organizational improvements. According to the literature, companies maximize their benefits if they achieve ISO 9001 certification based on internal motivations. (Sampaio, Saraiva & Rodrigues, 2009) When respondents were asked about reasons to seek certification which was a multiple-choice question, ranking of reasons came as indicated below (Figure 4.1):

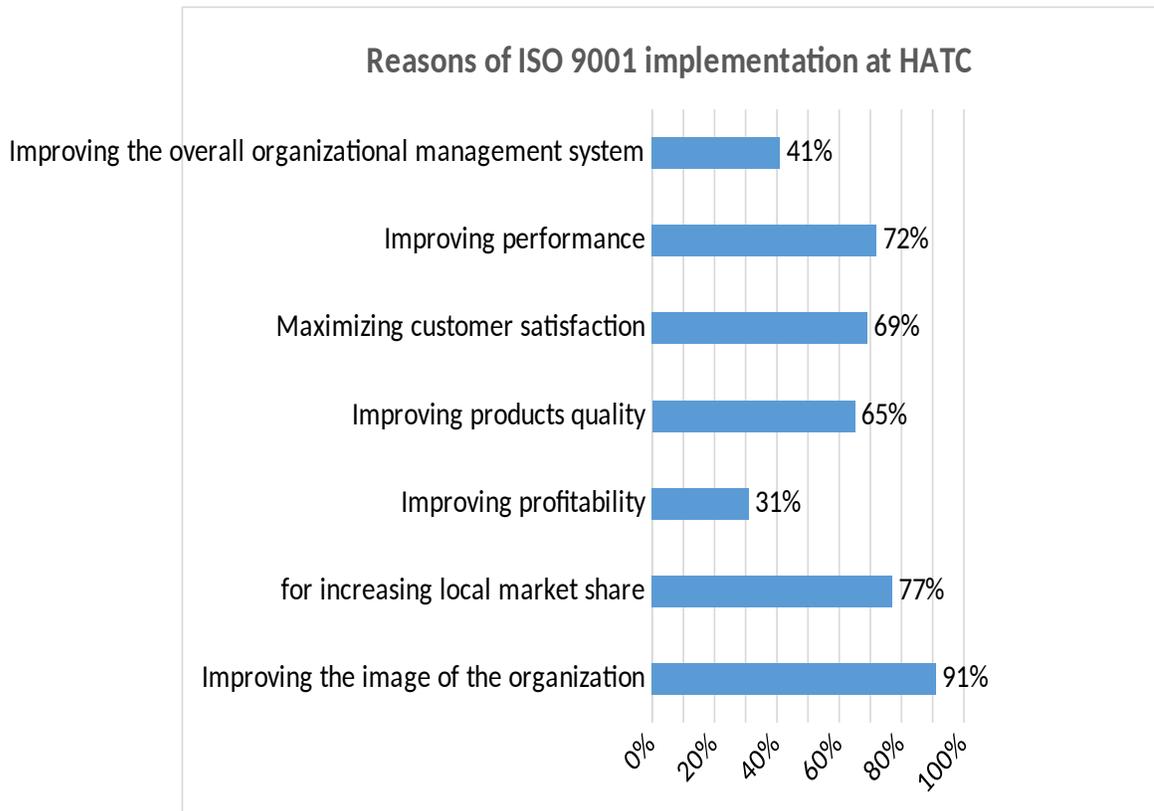


Figure 4.1 Responses on reasons for ISO 9001 implementation certification in HATC

A high percentage of respondents approved that the improvement of the organization’s image and increasing local market share of tyre due to pressure from local tyre importers (91% and 77%) are important factors behind seeking ISO 9001 certification. Internal improvement reasons came second such as performance, product’s quality and customer satisfaction improvement. In Georgiev and Georgiev (2015) same reasons were dominant as enhanced company image and competitiveness was reported to be the leading motivational factor for ISO 9001 certification in Bulgaria. Al-Khalifa and A spin wall (2000), Sharif (2005) and Cagnazzo et al. (2010), also cited that certification was mainly a marketing and advertising tool to companies to improve their image and prestige.

4.5. Perceived benefits of ISO Certification.

It is important to note here that the benefits, both tangible and intangible, are difficult to quantify. However, a list of 24 benefits cited in literature (Forgaciu and Rahau 2008, Lundmark and Westlius 2006; Giannopoulos, *et.al*, 2007; ISO 2011; Thilakarathne and Chithrangani 2014), were used for this study and subjected for rating by the respondents. Responses obtained by employing the 14 item benefit questions rated on a Likert scale of 1 to 5 ranging from very low to very high respectively were used to analyze the benefits of implementing ISO 9001:2008 QMS in the case company. Cronbach alpha reliability analysis of the 14 items revealed 0.87 indicating an acceptable level of internal consistency and reliability.

A high mean score (4.54) of better documentation was strongly agreed by the respondents. That it should not be surprising as "documentation" has been identified as one of the core concepts and benefit of ISO 9001 listed in the literature. Implementing of ISO 9001 has helped to establish a complete and well-organized file of control procedures. Specifically, ISO requires management to identify quality records and develop procedures to control quality documentation within the organization.

Prior to establishment of proper documentation of quality records, the empirical quality data need to be solicited. To do so, a measurement system responsible for raw data collection is required. In other words, in the process of practicing ISO requirements, both the measurement system and documentation system are the first two areas that need to be dealt with.

The overall average score (3.56) of those 14 questions reveal that the company has benefited from ISO 9001 implementation certification both internally (better documentation, improve measurement system, increase preventive action, departmental cooperation and reduce scrap) and externally (to increase local market share, higher perceived quality, publicity for the company and certification has improved competitiveness). It was observed that respondents were in agreement that certification improved to a large extent (Mean= 3.64) the publicity of the company in the local market customers.

Higher quality awareness within the company employees (mean=3.76) has been identified as another benefit achieved according to the respondents that was when the whole organization starts to engage in various quality tasks.

The respondents however agree to a lesser extent that certification improves perceived quality of the tyre product (3.06) and confidence on the tyre product provided (3.14).

Table 4.3: Respondents perceived benefits of ISO 9001 Certification for HATC

BENEFIT	N	Mean	Standard deviation
Better documentation	95	4.54	0.638
Improved measurement system	95	3.57	1.020
Higher quality awareness	95	3.76	0.980
Increase preventive action	95	3.66	1.070
Improved departmental cooperation	95	3.22	1.170
Positive cultural change	95	3.62	1.080
Reduced scrap	95	3.64	1.071
Certification has improved customer's confidence on the product	95	3.14	1.001
Certification has improved company's competitiveness in local market	95	3.45	0.990
Certification has improved customer satisfaction	95	3.42	1.110
Priority in the market	95	3.34	1.112
Publicity for the company	95	3.64	1.011
Higher perceived quality	95	3.06	1.120
Increase local market share	95	3.24	1.170
Overall Average score		3.56	1.039

Source: Research data

4.6. Perceived challenges of implementation of ISO certification

As most literatures suggest that despite the widely proclaimed benefits quite a number of challenges are also faced by organizations in implementing ISO 9001:2008 QMS (Kumar and Balakrishnan 2011; Sabah and Maha 2011). These challenges were summarized in to a 15 item list of challenges for this study.

The respondents were asked to indicate the extent to which they agreed with statements concerning challenges of ISO certification. A Likert scale of 1 to 5 was used to measure the extent of challenges. Cronbach alpha reliability test for the 15 items found to be 0.86363 indicating an acceptable level of internal consistency and reliability.

Table 4.4 shows the respondent's ranking of the challenges experienced by implementing QMS at HATC. The predominant challenges consisted of internal audits being done in a biased manner and some work processes not being complemented by the QMS processes.

The respondents disagreed with the statement that top management did not support implementation efforts and that needs assessment was not done prior to implementation (Mean=2.04 and 2.12 respectively). This is in agreement with the study that top management involvement is essential in realizing objectives of ISO certification (Irianto,2005).

Respondents indicated that the level of employee involvement on certification was good hence it was not seen as a major challenge to certification. The findings are in agreement with (Cheng and Tummala, 1997) who found that widespread participation by employees generated proactive evaluation of outcomes or value of certification. Staff involvement has also been underscored by Deming and Crosby as elaborated by (Hasmann, 2005). Top management not being involved in supporting implementation and needs assessment not being done were seen by respondents as the least challenges. The major challenges were found to be biased internal audits and work processes not being complemented by certification (mean of 3.78 and 3.70 respectively)

Table 4.4: Challenges faced during ISO 9001 implementation certification at HATC

Challenges	N	Mean	Standard Deviation	Ranking
Internal audits are done in a biased atmosphere	95	3.78	0.699	1
Work processes are not complemented by ISO	95	3.70	0.981	2
Lack of trainings	95	3.36	1.135	3
Dominance of bureaucracy	95	3.36	1.435	4
Poor interdependence between departments	95	3.13	1.030	5
Cost of certification	95	3.10		6
Lack of internal communication among staff and between staff and top management	95	2.88	0.965	7
Difficulty in changing culture	95	2.68	0.950	8
The staff do not understand existing processes and procedures	95	2.62	1.069	9
there is lack of regular review and follow-up of implementation	95	2.47	1.096	10
Bulky documentation replaces people involvement in implementation	95	2.32	1.210	11
There is lack of employees' involvement in the implementation efforts	95	2.12	1.330	12
Needs assessment was not done before implementation of ISO 9001 was effected	95	2.12	0.977	13
Lack of top management commitment	95	2.04	1.445	14
Overall score		2.83	1.10	

Source: Research data

The overall average score (2.83) of those 14 questions in the above table reveal that the company has not faced much more challenges in implementation of ISO 9001 QMS both internally and externally.

The above table further shows the least mean score value is lack of top management commitment and need assessment was done by the company prior to implementation of ISO 9001 at HATC (2.04 & 2.12) were the least challenges perceived by the respondents. But the major challenges were Internal audits are done in a biased atmosphere in the

company and Work processes are not complemented by ISO 9001 are agreed by the respondents (3.78&3.70).

Another challenge is the lack of training (mean = 3.36) that leads to poor competence in fulfilling tasks related to the quality management system such as experiencing difficulties in process identification and management which is the final important barrier to ISO 9001 implementation according to respondents.

4.7. Respondents perception on training, employee involvement and communication for successful transition to ISO 9001:2015

The findings of the study indicate that majority (81.30%) of the respondents were in agreement that training can have positive impact for successful transition to ISO 9001:2015 to a very great extent, 14.40% were of the view that it will have positive impact for successful transition to a great extent and 4.30% were of the view that training have positive impact for successful transition to a moderate extent. No respondent was of the view that training will have a minimal or no extent to ISO 9001:2015. This is graphically illustrated in Figure 4.2 below. This means that training definitively will support for successful transition to ISO 9001:2015.

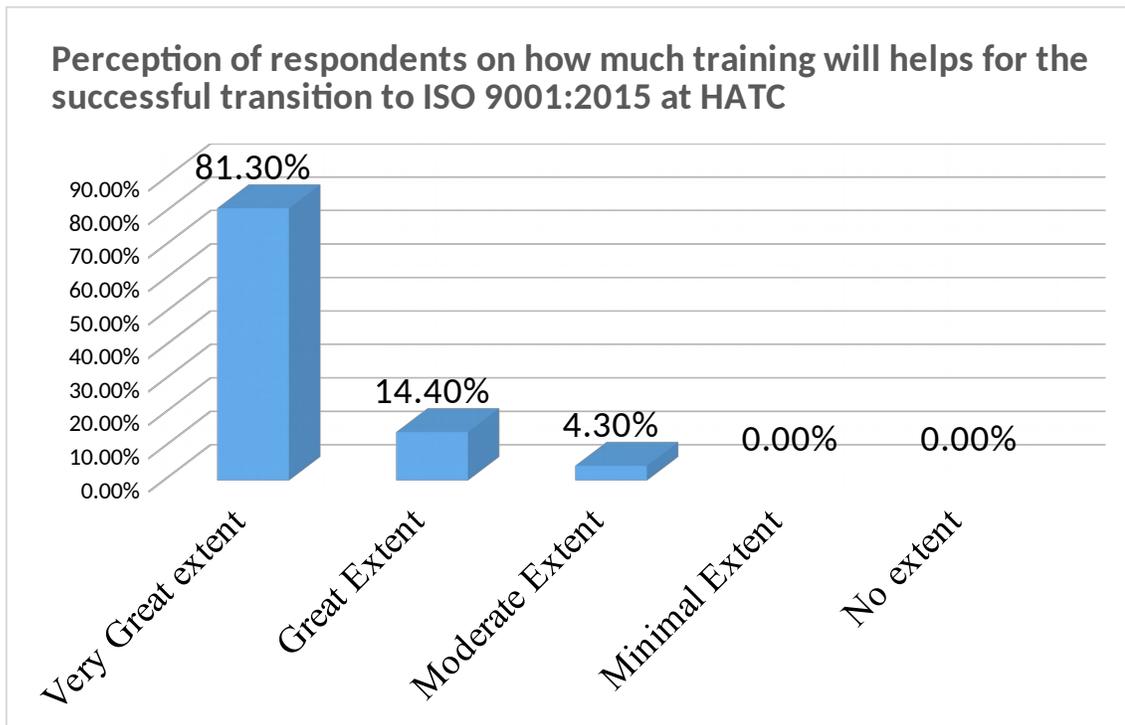


Figure 4.2: Extent to which training will helps the transition to ISO 9001:2015

Results from the study indicate that majority (54.60%) of the respondents were of the view that employee involvement will helps for the transition to ISO 9001:2015 to a very great

extent, 28.40% of the respondents agreed that employee involvement will help for successful transition to ISO 9001:2015 to a great extent, 17.00% of the respondents were of the view that the transition to ISO 9001:2015 will not be affected by employee involvement by a moderate extent. None of the respondents agreed that employee involvement will help for successful transition to ISO 9001:2015 by a minimal or no extent. This is illustrated in Figure 4.3 below. This implies that employee involvement certainly helps for the successful transition to ISO 9001:2015 though there were different views on extent of its contribution.

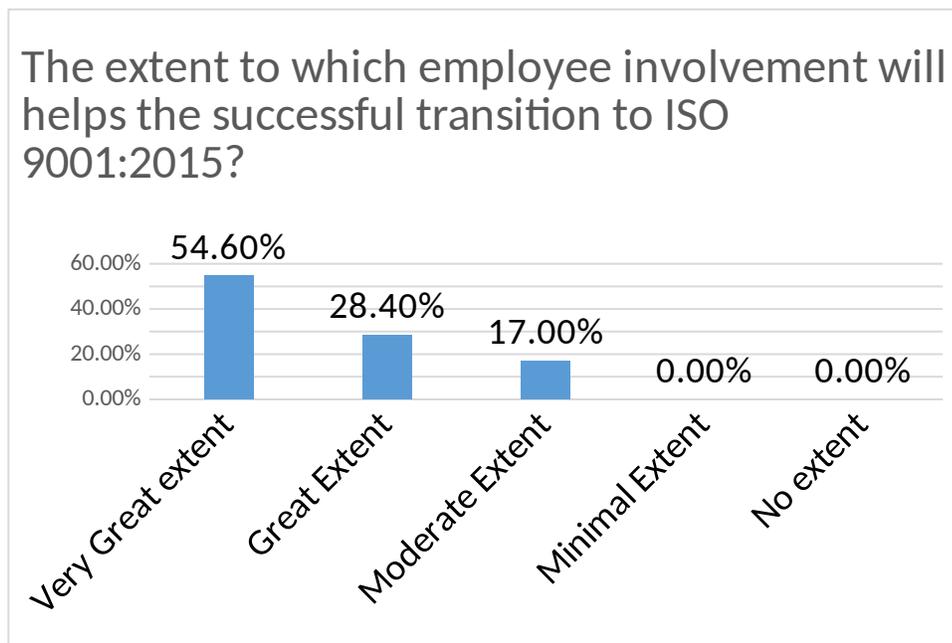


Figure 4.3: Extent to which employee involvement will help for the successful transition to ISO 9001:2015

The findings of the study also indicate that majority (44.20%) of the respondents were in agreement that communication will help the successful transition to ISO 9001:2015 to a very great extent, 37.80% were of the view that it can help the transition to a great extent and 11.50% were of the view that communication will help the successful transition to a moderate extent, 6.50% agreed that its effect will be of a minimal extent. No respondent was of the view that communication will not help the successful transition to ISO 9001:2015. This is graphically illustrated in Figure 4.4 below. This suggests that communication is indubitably a factor that contributes to the successful transition to ISO 9001:2015.

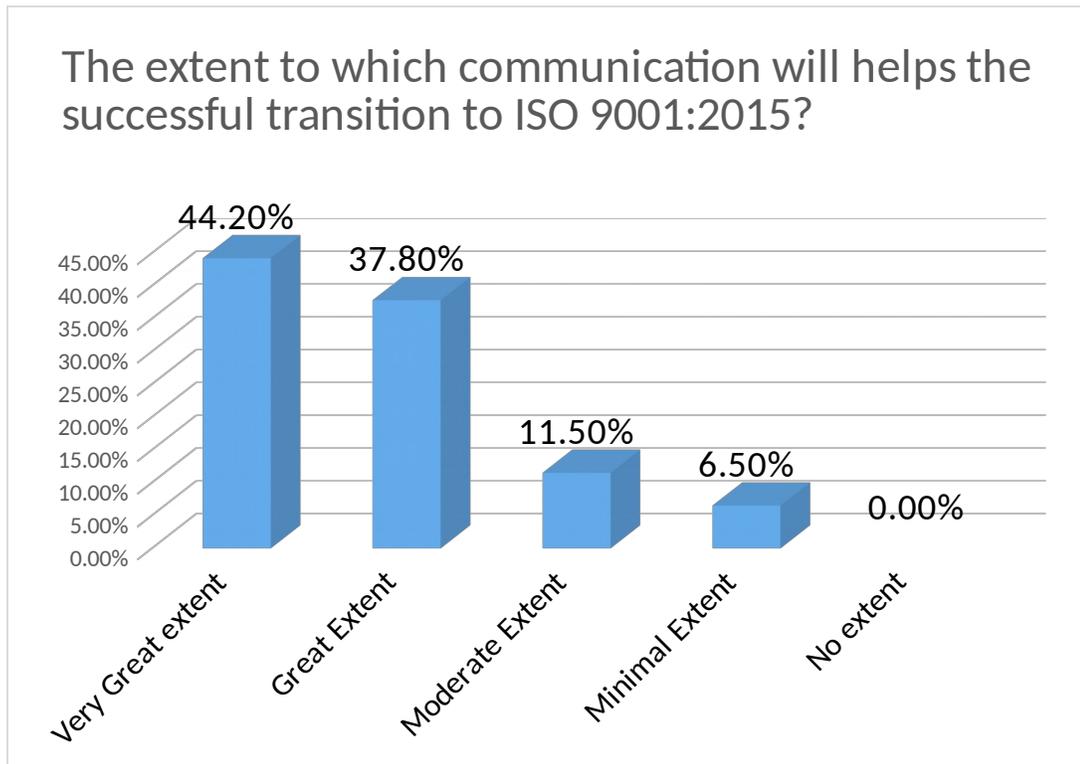


Figure 4.4: Extent to which communication will help the successful transition to ISO 9001:2015

4.8 Semi structured interviews

Semi structured interviews involved face to face interaction which proved to be effective in terms of response rate and, for these reasons, the researcher conducted this technique. Most of the interview questions conducted are similar to the questions in the questionnaire. This helped me to cross-check the response given by the respondents on both methods of assessment. Being one of the first such studies in the tyre industry, it was essential to understand the extent to which quality practices are prevalent in the case company and its level of awareness regarding QMS practices. Twelve interviews were conducted with different management levels. Interviews were conducted with general managers, production managers, quality managers, human resource managers and supervisors and. According to (Marshall et al. 1996), middle management, which comprises production, human resources and quality managers, etc. are considered to be the most effective and important sources of information related to quality related issues in any organization. They argue that they provide important information due to their awareness and ability in better understanding of quality issues that may affect their organizations, their responsibility for the execution of top management decisions, being in the position where they need to

interact with both top management and floor level and their ability to have a better understanding of the company's performance and reactions of staff at floor level. Therefore, different management levels (top & middle) were selected as the source of information for this research. The following Table 4.5 summarizes the interview questions for each segment of target respondents.

Table 4.5: Summary of top and middle management interviews (research compilation, 2019)

Interview questions	Top Management level	Summary of interviews
Q1	To what extent does your company have a policy to ensure customer satisfaction?	The results concluded that the company has a policy that addresses customer satisfaction. The company is certified ISO 9001:2008 just for the purpose strategic relevance.
Q2	To what extent does the top management of your company follow Quality Management System (QMS) principles?	All managers agreed that company follow QMS principles that enables to ensure consistent quality of products.
Q3	How about teamwork, is this encouraged and how?	Apart from one, all the managers interviewed agreed that employees and teamwork are motivated and encouraged to create, innovate and enhance the current QMS.
Q4	To what extent does your company endeavor to empower employees, and how?	five out of six respondents, to some extent disagreed that employees are empowered but rather focused on the work, structure and narrow delegations of tasks.
Q5	What are the critical issues of implementing QMS in your company?	Top management agreed that these issues are: 1. To build image of the company 2: competitive pressure from local tyre importers and improving performance of the company

Mid-level managers were also approached and interviewed. This section summarizes the six interviews conducted.

Interview questions	Middle Management	Summary of interviews
Q1	To what extent does your company have a policy to ensure customer satisfaction?	Five out of six respondents agreed that their firms' policies emphasized customer satisfaction as most middle managers dealt with process, procedures, engaged with internal and external procurement, settling accounts of suppliers and customers on annual basis.
Q2	To what extent does the top management of your company follow Quality Management System (QMS) principles?	All managers agreed that company follow QMS principles that enables to ensure consistent quality of products.
Q3	How much are you aware of the quality tools and practices?	The result reveals that five out of six middle managers enough knowledge of quality tools and practice. one manager noticeably said that his knowledge of quality system was limited and to enhance such awareness a good internal communication and workshop is thus required.
Q4	What do you know about quality management systems , ISO 9001?	Five out of six middle managers have well knowledge of system tools.
Q5	How can QMS be useful for your company?	Middle managers provided many benefits of QMS, which indicate to some extent their awareness of QMS' significance for the company. Managers saw QMS improving image of the company, products and customer satisfaction focus, establishing a quality framework, identifying problems, reducing defects and boosting profits.
Q6	What is the procedure if there are any defective products?	The majority of respondents agreed that the QMS allowed them to follow and identify any defects in products. When products are defective, managers provide reports and take immediate corrective action.

4.9 Observations and conclusion

The company uses ISO 9001:2008 and that its “quality management offers the ability to formalize an organization’s processes and to provide assurance that process requirements are being met. The company defines what its quality objectives are, in most cases focused on customer/stakeholder satisfaction”. The top management of the company show a commitment and strong sense to quality. Thus, the company has its own business culture to support total employee’s involvement in quality improvement. They do have a clear quality vision, mission, and objectives. They focus on long-term interest rather than short-term interest.

The company has also adequate knowledge on quality and quality management system. Hence, the researcher has observed that there is no a big gap between the ISO 9001:2008 quality management system requirements and the current status of these company to transit 2015 version.

CHAPTER FIVE: MAJOR FINDINGS, CONCLUSIONS AND

RECOMMENDATIONS

5.1. INTRODUCTION

In this chapter, summary of the findings and conclusions based on the objectives of the study, namely, the relevance of certification to strategic plan, benefits and challenges of implementation and factors for successful transition through proposed model will be discussed.

5.2. SUMMARY OF MAJOR FINDINGS

HATC is the sole tyre manufacturing company in Ethiopia. But the company have only 26% market share in local market and the rest 74% of the local market share is with the hand of different tyre brands which are imported by local importers .one of the main reason for this low market share by HATC is due to the poor quality of the products as customers perceive it product and rather look to another imported tyre brand. The company has implemented and certified of ES ISO 9001 QMS since 2012 as a strategy to mitigate the above problem. The quality objectives are to meet customer requirements, to diversify their products and to acquire perceived quality.

Accordingly, in order to assess whether the practice and benefits of this quality management system has resulted in a good benefit to the company or not and to ascertain the main challenges the company faced during ISO 9001 implementation certification are the aim of this research that it has been conducted.

The findings of this study revealed that the motivation for ISO 9001 implementation certification is due to both internal and external factors. High percentage of respondents agreed that the external factor, for the company image, scored 91%. The internal factors listed items comes the second motivation according to the respondents.

On the relevance of ISO certification to the strategic plan, respondents were satisfied that certification was in line with the strategic plan and helped achieve the company's objectives and core values. Strategic plan is important in determining the long term goals of the company of being local tyre market share leader and providing quality tyre in COMESA regions. The finding is supported by the facts that respondents agree that top management is key in realizing objectives of implementation. The findings contradict with the observation by Yeung, Lee and Chan (2003) that top management involvement does not improve performance. Respondents agree that ISO certification leads to improve the quality of tyre produced. The respondents also agree that certification leads to achieve

competitive advantage(mean=2.5). The finding is in agreement with the study by (Amponsah, et al, 2008) that ISO 9001 certification allowed an organization to compete globally.

Looking to perceived benefits derived from ISO 9001 certification, the researcher found out that all the benefits were scored average percentage of all the items listed (66%), meaning that certification was advantageous on the highlighted areas of increasing local market share, documentation, high quality awareness in employees, increase preventive action, increase tyre product quality and quality inspection, reduced scrap and publicity for the company.

Findings on challenges facing implementation showed that respondents scored biased internal audit and work processes not complementing ISO certification higher in terms of challenges compared to other variables. Top management involvement and prior needs assessment were seen as minimal challenges to ISO implementation. Challenges of staff not understanding the processes, objectives not being communicated, bulky documentation and people's involvement were rated same and minimal. The major challenges were biased internal audit and the work processes were not being complemented by quality procedures. Training, communication and employee involvements will have positive impact for successful transition to ISO 9001:2018.

5.3. CONCLUSIONS

The four objectives of this research were achieved through reviewing the literature, carrying out a case study and administering a survey questionnaire at HATC. In addition, the majority of research objectives were answered by collecting primary data (either survey questionnaire or interviews). Moreover, the objectives were achieved using a mixed methods approach through which both quantitative and qualitative results are gained.

This research has concentrated on the evaluation of the effectiveness of QMS through identification of benefits achieved and challenges faced in ISO 9001 QMS implementation certification in HATC.

From the finding of the study, the researcher concludes that ISO certification is relevant to the organization's strategic plan because it assists in achievement of the company's objectives. The certification also enables the organization to compete with local tyre importers with improving its products. Certification also enables the organization to derive benefits like improved documentation, competitiveness, publicity for the company, enhanced product quality, increase local market share and improved customer satisfaction. From the analysis it was observed that the most important reason for the organization to implement and certify ISO 9001 was due to both internal factors and external factors mainly to improve image of the company.

The result of the study has revealed that the two most difficult elements found out are:

- Biased internal audit and
- Work procedures not comply the ISO 9001

In spite of the few minor challenges faced by the company to develop, implement and maintain ISO 9001:2008 Quality Management System at HATC, broadly asserted benefits of implementing it were found significant as a whole and has resulted in good impact on the performance of the company.

Hence HATC have benefited a lot from the QMS and better to prepare for the transition of their Quality Management System (QMS) from ISO 9001:2008 to ISO 9001:2015 as the earlier version of certification have been expired since 2018. For organizations that already implemented the earlier version, there were already high compliance levels of current QMS with the requirements of ISO 9001:2015 (with the average of 75%), although they had not done anything yet in term of transition preparation. The organization could prepare these three major transition designs. Firstly, the case company can formulate its strategies and relevant quality objectives based on the SWOT analysis. Secondly, it can

accommodate the stakeholders' needs by defining relevant QMS business processes. Finally, the company need to register the strategic and operational risks which can be done by using FMEA. The research showed how these transition designs could be prepared and by performing these three major transition designs, the organization is expected to be able to cover the gap and meet the new requirements in ISO 9001:2015.

5.4. RECOMMENDATIONS

Based on the findings from different literatures and the primary data gathered by both the questioner and from the researcher's direct observation, the researcher recommended the following model to be implemented for successful transition to ISO 9001:2015 by the Horizon Addis tyre company.

To ensure that HATC reaps maximum internal benefits, it is recommended to ensure that the QMS is maintained to drive continuous improvement. However, HATC cannot advertise its certification until achieving certification to ISO 9001:2015. Hence ISO 9001 certification could be quite problematic from a marketing point of view, and HATC may not qualify as supplier if ISO 9001 is a requirement. The sooner it gets re-certified, the better.

In order to upgrade, HATC first needs to familiarize itself with the changes in the standards. One of the most significant changes in ISO 9001:2015 versus ISO 9001:2008 is the increased focus on risk-based thinking (RBT) in requirements for planning, review and improvement of the quality management system and its processes.

Hence HATC should devise an implementation plan – this could include additional training needs, organizational changes or new communication strategies.

Integrated indicator: the efficiency of QMS

Effective management of organization is becoming the essential precondition in order for an organization not to simply survive but also to be competitive in the market as well as grow and develop. One of the means of effective organization management to improve the effectiveness of management is the evaluation of efficiency of quality management system implemented in the company.

Transition guidance

- ❖ Take a completely fresh look at the QMS of the 2008 version and evaluate its effectiveness in improving competitiveness
- ❖ Identify benefits and main challenges faced during implementation of the 2008 version of QMS
- ❖ Highlight the key changes in 2015 version as opportunity for improvements
- ❖ Make changes to the company documentation to reflect new structure (as necessary)
- ❖ Implement new requirements on leadership, risk and context of organization

- ❖ Review effectiveness of current control set
- ❖ Assume every control may have changed
- ❖ Carry out an impact assessment

A transition gap assessment is a pre-assessment service where the company should take a closer look at transition plan and quality management system comparing it with the requirements of ISO 9001:2015. The gap assessment can help confirm the areas of organizations system already compliant and any gaps in its system.

By addressing the new requirements, three transition designs that should be prepared are: (i) identifying needs from interested parties, (ii) analyzing internal and external factors of the organizations to formulate relevant strategies and quality objectives, and (iii) registering risks associated to business processes as well as organizational strategies.

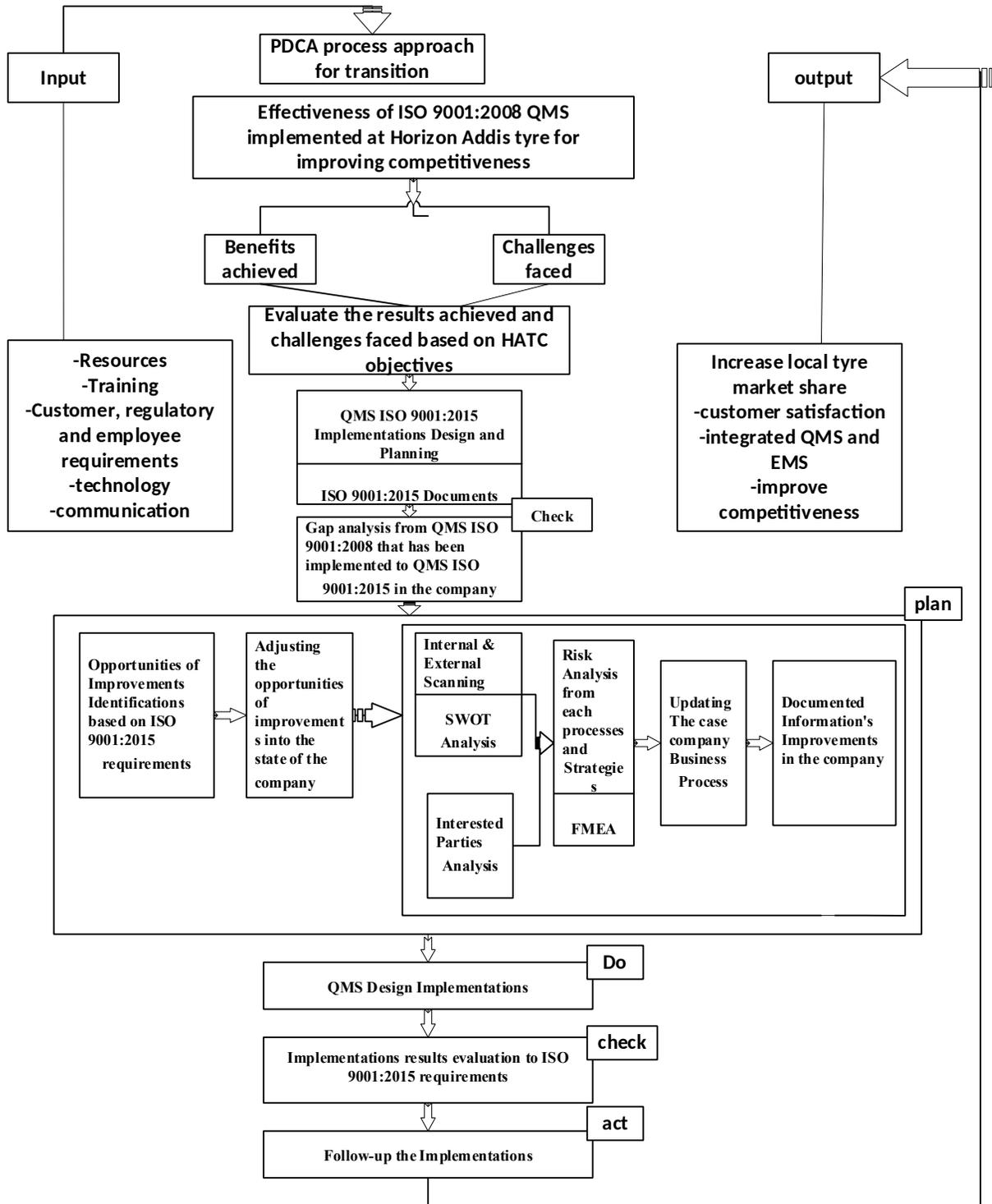


Figure 4.5. The new proposed model for transition to ISO 9001:2015 for HATC

As the starting point of the new version of ISO 9001 is to identify internal and external parties who support the QMS this means that it can be used to help enhance and monitor the performance of an organization.

Gap identification and analysis (Check)

The main purpose of gap identification was to investigate how the current QMS complies with ISO 9001:2015 requirements. The gap identification can be done through: (i) a questionnaire comprising a list of questions derived from the requirements of the Standard, (ii) observation and survey, guided by the questionnaire, to collect the information on how the current QMS complies with the requirements.

The gap identification, will be followed by its analysis, the aim is to present the percentage of conformity and nonconformity of current QMS towards the Standard. It also helps to identify opportunities for improvements.

Transition designs (Plan)

Based on the previous gap analysis, there would be several opportunities for improvement for transition designs, especially to take into consideration the changes in ISO 9001:2015. The transition designs will cover the usage of concepts such as: (i) Strength, Weakness, Opportunity & Threat (SWOT) analysis to incorporate internal and external issues of organizations in determining strategies and objectives, (ii) the stakeholders' analysis to identify the needs of interested parties of organizations and (iii) the risk analysis.

Implementation of the transition designs (Do), Evaluation (Check) & Follow-up (Act).

The organizations need to implement the transition designs in order to validate them. After the organizations implement the transition designs, they are then able to evaluate the implementation to ensure the fulfilment of the Standard. Any feedback can be taken to revise the previous designs.

This study recommends the company to follow the proposed model and implement the 2015 version of QMS hence it:

- Gives an opportunity to the company to integrate both QMS and EMS
- Enhance overall performance of the company
- Improves its competitiveness with the local tyre importers and hence increase its local market share
- It increases management involvement
- It addresses risks and enables to use opportunities
- Broaden business opportunities by demonstrating compliance
- Provide better quality management that helps organization to meet present and identify future customer needs

From the findings it has been observed that the company have achieved the following main benefits since implementation of QMS even though minor challenges identified:

- ✓ Became competitive in local tyre market
- ✓ improved tyre quality
- ✓ increase the local market share to 26% from 19%
- ✓ product diversification
- ✓ better company image

hence it is recommended for the company to come up with the latest version of ISO 9001:2015, which helps the company to address the changing demand of customer requirements on tyre, to be more competitive with the local tyre importers, to address risk issue and use maximum benefits from opportunities and also as the company has implemented EMS, the transition of the old version QMS to the latest version helps the company to integrate both managements which in turn minimizes resource utilization.

It is also recommended for the company to work on training, employee involvement and communication prior to the transition process in which the respondents agree that those points have great impact for the successful transition.

REFERENCES

- A. Al Rubaish, L. Wosornu and S. N. Dwivedi, "Using Deductions from Assessment Studies towards Further-ance of the Academic Program: an Empirical Appraisal of an Institutional Student Course Evaluations," *The Inter-national Journal for Academic Development* (Communi-cated).
- Amponsah, C., DeCouette, A., Dew, D., Pogue, E. and Wilson, C.(2008). ISO 9000: An Effective Quality System. Retrieved on 10th, June,2010.Available at:[http://www.asq.org/learn-about-quality/iso-9000/overview/is it worth it?](http://www.asq.org/learn-about-quality/iso-9000/overview/is-it-worth-it?)
- Ayalewshibeshi.,(Aug, 1999). Research in Education. Distance Education Material for In-service Trainers. Continuing Education A.A.U
- Bansal, P. & Hunter, T. (2003) Strategic Explanations for the Early Adoption of ISO 14001. *Journal of Business Ethics*, 46(3), pp.289-99.
- Berk, J. &Berk, S. (2000) *Quality Management for the Technology Sector*. Woburn, MA: Butterworth-Heinemann.
- Brown, A., van der Wiele, T. & Loughton, K. (1998) Smaller Enterprises' Experiences with ISO 9000. *International Journal of Quality & Reliability Management*, 15(3), pp.273-85.
- BSI. (2015). Moving from ISO 9001:2008 to ISO 9001:2015 The new international standard for quality systems. *ISO Revisions*.
- Buttle, F. (1997) ISO 9000: Marketing Motivations and Benefits. *International journal of quality & reliability management*, 14(9), pp.936-47.
- Cheng, Y and Tam, W (1997) Multi-Models of Quality in Education, *Quality Assurance in Education*, 5(1), 22 - 31.
- Chin, K., Poon, G. K., & Pun, K. (2000). The critical maintenance issues of the ISO 9000 system: Hong Kong manufacturing industries' perspective. *Work Study*, 49(3), 89-99. doi:10.1108/00438020010318064
- Cochran, William G. (1977). *Sampling Techniques* (Third ed.)
- Cochran C 2015 *ISO 9001:2015 in Plain English* (Chico: Paton Professional)
- Fellows, R.F.(1997). *Research methods for construction*. Oxford: Blackwell Science.

- Fonseca, L.M., & Domingues, J.P. (2017). Listen to ISO 9001:2015 for organizational competitiveness: Correlation between change management and improvement (916-926). *In proceedings of the 11th International Conference on Business Excellence*. <https://doi.org/10.1515/picbe-2017-0097>
- Garza-Reyes, J. A., Rocha-Lona, L., & Kumar, V. (2015). A conceptual framework for the implementation of quality management systems. *Total Quality Management & Business Excellence*, 26(11-12), 1298-1310.
- Gotzamani, K.D. & Tsiotras, G.D. (2001) An Empirical Study of the ISO 9000 Standards' Contribution Towards Total Quality Management. *International Journal of Operations & Production Management*, 21(10), pp.1326-42.
- Hashim, M. (2013). Change Management. *International Journal of Academic Research in Business and Social Sciences*, 3(7), 2222–6990.
- Hazman, S. A. (2005). Are ISO 9000 certified organisations learning organisation? *Proceedings of the International Conference on Workplace Issues and Challenges*, Faculty of Office Management Technology, Universiti Teknologi MARA
- Heras, I., Casadesús, M. & Ochoa, C. (2001) Effects of ISO 9000 Certification on Companies' Profitability: An Empirical Study. In *Integrated Management: Proceedings of the 6th International Conference on ISO 9000 and TQM*. Ayr, Scotland, 2001.
- Hill, F. M., Hazlett, S.-A., & Meegan, S. (2001). A study of the transition from ISO 9000 to TQM in the context of organisational learning. *International Journal of Quality & Reliability Management*, 18(2), 142–169.
- Huo, B., Han, Z. and Prajogo, D. (2014), "The effect of ISO 9000 implementation on flow management", *International Journal of Production Research*, Vol. 52 No. 21, pp. 6467-6481.
- Irianto. D. (2005). *Quality Management Implementation : A Multiple Case Study in Indonesian Manufacturing Firms*, University of Twente, The Netherlands.
- ISO. (2015a). ISO 9001:2015. *International Organisation for Standardisation*, 49(4298), 1–9.
- ISO. (2015b). Moving from ISO 9001:2008 to ISO 9001:2015. *ISO*, 1(1), 1–6.

- Kim, D., Kumar, V., & Kumar, U. (2011). A performance realization framework for implementing ISO 9000. *International Journal of Quality & Reliability Management*, 28(4), 383-404. doi:10.1108/02656711111121807
- K. R. Sundaram, S. N. Dwivedi and V. Sreenivas, “Med-ical Statistics: Principles & Methods,” BI Publications Pvt. Ltd., New Delhi, 2009.
- Kumar and V. Balakrishnan (2011), A study on ISO 9001 Quality Management System (QMS) certifications – reasons behind the failure of ISO certified organizations,*Journal of Research in International Business and Management*, Vol. 1(6) pp. 147-154.
- Kumar, R. (1999).*The Research Methodology: A step-by-step Guide for Beginners*. London. Thousand Oaks.NewDelhi:sage publications.
- Leedy, P.D., & Ormond, E. J. (2005). *Practical Research Planning and Design* (8th Ed.). Parson International Edition.
- Lin, C.I. and Jang, W.Y. (2008), “Successful ISO 9000 implementation in Taiwan: how can we achieve it, and what does it mean?”, *International Journal of Productivity and Performance Management*, Vol. 57 No. 8, pp. 600-622.
- Low, S.P. & Omar, H.F. (1997) *The Effective Maintenance of Quality Management Systems in the Construction Industry*. *International Journal of Quality & Reliability Management*, 14(8), pp.768-90.
- Marshall, J., & Conner, D. (1996). Another Reason why companies resist change. *Strategy and Business* (Booz, Allen and Hamilton), <http://www.strategy-business.com/briefs/96101/page1.html>, First Quarter 1996.
- Maxwell, J.A. (1996). *Qualitative research design: an interactive approach*. California: Sage.
- Moturi, C., & Mbithi, P. M. . (2015). ISO 9001:2008 implementation and impact on the University of Nairobi: a case study. *The TQM Journal*, 27(6), 752–760.
- Nunnally, J.C. (1978), *Psychometric Theory*, 2nd Edition, New York, McGraw Hill.
- Nabavi, V., Azizi, M., & Faezipour, M. (2014). Implementation of quality management system based on ISO 9001:2008 and its effects on customer satisfaction (case study: kitchen worktops factory). *International Journal of Quality & Reliability Management*, 31(8), 4.

- Omondi, D. O. (2008). *Application of lean thinking to business process management: the case of Kenya Revenue Authority* (Unpublished master's thesis). University of Nairobi, Kenya.
- P. Gravestock and E. Gregor-Greenleaf, "Student Course Evaluations: Research, Models and Trends," Higher Education Quality Council of Ontario, Toronto, 2008.
- Psomas, E.L., Fotopoulos, C.V. and Dimitrios, P.K. (2010), "Critical factors for effective implementation of ISO 9001 in SME service companies", *Managing Service Quality*, Vol. 20 No. 5, pp. 440-457.
- R. Gob, C. Mc Collin and M.F. Rmalhoto, "Ordinal Methodology in the Analysis of Likert Scales," *Quality & Quantity*, Vol. 41, No. 5, 2007, pp. 601-626.
- Sarminah Samad (2009), Assessing the Differential Effects of Quality Management System on Product Quality and Business Performance *International Review of Business Research Papers*, Vol.5 No. 2, Pp. 283-292.
- Singels, J., Ruël, G., & Van De Water, H. (2001). ISO 9000 Series-Certification and performance. *International Journal of Quality & Reliability Management*, 18(1), 62-75.
- Strauss, A. and Corbin, J. (1990). *Basics of qualitative research: grounded theory procedures and techniques*. California: Sage.
- Tummala, V.M.R. & Tang, C.L. (1996) Strategic quality management, Malcolm Baldrige and European Quality Awards and ISO 9000 Certification: Core Concepts and Comparative Analysis. *International Journal of Quality & Reliability Management*, 13(4), pp.8-38.
- Zhang, Z. (2000). Developing a model of quality management methods and evaluating their effects on business performance. *Total Quality Management*, 11(1), 129-137.

APPENDIX-A



St. Mary's University School of Graduate Studies

Institute of Quality and Productivity Management

QUESTIONNAIRE

A QUESTIONNAIRE TO IDENTIFY CHALLENGES IN IMPLEMENTING ISO 9001:2008 QUALITY MANAGEMENT SYSTEM IN ETHIOPIAN TYRE INDUSTRY

Dear respondents, I am a postgraduate student of the above mentioned institution and currently undertaking a research on “CHALLENGES IN IMPLEMENTATION OF ISO 9001:2008 QUALITY MANAGEMENT SYSTEM IN ETHIOPIAN TYRE INDUSTRY” taking Horizon Addis Tyre Share Company as a case study. Your factory is the only tyre producing company in Ethiopia is chosen for this research. Your participation in the study is completely voluntary.

The purpose of the questionnaire is to obtain information, based on your personal view, on benefits achieved through certification of ISO 9001 quality management system and the challenges encountered upon implementation.

In order for your responses to be useful, all responses to the items contained in this questionnaire must accurately reflect your true opinions. Please take a few minutes to provide your honest opinion about each statement. Your honest opinion is very valuable to the success of this study.

Section I. information on the respondent

Please answer the following questions by checking tick or (x) on the appropriate box or writing your answer in the space provided.

1. Gender **Male** **Female**

2. Age (in years)

3 Highest Education

Section II. Questions relating to relevance of ISO certification on to the strategic plan

	<input type="checkbox"/>	31 – 40	41 – 50	51 and
	21-30	years	years	above
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	High school	Diploma	Bachelor's	<input type="checkbox"/> Other
	<input type="checkbox"/>	<input type="checkbox"/>	degree	Masters /
		<input type="checkbox"/>		PhD degree

To what extent do you agree with the role of ISO 9001 certification in achieving the following?

#	Question	Survey Scale: 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1	Vision					
2	Mission					
3	Innovation					
4	Team work					
5	Recognition of customers					
6	Product quality					

7	Competitive advantage					
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What were the reasons behind ISO 9001 certification?

- Competitive pressure from local tyre importers
- Improving the image of the organization
- For increasing local market share
- Improving profitability
- Improving products quality

- Maximizing customer satisfaction
- Improving performance

- Improving the overall organizational management system

- other specify

Section IV. Questions relating to Benefits of ISO 9001 Certification

Compared to pre-ISO certification, indicate the extent to which you agree with the following statements concerning benefits of implementation of post ISO 9001 certification.

#	Benefits	Survey Scale: 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
8.	Better documentation					
9.	Improved measurement system					
10	Higher quality awareness					
11	Increase preventive action					
12	Improved departmental cooperation					
13	Positive cultural change					
14	Reduced scrap					
15	Certification has improved customer's confidence on the product					
16	Certification has improved company's competitiveness in local market					
17	Certification has improved customer satisfaction					
18	Priority in the market					

.						
19	Publicity for the company					
20	Higher perceived quality					
21	Increase local market share					

Section V. Questions relating to obstacles to QMS implementation

Please note that the barriers listed below are the most common barriers to quality initiatives in general and ISO 9001 implementation in particular.

- Please tick the appropriate box: strongly disagree, disagree, agree, and strongly agree or neutral. The selected answer should represent your own opinion on challenges experienced during implementation in your organization.

#	Challenges	Survey Scale: 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
22	There is lack of employees' involvement in the implementation efforts					
23	Poor interdependence between departments					
24	Lack of top management commitment					
25	Dominance of bureaucracy					
26	Lack of internal communication among staff and between staff and top management					
27	Lack of trainings					
28	Difficulty in changing culture					
29	The staff do not understand existing processes and procedures					
30	there is lack of regular review and follow-up of implementation					
31	Bulky documentation replaces people involvement in implementation					
32	Internal audits are done in a biased atmosphere					
33	Needs assessment was not done before implementation of ISO					

.	9001 was effected					
34	Work processes are not complemented by ISO certification					
35	Cost of certification					

SECTION VI: THE IMPACT OF TRAINING, EMPLOYEE INVOLVEMENT AND COMMUNICATION FOR HORIZON ADDIS TYRE TRANSITION TO ISO 9001:2015

1. To what extent do you think training will help for the successful transition to ISO 9001:2015?

Very Great extent

Great Extent

Moderate Extent

Minimal Extent

No extent

2. To what extent do you think employee involvement will help for the successful transition to ISO 9001:2015?

Very Great extent

Great Extent

Moderate Extent

Minimal Extent

No extent

3. To what extent do you think communication will help for the successful transition to ISO 9001:2015?

Very Great extent

Great Extent

Moderate Extent

Minimal Extent

No extent



Thank you for your assistance! It is Greatly Appreciated