



**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF BUSINESS AND ECONOMICS**

**DEPARTMENT OF PUBLIC ADMINISTRATION AND DEVELOPMENT
MANAGEMENT**

**TITLE: ASSESSMENT OF KAIZEN IMPLEMENTATION PROCESS,
SUCCESS STORIES, CHALLENGES AND EMPLOYEES' WORK
ATTITUDE**

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ATTITUDE:
THE CASE OF WONJI/SHOA SUGAR MANUFACTURING FACTORY**

BY

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CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

Ethiopia launched the 5 years strategic Growth and Transformation Plan (GTP) in 2010, with the development agenda of sustainable, rapid, broad based and equitable economic growth. With the aim of sustaining the rapid growth momentum and achieving the planned target It is imperative to increase the productivity of agriculture and expand investment in the industrial sector (particularly in manufacturing industry) in the remaining years of the GTP (*MOFED, 2013*).

The GTP framework has seven strategic pillars for sustaining rapid, broad based and equitable growth based on pro-poor and pro- development policies and strategies. As mentioned in the Sustainable Development and Poverty Reduction Document (*SDPRP, 2002*) the Government of Ethiopia gave utmost attention to industries like small, micro and medium enterprises in particular and large scale enterprises in general to scale up the manufacturing sector activities of the country and to begin industrialization process.

The countries manufacturing sector performance compared to other sectors like agriculture and service sectors were poor for the last couple of years (*MOFED, 2013*). Hence, in order to alleviate the manufacturing sector performance and increase the competitiveness and share of the sector to the global community and to accelerate the GTP attainment. The government mainly focused on the development of small, micro and medium scale enterprises that are: labor intensive, have wide market, uses agricultural product as input, export-oriented and import substituting and contribute to faster technology transfer. Based on these, the following industries and sub –sectors are given due attention and have been supported within the GTP period. These include:-

- I. Small and Micro Enterprises Development;
- II. Medium and Large Industries Development:-

(Textile and Apparel Industry, Leather and Leather Products Industry, Sugar and Sugar Related Industries, Cement Industry, Metal and Engineering Industry, Chemical Industry, Pharmaceutical Industry, Agro-Processing Industry).

The government of Ethiopia believes that, quality and productivity improvement is one of the means to attain and increase the two digits consecutive economic growth for the last 5 years from 13.3% in 2010 to 19.1% in 2015 (*Daniel, 2010*). To this effect, the Japanese KAIZEN management concept has been chosen with the sense to speed up the implementation process of the GTP.

After the transferability, adaptability and organizational thinking test in the Ethiopian context with the support of Japan International Cooperation Agency (JICA), the Ethiopian Government has established Ethiopian KAIZEN Institute (EKI) in October 2011 under the Ministry of Industry (MoI) with the objective of transferring, customizing, disseminating, accumulating local best practices and crafting Ethiopian KAIZEN management philosophy. KAIZEN is a Japanese word composed of two concepts: Kai (change) and Zen (for the better) to mean continuous improvement. The main objective of Ethiopian KAIZEN is, changing of attitudes as a driving force for competitiveness (*Ethiopian Kaizen Institute, 2012*).

Kaizen has been implemented in two phases; the first phase was from October 2009-June 2011 as a pilot to confirm transferability, adaptability and a way of thinking of companies and results in the formation of EKI in October 2011. Phase II was launched in November 2011, with the aim of establishing system to disseminate quality and productivity to private enterprises in sustainable manner.

The concept of continuous improvement of quality and productivity is ideal in the absence of strain work, fair salary, proper social condition of employees, organization wide group activity based on Kaizen mindset and self disciplined employees (*Juran, 1994*). In spite of these and other challenges, many organizations are becoming beneficiary by implementing Kaizen management technique.

There are scientific studies about KAIZEN thinking, particularly in the manufacturing industry. There are no case studies focused on the impacts and the overall challenge of adopting KAIZEN thinking across the companies in Ethiopia. This study seeks to analyze the case of a remarkable KAIZEN performer manufacturing company found in Ethiopia: Wonji/Shoa sugar factory.

Therefore, the purpose of this research is to evaluate and assess KAIZEN implementation, achievements, challenges and employees work attitude as an indication for GTP attainment.

1.2 Statement of the Problem

Kaizen is a Japanese method of managing business, framed by Masaaki Imai in 1986. According to *(Imai, 1986)* Kaizen is continuing improvement involving everyone from workers, middle and top managers. The word indicates a process of continuous improvement of the standard way of work. Moreover, Imai suggested that, it is a continues improvement in personal life, home life, social life, and working life.

Kaizen is a continuous improvement involving employees in all levels of the organization; it calls for endless efforts for improvement involving everybody. Kaizen promotes small improvements that have been made in the status quo as a result of ongoing effort. It is one of the strategies for excellence in production and considered necessary in today's competitive environment. KAIZEN places the foremost importance in improvements at the front-line workplaces as the foundation of all the improvements efforts.

The Kaizen management strategy has been implemented in around the world as a way to improve productivity and quality after the Second World War around late 1980's, as a result of the competitive success of Japanese manufacturing industries. *www.basicoofmanagement.com accessed date 11/21/2013.*

The economic growth of Ethiopia ...has witnessedfor the last couple of years are largely driven by public investment. On the other hand, low level industrialization process galvanized with the problem of productivity, quality, capacity and capability raise the question of how we do and manage things?, in a changing environment for growth and sustainability.

GTP first two years performance report shows that, the performance of the industrial sector in general and manufacturing sector in particular were not as per the target set in the GTP. In addition, the contribution of the industry sector for the Gross Domestic Product (GDP) is only about 5% *(MOFED, 2013)*.

Despite the fact that, *Imai* discussed his thought in the context of manufacturing industries. The application of Kaizen management philosophy has immediate tangible outcome and long term competitiveness in the social and technical aspects of manufacturing and service organizations. The Ethiopian government considering Kaizen short and long term advantages particularly in the

manufacturing sector established at Federal level, KAIZEN Institute to carry out broad based activities of ongoing quality and productivity improvement and expansion of competitive industries and supporting the implementation of GTP.

Kaizen has been implemented across different industries and manufacturing sectors successfully in Ethiopia, as a result significant achievements have been attained through the implementation of the Kaizen concept (*Ethiopian Kaizen Institute, 2012*).

On the other hand, there are also a number of serious challenges and problems facing the urgent implementation of the Kaizen program for instance, lack of highly skilled human resources, differentiated managerial tools, a technological and capacity (institutional, system, capability) gaps, organizational culture , employee motivation and commitment and so forth (*Desta, undated*).

MOFED (2013) report also narrated that, despite the challenges, it is essential to encourage and support the large and medium scale, as well as small and micro enterprises of the manufacturing industries in order to improve and sustain the countries growth momentum.

Though, a number of ongoing reviews have been conducted, comprehensive and systematic study was not conducted regarding Kaizen program implementation. Particularly, the implementation process, success stories, challenges , employee work attitude have not been systematically documented in a way to benchmark best practices, knowledge sharing, promote learning curve and obtain operational knowledge about Kaizen program implementation . Thus, in depth study is essential to see the outcome of the implementation process and then put base line information which enables to tackle the challenges and disseminate the remarkable results from KAIZEN management system.

Therefore, this study will assess Kaizen program implementation and come across the major achievements, challenges and employee work attitude to indicate prospects for GTP attainment.

1.3 Research Objectives

1.3.1 General Objective

The overall research objective of this study is intended to assess Kaizen program implementation, major achievements, challenges and employee work attitude.

1.3.2 Specific Objectives of the Study

1. To examine how Kaizen program was implemented in the factory
2. To identify and analyze achievements due to Kaizen program implementation
3. To identify and analyze challenges encountered due to Kaizen program implementation
4. To explore the impact of Kaizen program implementation on employees attitude towards work trend.
5. To suggest possible recommendations to show the way forward.

1.4 Research Questions

The research is proposed to seek answers for the following research questions:

1. How is Kaizen philosophy (management technique) been implemented and /or managed?
2. What are the major achievements gained during Kaizen implementation?
3. What are the major challenges encountered during Kaizen implementation? What will be done to rectify the challenges?
4. How do Kaizen implementation process affect employee attitude?
5. What are the prospects of the Kaizen program implementation in view of GTP achievement?

1.5 Significance of the Study

The philosophy of Japanese management technique, Kaizen is new for Africa and Ethiopia. The study topic as well is new study area these days particularly in Ethiopia. As far as the researcher is concerned, Kaizen concept is not yet studied and documented properly. Given that, the current research will generate awareness and groundwork study regarding the concept of KAIZEN, its implementation process and applicability.

The study finding will also assist policy makers, planners, program implementers in obtaining existing knowledge about the program and to take advantage of the process as well as to make further investigation. Moreover, the study result will bring certain outcomes that would be an input for the future researches in this area and it could also be an addition to the existing literature.

1.6 Scope and Limitation of the Study

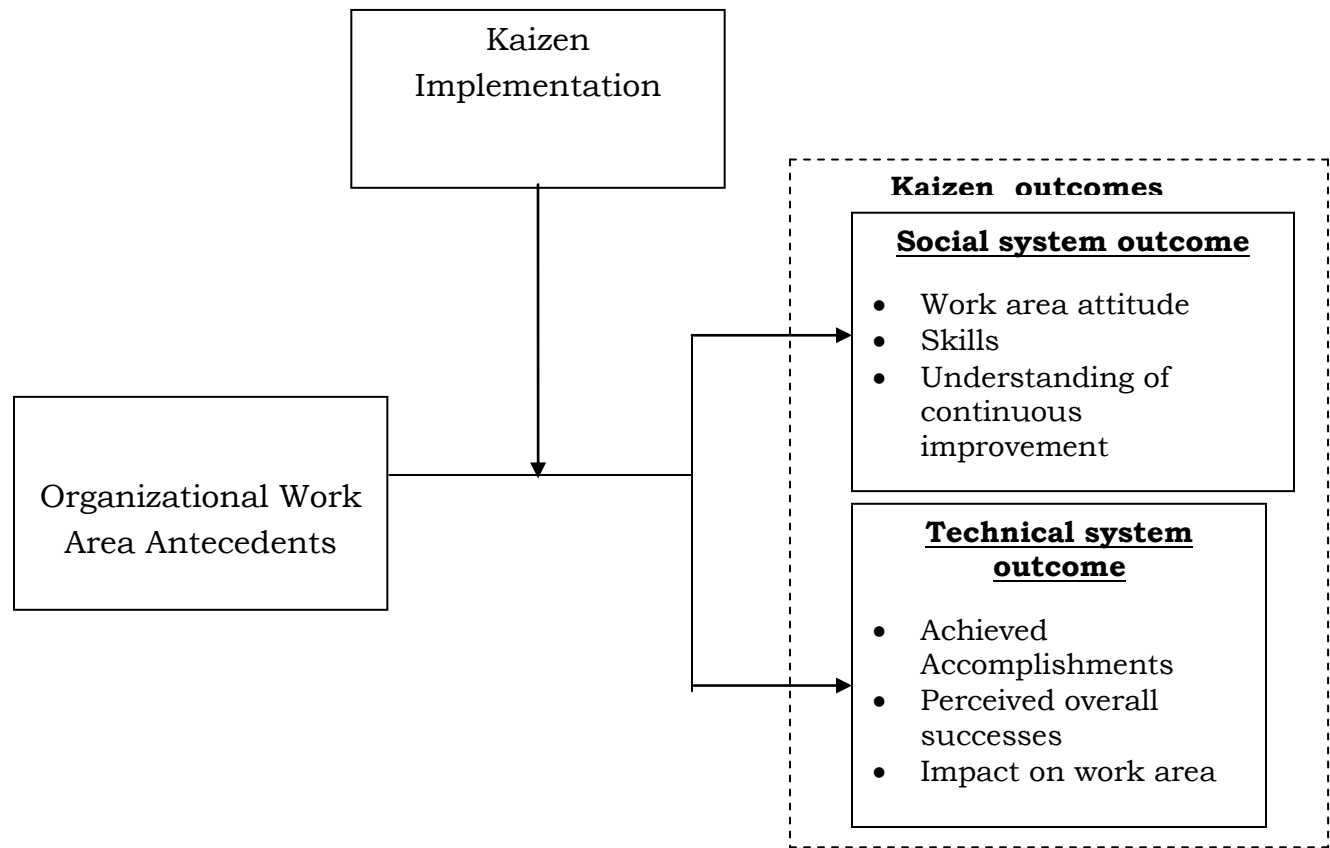
To deal with the subject in a fairly deeper length and for the convenience purpose, this study was focused on one case company Wonji/Shoa Sugar Manufacturing Factory, for the reason that, its achievements and full implementation of Kaizen management philosophy and only look into the techniques implemented by the case company. In this research, Kaizen implementation process, achievements, constraints and employee attitude towards work will be assessed.

Lack of sufficient information from respondents, respondents may give positive side of the Kaizen event, shortage of time and finance, lack of properly documented information and access to the information and constraint getting key officials will be the probable limitations of the study. However, despite the limitations the researcher will try to identify sound claims on the subject under study.

1.7 Research Purpose and Conceptual Model

The purpose of the current study is to explore the response of the research questions. The conceptual model (figure. 1) identifies the link between impacts of Kaizen implementation on the existing working area antecedents, which eventually may impact on Kaizen outcomes.

Figure 1. Conceptual model



1.8 Research Methodology

Kaizen management technique is a new reform agenda and it has been implemented in an ongoing basis since 2009. Hence, to have good understanding of the new phenomenon in its existing situation as recommended by *Robert K. Yin (2009)*, and to address the study questions, mainly qualitative research approach will be used, blended with quantitative method (in the case of archival records) for triangulation purpose.

For the exploration and understanding of human perception, motivation and behavior in different formats (speech or writing), as recommended by (*Clissett, 2008*) qualitative approach will be beneficial.

1.8.1 The Research Method

The main objective of the research is to assess Kaizen implementation process, achievements and challenges and employee work perception.

Robert K.Yin (2009) further asserts that, case studies can be done about “decision, programs, the implementation process, and organization change” thus; the intended research will be conducted by taking “Kaizen program implementation process ...” as a unit of analysis or the “case”.

For the researcher a case study will give an excellent opportunity to gain good insight into a case and aid to collect data from a variety of sources for triangulation purpose.

1.8.2 Source of Data Collection and Technique

In an attempt to get adequate and relevant information about the subject matter, both primary and secondary data source will be used in the study.

Primary data will be collected using:- questioners (likert scale), Interview (using in-depth and semi structured interviews), and key informant interview officials from different stakeholders: from company officials, Kaizen institute and sugar corporation. The respondents will be selected using purposive sampling and way of snowball, accordingly.

Secondary data will be gathered from documents, archival records, related books, journals, study findings, magazines, previous reports, working papers, photographs, videotapes and online references will be used as source of data and information for the study. In addition to the stated data gathering techniques, the researcher will conduct field observation (non-participant observation) on the sight to have full picture of the circumstances and for triangulation purpose.

1.8.2.1 Method of Sampling and Sampling Procedures

The factory currently has 2317 permanente employees out of which 2023 (87.65percent) are male and 294 (12.4 percent) are female. In addition, the organization has 249 registered (teams/KELIBU) members, among them, 39 (KELIBU) members were successfully completed the foundation stage Kaizen implementation and recognized for their success by the organization and stakeholders. These recognized KELIBU (39) members were from (fabrication workshop, agricultural operation garage and store and property administration). The departments have also a total of 281 employees.

Thus, a sample of 42 questionnaires (39 team leaders and 3 overhead staff) and 15 managers/supervisors, those responsible for Kaizen implementation were administered for this particular study.

In addition, an interview was made with purposely selected key official informants. Hence, it is easy to get an in depth information on the issue. Moreover, it helps to get information from those who have depth know how and long experiences on the issues under discussion.

1.8.3 Data Analysis and Interpretation

The data gathered from primary and secondary sources will be analyzed and interpreted using statistical method, percentage, ranges, comparison of data, pivot tables, graphs and SPSS (Scientific Package for Social Science), in accordance with their significance.

1.9 Organization of the Study

The intended research paper is organized in four chapters, the first chapter deals with introduction. Then, chapter two continued with exploring relevant Kaizen related review of literatures. Chapter three focused on the data presentation and analysis. Finally, chapter four winded up the study with conclusions and recommendations.

CHAPTER TWO

2. REVIEW OF LITERATURE

2.1 The Evolution of Kaizen

The concept of Kaizen and its activities have been developed and spread in Japan and later to the rest of the world in four different phases. The first phase was the assimilation of Western techniques particularly the American management techniques by Japan's in the early postwar periods. In the 1950's, the world market perceived Japan products as low price and low quality driven by a sense of urgency for industrial catch-up. Subsequently, Japan learned American style quality management and adapted this to the Japanese context, supported by the Union of Japanese Scientists and Engineers (JUSE) and Japan Productivity Center (JPC). Companies in Japan developed their own system of Kaizen and laid a foundation for the establishment of Japanese production management system. As a result, kaizen was originally a foreign technique which was adopted and adjusted to become a Japanese technique (*GRIPS, 2009; Desta, 2011; Karn, undated*).

The second phase was characterized by the diffusion of the concept in the 1970s (during the oil crises era) throughout Japanese companies, including small and medium sized companies and resulted in the formation of various Quality Control Circles (QCCs). The third phase was the regional spreading of kaizen beginning in the mid 1980s, which coincided with the globalization of Japanese business activities. The shift of Japanese companies to the East Asia helped the Japanese firms to duplicate the quality management system abroad. Furthermore, The Japanese companies assisted their regional partners to learn kaizen philosophy and practices through Japanese standard procedures for procurement and supplies (*GRIPS, 2009; Karn, undated*).

The fourth (Current) era, which is now beginning since 2001, has been witnessed growing interest in developing regions in East Asia, Latin America, and Africa. The initiative promotes not only Kaizen but also trade, investment and economic integration in the developing region (*Karn, undated*).

2.2. Kaizen Definition and Concept

According to (Imai,1986) who introduced kaizen to the international audience with his book, *Kaizen: The Key to Japan's Competitive Success*, kaizen is an umbrella concept, means improvement, an ongoing improvement involving everyone, top management, managers, and workers.

Imai (1997) further explained the concept of Kaizen as it is not just a management technique but a philosophy which instructs how a human should conduct his or her own life. Kaizen focuses on the way people approach work. It shows how management and workers can change their mindset together to improve their productivity. The Kaizen philosophy assumes that our way of life be it our working life, social life, or our home life should focus on constant improvement efforts.

The Kaizen concept was originally developed in Toyota Corporation and extends among other Japanese manufacturers as they gained fame in the international market for high quality products in the 1980s. Since other Japanese companies also improved their performance, Kaizen has been viewed as a key element in Japanese management and has been presented as one of the sources of the competitiveness of Japanese manufacturers (*Imai, 1986*).

Imai (1997) argue that, usually Japanese managers spent 50 percent of their time in improving and developing activities, and it is believed that people are the “engine” of continuous improvement and are base of whole improvement, consists of managers or engineers and common workers all together.

Darius (2011) further explained the concept of KAIZEN as a compound word involving two concepts: Kai (change) and Zen (Good, go to better), loosely translated as “change to the better “or continuous improvement’. Kaizen is a way of thinking and it extend also in to personal life as a “life philosophy” tomorrow must be better than today.

Figure 2 kaizen Definition

		
1	改 (Kai)	CHANGE
2	善 (Zen)	GOOD (GO TO BETTER)
1 + 2	改善 (Kaizen)	CONTINUOUS INCREMENTAL IMPROVEMENT

Source: Dysko (2011) the International Journal of Transport and Logistics

Various Scholars and practitioners believed that, Kaizen concept shared some universal ideas from industrial management theories of Elton Mayo, Maslow, McGregor and Herzberg. However, (Brunet and New, 2003) listed three core feature of Kaizen.

1. Kaizen is continues, it signifies a never ending journey for quality and efficiency.
2. Usually incremental in nature, always improving instead of reorganizing or reinstalling.
3. Participative, requiring employee participation and intelligence.

According to Imai (1986), Kaizen is an umbrella concept covering most of those “uniquely Japanese “ practices “ like customer orientation ,TQC (total quality control) robotics, QC circles, suggestion system, automation, discipline in the workplace , TPM (total productive maintenance), Kanban, quality improvement, zero defects, small-group activities, cooperative labor management relations, productivity improvement and new-product development” these principles and tools significantly helped Japanese companies to develop process oriented way of thinking that assures continues improvement involving people at all levels. Imai reduced the principle and tools to one word under the umbrella: KAIZEN.

Figure 3. KAIZEN Umbrella



Source: Imai (1986, p.4).

Table 1. Definition of Some kaizen Terms

Term	Explanation
5S	5S is a philosophy and checklist for good housekeeping to achieve greater order, efficiency and discipline in the workplace. It is derived from the Japanese words <i>Seiri</i> (Sort), <i>Seiton</i> (Straighten), <i>Seiso</i> (Shine), <i>Seiketsu</i> (Systematize), and <i>Shitsuke</i> (Standardize/Self-Discipline). There are also different English renditions.
Suggestion System	A Suggestion System is the method by which the ideas and suggestions of employees are communicated upwards through the management hierarchy to achieve cost savings or improve product quality, workplace efficiency, customer service, or working conditions. Examples range from simply placing suggestion boxes in common areas, to implementing formal programs with committees reviewing ideas and rewards given for successful adoption of those ideas.
Quality Control Circle (QCC)	QCC is a small group of workers who collectively find a problem, discuss alternative remedies, and propose a solution. QCCs voluntarily perform improvement activities within the workplace, as part of a company-wide program of mutual education, quality control, self-development and productivity improvement.
Total Quality Management (TQM)	TQM represents a number of management practices, philosophies and methods to improve the way an organization does business, makes its products, and interacts with its employees and customers. QCC activities function as an integral part of TQM. Historically, statistical quality control was born in the US, and Japan imported and developed that concept as Total Quality Control (TQC) in the 1960-70s, which evolved as TQM in the late 80s.
Toyota Production System (TPS)	TPS is the philosophy which organizes manufacturing and logistics at Toyota, including interaction with suppliers and customers. It focuses on the elimination of waste and defects at all points of production including inputs, process and final output (delivery). The term "Lean Production System" can be used interchangeably.
Just-In-Time (JIT) System	JIT, a part of TPS, is a production system aimed at eliminating non-value-adding activities of all kinds and achieving a lean production system flexible enough to accommodate fluctuations in customer orders.
Kamban System	<i>Kamban</i> refers to a communication tool in the JIT production and inventory control system, developed at Toyota. A <i>kamban</i> (signboard) is attached to a given number of parts and products in the production line, instructing the delivery of a given quantity. When the parts have all been used, the <i>kamban</i> is returned to its origin where it becomes an order to produce more.

Source: GRIPS (2009).

As Kaizen is a continuous improvement process involving everyone, managers and workers. (*Imai, 1986*) strategically explained the Kaizen concept, as a strategy to include concepts, systems and tools within the bigger picture of leadership.

Teian (1992) describes that, Kaizen represent the day to day struggle occurring in the workplace and the manner in which these struggles are overcome. Teian also suggested the Kaizen concept can be applied to any area in need of improvement.

Imai (1986, 1997) also explained improvement in Kaizen can be divided into Kaizen and innovation. According to him, Kaizen signifies small improvements as a result of ongoing efforts while, innovation involves a drastic improvement as a result of large investment of resources in new technology or equipment. Further Imai explained the relationship between management and Kaizen, for Imai, management has two major functions maintenance and improvement. For this research purpose the researcher will discuss the two major functions in the latter sections.

Womack and Jones (1996) argue that, Kaizen as a lean thinking help organizations systematically to reduce waste (muda, any activity that absorbs resources but creates or adds no value, the researcher will discuss the concept of muda on the next sections). They also stated the difficulty of muda recognition within the work area by the workers until they are told to perceive it.

Cheser (1998) explained that, Kaizen is based on small changes on a regular basis eliminating waste and continuously improving productivity, safety, and effectiveness. Further Cheser discussed the concept of Kaizen have been applied in both manufacturing and service industries too.

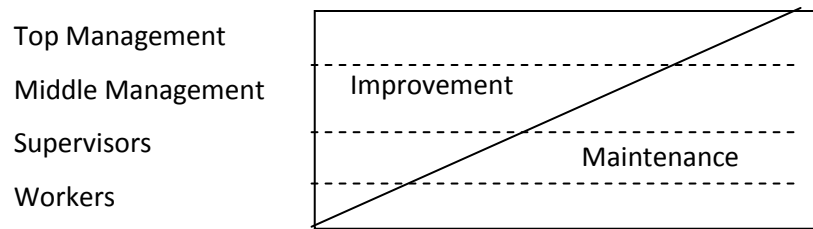
Slobodan (2011) stated, Kaizen as management tool provides global competitiveness through elimination of waste in the production process. He discussed the concept of Kaizen help organizations to change corporate culture, empowering cross functional links and integrating top down and bottom up management approach. Further he suggested one of the “secret” of Kaizen is its involvement in the informal transformation of corporate culture involving everybody.

Organizations in the developing countries are managed transactionally and they are generally characterized by lack of skilled manpower, abundant human resources, lack of proper institutionalization, capacity gaps, high defect rates, excessive inspection costs, lack of communication, unsatisfied employees and dissatisfied customers. (*Assefa, 2010*) suggested that, the problem of traditionally managed organization will partly be avoided by the application of Kaizen management techniques.

2.3 Kaizen and Management

Kaizen management has two functions: Maintenance and Improvement. Maintenance activities are directed towards maintaining existing technological, managerial, and operating standards while improvement refers to improving existing standards (*Imai, 1986, p.5*).

Figure 4. Japanese perception of job function 1



Source: Imai (1986), Japanese perception of job function 1.

2.3.1 Role of Top Management

Top management is responsible for establishing Kaizen as the overriding corporate strategy and communicating this commitment to all levels through policy deployment of the organization and allocating the resources necessary for Kaizen to work and build systems procedures, and structure conducive to Kaizen.

2.3.2 Role of Middle Management

Responsible for implementing the Kaizen policies established by top management; establishing, maintaining and improving work standards; ensuring employees receive the training necessary to understand and implement Kaizen and employees learn how to use problem solving and improvement.

2.3.3 Role of Supervisors

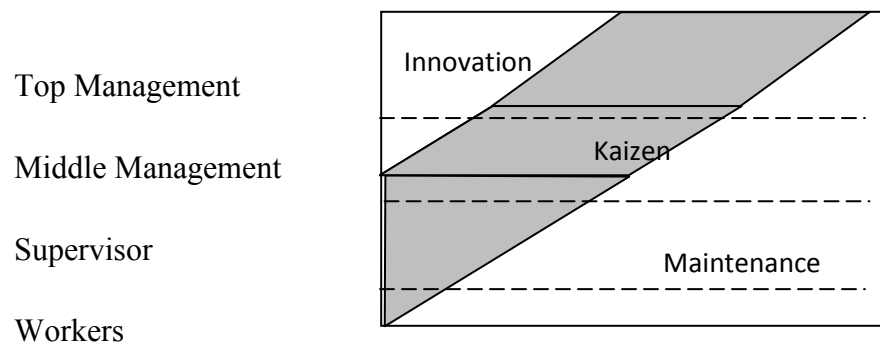
Responsible for applying the Kaizen approach in their functional roles; engage in Kaizen through the suggestion system and small group activities, practice discipline in the workshop, engage in

continues self development to become better problem solvers, improving communication at the work place; maintaining morale and providing coaching for teamwork activities.

2.3.4 Role of Employees

Responsible for participating in Kaizen through teamwork activities, making Kaizen suggestions, engaging in continuous self-improvement activities, continually enhancing job skills through education and training and continually broadening job skills through cross-functional training (p. 8).

Figure 5. Japanese perception of Job function 2.



Source: Imai (1986), Japanese perception of Job function 2.

2.4 The Concept of Levels of Kaizen

Imai (1986) described three levels and or pillars of KAIZEN: as

1. Management-Oriented Kaizen
2. Group- Oriented Kaizen and
3. Individual -Oriented Kaizen

2.4.1 Management Oriented Kaizen

Management oriented Kaizen concentrates on the most important logistic and strategic issues and provides the momentum to keep up progress and moral. Since Kaizen is everybody's job, Japanese managers generally believes that a manager should spent at least 50 percent of his time on improvement (p. 82).

2.4.2 Group Oriented Kaizen

Kaizen in group work, as a permanent approach is represented by Quality Control (QC) circles and other small group activities to solve problems. The approach also calls for the full Plan-Do-Check-Act (PDCA) cycle and demands team members not only identifying problems areas but also identify the causes , analyze them, implement and test new countermeasures , and establish new standards and procedures. The group oriented Kaizen enhances group moral and allows everybody to master the art of solving immediate problem from their own workshop (*p. 95*).

2.4.3 Individual Oriented Kaizen

Individual oriented kaizen is manifested in the form of suggestions. The suggestion system is a vehicle for caring out individual oriented Kaizen. It is often regarded as a moral booster and it does not always ask for immediate payback on each suggestion. Management attention and responsiveness are crucial if workers are to become “thinking workers” looking for improved ways to do their job continually (*pp. 110-111*).

2.5 Principles of Kaizen

Kaizen principles are a comprehensive way of approaching the continual improvement of manufacturing processes. Each principle has a significant impact upon improvement of quality and productivity.

Kaizen uses 5 main principles:

- **Processes must evolve by gradual improvement rather than radical changes**

In practice, Kaizen can be implemented by improving every aspect of a process in a step by step approach, while gradually developing employee skills through training education and increased involvement resulting in quality improvement. With quality improvement, employees meet together to discuss the current operations of the company. They decide what things can be changed that will improve the quality of the company and of the products.

- **Human resources are the most important company asset**

Kaizen must be practiced in tandem with "Respect for People" not resulting in outcomes such as layoffs. Kaizen has become successful with many manufacturing companies because the employees

are involved. They feel that their opinion is important and this boosts the employee morale. Keeping the employees happy will cause them to be more productive and satisfied with their jobs.

- **Teamwork**

One of the biggest principles of the kaizen approach is the ability to work in teams. Each department is considered a team and they will be responsible for making small changes that impact the organization. All employees from top manager to front line workers should share common values, business objectives, and information. And, should fulfill their respective role properly, enhancing their capabilities through exercising autonomy and creativity. The teams will then report to their manager. The manager takes this information to management and the entire process of kaizen is evaluated.

- **Discipline**

In order for kaizen to be effective, discipline is necessary. Management as well as workers needs to believe in the Kaizen idea and strive toward obtaining the small goals in order to reach overall success. A strong commitment to discipline and to the kaizen method will prove success for a company.

- **Continuous improvement**

Improvement must be based on statistical or quantitative evaluation of process performance. The small improvements will lead to bigger improvements throughout the entire company. This is why kaizen is called a "continuous process improvement" system or a "continual improvement method." Even with the changes, there are still small things employees can do to change the way they work. There are simple things you can do to help your employees work faster and become more efficient. All employees should have firm belief that the work place must nurture a desire for continuous improvement Kaizen demands product or service quality is improved and is monitored on a continuous basis.

2.6The Concept of Small Group Activities

Imai (1986, p. 96) defined small group activities as informal, voluntary small groups organized within the company to carry out specific tasks in the workshop. These small groups were formed for the purpose of stimulating cross development among its members. The small groups were QC circles, zero defect movements, suggestion groups, safety groups, mini think tanks and so forth.

The most popular type of small group activity is quality circles; the circles are designed to address quality, cost, safety and productivity issues (p.10). For this research purpose the researcher will discuss suggestion system and QC circles as they are the foundation for the implementation of Kaizen.

2.7The Concept of Suggestion System

The suggestion system is an extension of individual oriented Kaizen .The concept of suggestion system was brought to Japan, after the post war years by Deming and Juran and through various Japanese executives who visited USA. The American style suggestion system gave way to the Japanese suggestion system. The Japanese system stressed the moral boosting benefits of positive employee participation and evolved into individual and group suggestions in the course of time (including QC circles, voluntary groups, zero defects groups and other group based activities). While the American style stressed economic benefits and provided financial benefits (p.113).

Imai (1997, p. 10) further narrated the core benefit of suggestion system is a moral boosting benefit of positive employee participation and developing Kaizen minded and self disciplined employees. He also associated the Japanese style suggestion system as one of the key differences with the Western approach, which emphasis on the economic benefit and financial incentives of the system.

Lillrank and Kano (as cited in Karn, undated) also explained the suggestion system as a bottom up channel through which the improvement ideas and proposals are presented to management.

Imai (1986) listed the following purpose of suggestion systems in the Japanese context:

- Improves one's own work,
- Saving in energy, material and other resources
- Improvements in the working environment
- Improvements in machine and process
- Improvements in tool and jigs
- Improvements in office work
- Improvements in product quality
- Ideas for new products

- Customer service and customer relations and others.

2.8The Concept of Quality Control (QC) Circles

Quality control circles were started in Japan in 1962 by *Kaoru Ishikawa* under The Union of Japanese Scientists and Engineers (JUSE) support. The QC circles are small group activities, created voluntarily to perform quality control activities within the workplace. The small groups carrying its work continually as part of a company wide program of quality control, self development, and flow control and improvement in the workshop. The group takes the issue at hand at shop level (organize work and maintain safety) and gradually goes on to challenging tasks. The QC activities improve communications, teamwork to solve problems, and sharing their findings among themselves and with other team members in the organization (*Imai 1986; Benes Rines Tina, undated*).

Benes Rines Tina (undated) also discussed quality circle consist of a team of about 8 to 10 members from the same work area or department , while (*Karn, undated*) recommends 5 team members in a circle. According to them, the minimum number of team members in a circle has the benefit of control, improvement of quality, improves organizational communication, improves employee problem solving capabilities, and more job involvement.

Lillrank and Kano (cited in Karn, undated) defined “Quality Control” and “Circle” independently. According to Karn the “Quality Control” refers to the content of the quality activity, that is, what the circles are doing. The term “Circle” refers to the social form of the phenomenon.

2.9The Concept of Visual Management

The concept of visual management provides an opportunity to see the immediate improvements on a daily bases. Kaizen create an environment where tools, supplies and process can be seen easily. The practice of visual management involves the clear display of tangible objects or things, charts, lists, records of performance. As a result both management and workers are continuously reminded of all the elements that make the visual controls make easy for everyone to identify the

state of a normal or abnormal condition. Thus, visual management providing operators and management to spotlight problems and control team performances (*Imai 1997; Benes Rines Tina, undated*).

2.10 The Concept of Cross Functional Teams

Cross-functional teams are formed to conduct Kaizen events. “A Kaizen event is a project in which a specific area or manufacturing process has been identified as the target for improvement, and a team has been assembled to undertake the project”. A cross-functional team assembled for a Kaizen continuous improvement event is responsible for attaining the results targeted by the team itself (*Thessaloniki, 2006*).

Martin and Osterling, (2007) also described that, cross functional teams are created through Kaizen event, they defined Kaizen event as “... an effective way to train organizations to break unproductive habits and adopt the kaizen philosophy while, at the same time, achieve breakthrough performance and unprecedented results...” and the cross functional team provides an opportunity for the team members how to work and learn with one another to solve problems quickly and sustain their results.

2.11 Kaizen and Total Quality Management (TQM)

According to *Imai (1997)* one of the Japanese management thought Total Quality Control (TQC) emphasized control of the quality process, has been evolved in to a system encompassing all aspects of management and referred as Total Quality Management (TQM). Japanese TQC/TQM should not be considered as a quality control activity rather it is a strategy to aid management in becoming more competitive and incremental in all aspects. According to him Q stands for quality as a priority, but it has other objectives too like cost and delivery. T stands for total, involving everybody in the organization from top managers to front line workers and extends to suppliers, dealers and wholesalers. C stands for control or process control (key process must be identified, controlled and improved continuously). Management role here is to plan and check the process, but not to criticize the process on the bases of the result.

The Japanese inspired TQM are generally expressed in terms of a way of life for an organization as a whole , committed to total customer satisfaction through a continues process of improvement ,and the contribution and improvement of people (Mullins, 2010).

Rose (as cited in Anvari, 2011) defined TQM, as an integrated management philosophy and set of practices that emphasize continues improvement , meeting customer requirements, reducing rework, long term thinking , teamwork and increased employee involvement, process redesign , competitive benchmarking, team based problem solving , constant measurement of results and closer relationship with suppliers.

Karn (undated) also regard Kaizen as fundamental concept of TQM and he also explained Kaizen implementation could deliver the better results when organization stress on the basic of Kaizen. He treated Kaizen as significant first step to TQM.

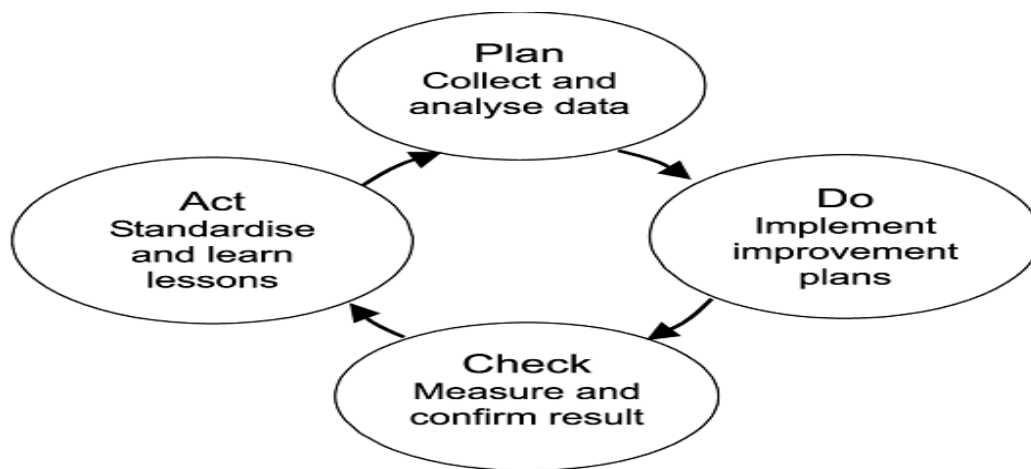
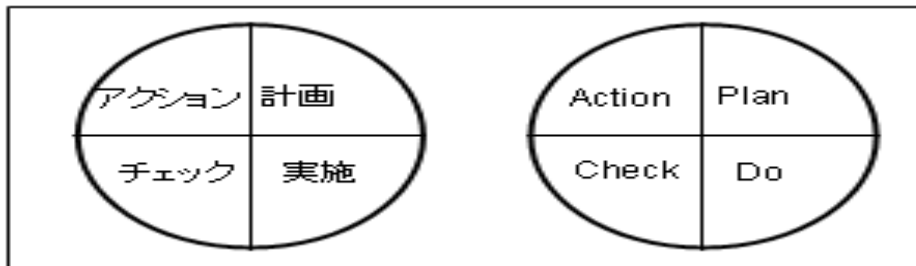
Kaizen as explained is a kind of umbrella concept that includes initiatives and activities like TQM, suggestion systems, QC circles....TQM is a movement centered on the improvement of managerial performance at all levels. It deals with: quality assurance, employee involvement, cost reduction, safety, continuous improvement, and productivity improvement. Furthermore, TQM deals with management concerns such as organizational development, cross-functional management, and quality deployment. Management has been using TQM as a concept and a tool for improving overall performance. The concept integrates fundamental management techniques, existing improvement efforts, and technical tools under a rational approach focused on continuous process improvement. Hence, TQM as a system is very analogous to a Kaizen approach. The elements and characteristics are considerably supportive of each other, and the two philosophies mandate a similar organizational mindset (*Thessaloniki, 2006*).

2.12 The Concept of PDCA Cycle

The origin of Plan-Do-Check-Act (PDCA) cycle or Deming cycle can be traced back to the Shewart (well-known statistician) thought in the 1920s. He introduced the concept of PDCA. Deming the Total Quality Management (TQM) guru modified the Shewart cycle as: Plan, Do, Study and Act. The Deming cycle is a continuous quality improvement model consisting of a logical sequence of four repetitive steps for Continuous Improvement (CI) and learning. The PDCA cycle is also known as Deming Cycle, the Deming wheel of CI (*Watson, 1986*).

This concept of the Deming wheel was recast by Japanese managers and called it the PDCA wheel. Thus, PDCA cycle is a system to ensure the continuation of Kaizen principles, the cycle is essential to make the diagnosis, plan, and train, implement, evaluate and then standardize the process (*Imai 1986; Desta, 2009*).

Figure 7: source: Moen and Norman (2009) cited in Karn



Source: Benes Rines Tina (undated)

Plan- Establishing a target and a strategy for improvement.

Do- Implementation of the plan. Making or working on the product.

Check- Confirms weather the customer is satisfied.

Act - standardizing the improved procedure so that it can be continued and the compliant will not return. The PDCA cycle ensures sustainability of improved actions.

2.13 The Concept of Kaizen Event

The concept of Kaizen and Kaizen event is new idea for Africa and Ethiopia as well, hence finding related literatures on the stated concepts were very challenging. However, the researcher will try to define the concept using some practitioner's definition and from Ethiopia Kaizen Manual.

Kirby & Greene (cited by Farris, 2006) defined and describes a Kaizen event as “a focused improvement event during which a cross-functional team of operators, engineers, etc. spends several days analyzing and implementing improvements to a specific work area”.

Farris et al., (cited by Glover, 2010) also described the Kaizen event as a focused and structured improvement project, using a dedicated cross-functional team to improve a targeted work area, with specific goals, in an accelerated timeframe.

Martin and Osterling (2007) also defined Kaizen event as “... an effective way to train organizations to break unproductive habits and adopt the kaizen philosophy while, at the same time, achieve breakthrough performance and unprecedented results...”.

Khot (2010) also explained the event as a focused approach to process improvement through muda (waste) elimination. He further discussed Kaizen event require three phases for implementation , phase one as planning and preparation, involves formation of a team , observation of the existing process, identifying the problem areas, brainstorming the possible improvements, and selecting the feasible solutions. Phase two as implementation phase, entails to implement the improvements or solutions, assess the improved process, and compare the existing and improved process to evaluate changes. The final phase is the reporting phase in this stage the event participants are reporting their results to responsible authority.

The Ethiopian Kaizen Institute Manual defines Kaizen event as a “very concentrated team- oriented effort to rapidly improve the performance of a process”. The manual uses three phases (phase one: Planning and preparation, phase two: Implementation of the event itself, phase three: presentation, celebration, and follow-up) of Kaizen event. The Ethiopian Kaizen Manual approach is similar to Khot's description above.

2.14 Concept of Gemba Kaizen

In Japanese gemba means real place, where the products or services are formed. Gemba provides the product or services that satisfy the customer and management by setting strategy and deploying policy to achieve that goal in gemba. Gemba improvement uses bottom up and top down approach and it becomes the source for achieving commonsense, low cost improvements (*Imai, 1997*).

Dysko (2011) also defines gemba as the real place in business where things are developed or where services are provided and abnormalities happen.

Imai (1997) also introduced the concept of the house of gemba where major activities are taking place on a daily basis for resource management-namely maintenance (maintaining the standard and the status quo) and Kaizen (relates to improving standards). The house of gemba shows, a bird's-eye view of activities taking place in gemba.

Imai also asserted that, daily management of resources requires standards, and the standards are the basis for daily gemba kaizen improvement. According to him, standardization in gemba means the translation of technological and engineering requirements specified by engineers in to workers day to day operational standards “translating process does not require technology or sophistication”.

Kaizen application can improve quality, reduce cost and meet customer's delivery requirements without any significant investment or introduction of new technology. The three major Kaizen activities such as muda (waste) elimination, 5S (good housekeeping) and standardization are crucial in building efficient organization. He also recommended these three Kaizen activities are the three pillars of Kaizen and they are the basic activities for Kaizen implementation in manufacturing or service industries. They are easy to understand and implement and do not require sophisticated knowledge or technology. “Anybody—any manager, supervisor, or any employee-can readily introduce these commonsense” (*p. 20*).

Dysko (2011) also argues, one of the competitive “weapons” for Japanese companies is the involvement of their human potential in the maintenance of implemented changes in gemba Kaizen.

2.15 The Concept of Waste (muda) Elimination

Muda in Japanese means waste. Any non value adding activities in the process- of people and machines are classified as muda in Japan. Hence, according to (*Imai, 1997*), Muda is any non-value-added task. Muda elimination can be the most cost effective way of improving productivity and reducing operating costs.

Imai classified Ohno's seven muda (waste) in gemba and categories as:

1. Muda of overproduction
2. Muda of inventory
3. Muda of repair/rejects
4. Muda of motion
5. Muda of processing
6. Muda of waiting
7. Muda of transport.

2.15.1 Muda of Overproduction.

Muda of overproduction is a function of the mentality of the line supervisor to be on a safe side, due to uncertainties of machine filer, rejects and absentees. It results in raw material conception before they are needed, wasteful input of utilities and manpower, additions of machinery, increase in interest burdens, additional space to store, excess inventory, added transportation and administrative costs. Imai, perceived overproduction as a crime.

2.15.2 Muda of Inventory

Products kept in the inventory do not add any value to the organization rather they occupy warehouse space, and demanding additional facilities such as warehouses and forklift. When market test or need changes product quality get worse and may even become obsolete over night. Items in the inventory gather dust (no value added), and their quality depreciate. When an inventory level is high, nobody gets series enough to deal with problems like quality, absenteeism and machine downtime and provides little room for Kaizen. Lower inventory level however, helps to identify areas of problems and forces to deal with problems as they arise. He also asserted, when the inventory level goes down and reaches the one piece flow line, it makes Kaizen a mandatory daily activity.

2.15.3 Muda of Repair or Rejects (defects).

Rejects interrupt production and require expensive rework. In today's mass production environment a malfunctioning, high speed automated machine can spew out a large number of defective products before the problem is detected. *Imai*, further discussed, too much paperwork and many design changes will also results in a muda of reworks.

2.15.4 Muda of Motion

Motion of persons not directly related to adding value is unproductive. Hence, workers should avoid walking and carrying non-value added activities, for the reason that it is not only difficult but also it represents muda.

The Ethiopian Kaizen manual also refers Muda of motion as any transport or transference of materials, parts, finished goods, from one place to another for any case.

2.15.5 Muda of Processing.

At every step in which a work piece or a piece of information is worked on, value is added and sent to the next process (*p. 79*). *Imai* refers here is muda of processing is modifying such a work piece or piece of information. He also mentioned inadequate technology or design and failure to synchronize process leads to muda in processing.

2.15.6 Muda of Waiting.

Muda of waiting occurs when the hands of the operator are ideal due to line imbalances, lack of parts or machine down time, monitoring the machine when the machine is performing value added job. The Ethiopian Kaizen manual refers muda of waiting occurs due to both ideal human and machine factors.

2.15.7 Muda of Transportation

Though, transportation in the work place is an essential part of operations, moving materials or products adds no value(*P. 80*) stressed elimination of this muda will improve workplace operation.

2.16 The Concept of 5S's

Imai (1997) described the 5S's concepts as a way of life, habits or steps for housekeeping to achieve greater order, efficiency and discipline in the workplace.

It is systematic approach to workplace organization and cleaning that will transform a disorganized workplace into an efficient running machine. It focused to improve the conditions in the working area (*Benes Rines Tina, undated*).

GRIPS (2009) also defined the 5S's as a system of steps and procedures that can be applied to individuals and teams to arrange work areas in the best manner and condition to optimize performance, comfort, safety and cleanliness.

Genobz (2010) defined the "5S's" as a structured program to systematically achieve total organization, cleanliness, and standardization in the workplace.

Imai (1997) further explained, any organization whether manufacturing or service industry should start Kaizen activities through implementing the basic three pillars which include the five steps of housekeeping (5S's), standardization and muda elimination. According to Imai, the five steps of housekeeping with their Japanese names are:

2.16.1 Seiri (Sort/ Sort Out)

Distinguished between necessary and unnecessary items in gemba and discard the latter. It requires classifying items in gemba in two categories, necessary and unnecessary and discard or removing the latter from gemba or workplace.

2.16.2 Seiton (Straighten/ Configure)

Arrange all items remaining after *seiri* in an orderly manner. Once *seiri* has been carried out, all unnecessary items have been removed from the workplace, leaving only the minimum number needed.

Seiton here means, classifying items by use and arranging them according to minimize search time and effort. Each item must have a designated address, name, volume, location and number of items must be specified (*p. 68*).

2.16.3 Seiso (Scrub/ Clean and Check /Shine the Workplace)

Seiso means cleaning the working environment, including machines, tools, floors, walls and other areas of the work place. There is also an axiom ‘Seiso is checking, monitor and restore the condition of working areas during cleaning.’ A person cleaning a machine can find many problems.

2.16.4 Seiketsu (Systematize /Conform)

Extend the concept of cleanliness to oneself and continuously practice the above three steps. Keeping one’s person clean , by such means as wearing proper clothes , safety glasses , gloves, shoes, and as well as maintaining a clean , healthy working environment.

He also gave another interpretation of Seiketsu, continuing to work on seiri, seiton and seiso continually everyday (*P. 70*).

2.16.5 Shitsuke (Standardize/Custom and Practice/ Self Discipline)

Build self discipline and make a habit of engaging in 5S’s by establishing standards. Employee must follow established and agreed upon rules in their daily work. *Imai*, further explained (*pp. 72-73*) the importance of logical implementation of the 5S’s addresses people resistance to change and prepare employee mentality for change. He listed the following benefit of 5S’s in the work place.

- Help employees acquire self discipline
- Highlighting the many kind of muda in gemba,
- Recognizing problems in the first step in eliminating muda
- Pinpointing abnormalities,
- Reduce waste full motion
- Allowing problems to visually identified and hence to solved
- Making quality problem visible

- Improving work efficiency and reducing cost of operation.

2.17 Standardization

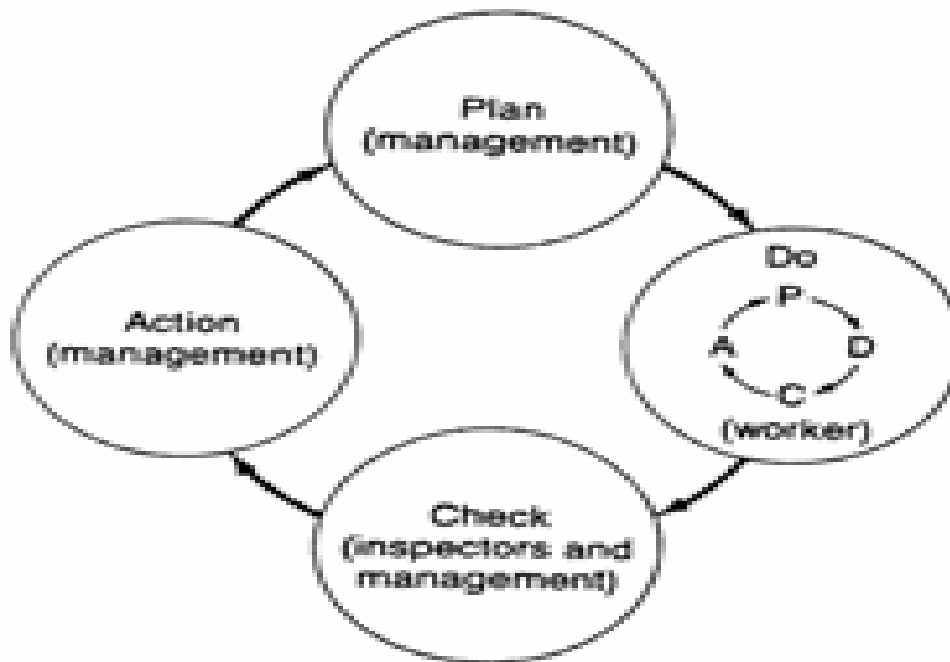
Japanese management concept boils down to one percept: maintain and improve standards, which help adhering to current technological, managerial, and operating standards, but also improving current processes. In Kaizen expressions, managers should implement the standardize-do-check-act (SDCA) cycle (*Imai, 1997 p. 51*).

With the existing standards in place without abnormalities the process is under control. To adjust the status quo and raise standards to a higher level entails plan-do-check-act (PDCA) cycle. Hence, according to Imai, standardization becomes an inseparable part of everybody's job and standards are the best way to assure quality and the most cost effective way to do the job.

Management set standards and able to cope with changing environments through implementing the Plan- Do- Check –Act (PDCA) cycle. Organizations review their standards periodically by analyzing collected data and through encouraging teams to conduct problem solving activities (*Imai 198; Thessaloniki 2006*).

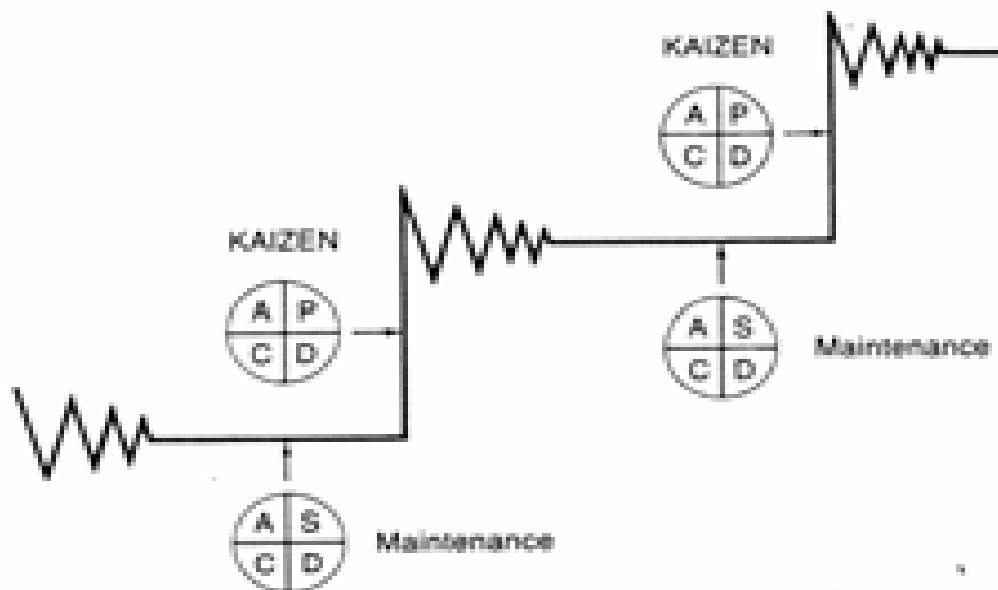
The management plans, each employee follow the planned activities, the supervisors check, and the management correct or secure every step, systematically. It is important to be seen that each one employee follows his own PDCA cycle. A successful PDCA cycle then is followed by the SDCA cycle where 'S' stands for standardization and maintenance of the new situation and PDCA stands for improvement (*Thessaloniki, 2006*).

Figure 8. The PDCA Cycle



The PDCA Cycle, Thessaloniki (2006.p14).Imai (1986 p.61)

Figure 9. PDCA and SDCA cycle



Source. PDCA and SDCA cycle (Imai, 1986, 1997; Thessaloniki, 2006).

The above figure demonstrates how improvements are registered within the organization between the standardized-do-check-act cycle and plan- do-check-act cycle. SDCA standardize and stabilizes the current process, while PDCA improves them .Thus, SDCA refers maintenance and PDCA refers Kaizen.

Imai (1997, p. 53) further listed the key features of standardization as:

- Represent the best, easiest, and safest way to do the job,
- Offer the best way to preserve know-how and expertise,
- Provide a way to measure performance,
- Show the relationship between cause and effect,
- Provide a basis for both maintenance and improvement,
- Provide objectives and indicate training goals,
- Provide a basis for training,
- Create a basis for auditing or diagnosis, and
- Provide a means for preventing recurrence of errors and minimizing variability.

2.18 Japanese Versus the Western Approach

Izumi Ohno, Kenichi Ohno, and Sayoko Uesu (2009) conceptualize the differences between the Japanese and the Western management approaches. The Japanese approach emphasizes small incremental changes under existing technology while the Western approach favors innovation based on technological breakthrough.

According to (Imai, 1986, 1997) the Japanese approach focuses on human elements and advocates people's process-oriented efforts for improvement, while the Western approach is more inclined towards reviewing performance from results-based criteria. Kaizen does not necessarily call for large investments, such as installing new machines or hiring experts. Instead, it requires continuous effort and commitment at all levels of the workforce to propose and practice the use of existing human and capital resources to improve quality and productivity.

Imai (1986, p .6) further described the Japanese perception of management consists of maintenance and improvement of standards. At the shop level, the machine worker is concerned with maintaining standards, and top management concern is improving standards. Improvement for Imai

will break down into Kaizen and innovation. Kaizen signifies change on the status quo as a result of ongoing efforts. Innovation involves radical change in the status quo as a result of large investment in new technology and equipment. According to Imai, improving standards for Western companies is primarily based on innovation business process re-engineering and benchmarking.

Ohno et al., (2009) explained the frequently recommended management tools of the Western origin are business process re-engineering (BPR) and Benchmarking. According to Ohno, BPR differs from kaizen as it aims at a fundamental and drastic change that leads to a breakthrough rather than achieving incremental improvements on a daily basis.

Hammer (1990) also defined BPR as “the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance”.

Leach (as cited in Assefa, 2010) asserted that, continuous improvement is a better and less risky means of making changes than re-engineering, claiming a continuous improvement process helps to maintain stability. Although, Assefa claim the significance of continuous improvement based on Ethiopian context, he also perceived BPR implementation pessimistically due to its poor employee assimilation, commitment and employee attitude.

The other Western tool is benchmarking, whose basic procedure is gathering information on a number of competing firms or countries engaged in the same activities, comparing the performance of targeted domestic firms against the so-called best practice, and setting goals for improvement, it focuses on identifying, understanding, and adapting outstanding practices and processes from organizations anywhere in the world to help other organization improve their performance. Technically, benchmarking identifying one's weaknesses and setting goals in relation to others, whereas kaizen is applied mainly to find room for improvement internally and realizing this through team effort (*Ohno et al., 2009*).

A range of literatures also indicate that BPR is normally used as a onetime shot. However, the application of BPR to a large extent involves considerable chaos in the organization and it is not a technique that can be used whenever a flaw is found in a process. On the other hand, some researchers also seen the two approaches as being compatible .For instance, *Love and Gunasegaram (as cited in Assefa , 2010)* have presented TQM (one of the Kaizen toolkit) as a

good starter for BPR and believe that BPR and TQM can be used jointly since they have many common features.

Ohno et al., (2009) also argues that, the two approaches have areas of overlap, and they may often produce similar prescriptions for improvement. *Dixon et al., (as cited in Assefa, 2010)* stated that, companies which have simultaneously developed Kaizen and re-engineering initiatives and found that there were several similarities.

Kaizen implementations within the organization develop important skills like, problem solving, team working, acquiring training, finding a solution independently, etc. Hence, workers become thinking workers and are more conscious about the static position. This cumulative, gradual and continues change helps to realize large step innovations by implementing BPR or benchmarking (*Assefa, 2010*). Assefa also argues, a re-engineered enterprise introduced dynamism and awakes the organization from its traditional position and might have acquired a culture for change and improvement which is helpful to implement Kaizen. He also claimed stating the other way round, after a radical change in the process, continuous improvement would perhaps be seen as contributing to adjustments.

Table 2: Comparison of Kaizen with BPR/ benchmarking

KAIZE	BPR/ Benchmarking
Collaborative work among the top, middle managers and front line workers	Derived by top management and executed by manager level personnel
Kaizen relies on proactive and spontaneous participation of frontline employees	Intensive top down effort with senior management taking the lead throughout the process
Low cost improvement	Linked with big investment
Continuous and never ending	One time improvement
Self motivated workforce and self innovative organization	Advocated((needs additional Management support)

Source: EKI

The other difference between Japanese and Western lies on the concept of Innovation. Japanese companies favor gradualist approach and the Western companies favor the great leap approach. Western management alters innovation using changes in the technological breakthrough, production technique and induction of the latest management concepts. While Kaizen is a continues process and it is undramatic and Kaizen outcome are not often immediately visible (*Imai, 1986 p. 23*).

According to Slobodan (2011) Kaizen uses small steps and conventional know how commonsense and brings wide long term results, while innovation is viewed as radical steps and seen as unilateral, costly, dramatic breakthrough, involve sophisticated technology and demands big investment.

Thessaloniki (2006), also stated, Kaizen signify small improvements made in the status quo as a result of ongoing efforts. While innovation involves a drastic improvement in the status quo as a result of a large investment in new technology and/or equipment. Thessaloniki also further argues that, Kaizen practices are complimentary with innovation “A Kaizen practice improves the status quo by bringing added value to it. Kaizen does not replace or preclude innovation. Rather, the two are complementary. After Kaizen has been exhausted, ideally, innovation should take off, and Kaizen should follow as soon as innovation is initiated. Kaizen will support the improvement of existing activities, but it will not provide the giant step forward”.

Table 3. Japanese perception of Job function

Top Management	Innovation
Middle Management	Kaizen
Supervisors	Maintenance
Workers	

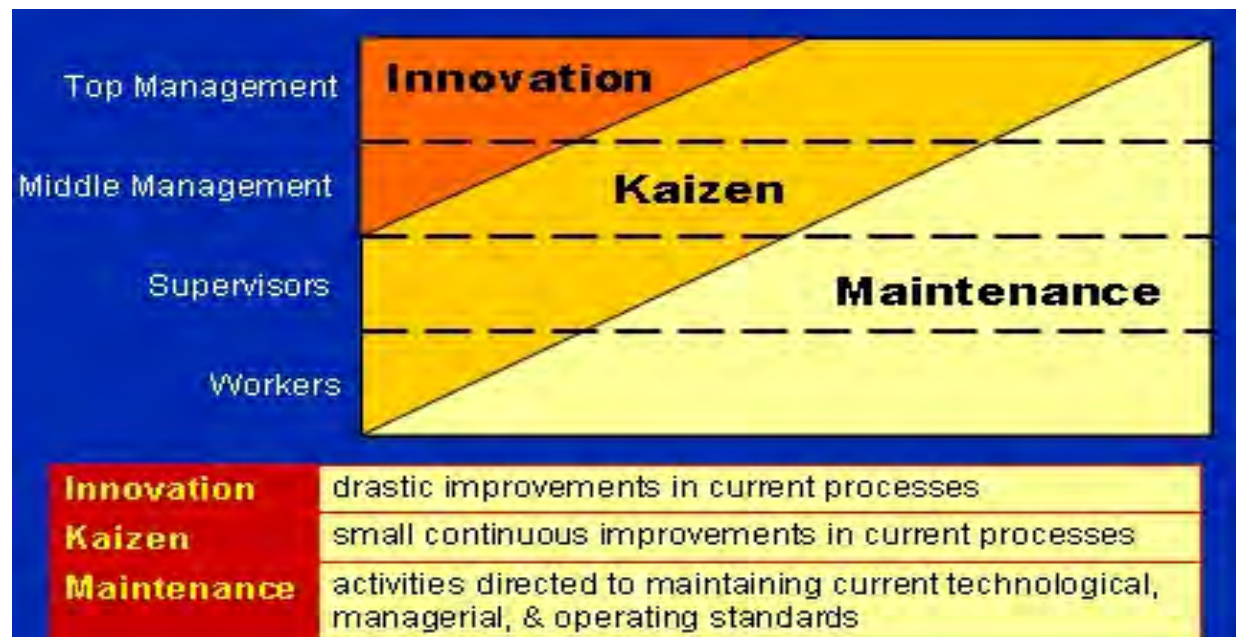
Source: Imai (1986 p.7) and *Thessaloniki (2006)*. Japanese perception of Job function

Table 4. Japanese perception of Job function

Top Management	Innovation
Middle Management	
Supervisors	Maintenance
Workers	

Source: Imai (1986 p.7) and Thessaloniki (2006). Western perception of Job function.

Figure 10. Japanese perception of Job function



Source: Imai

Table 5: Comparison of Kaizen and innovation

	<i>Kaizen</i>	<i>Innovation</i>
1. Effect	Long-term and long-lasting but undramatic	Short-term but dramatic
2. Pace	Small steps	Big steps
3. Timeframe	Continuous and incremental	Intermittent and non-incremental
4. Change	Gradual and constant	Abrupt and volatile
5. Involvement	Everybody	Select few champions
6. Approach	Collectivism, group efforts, systems approach	Rugged individualism, individual ideas and efforts
7. Mode	Maintenance and improvement	Scrap and build
8. Spark	Conventional know-how and state of the art	Technological breakthroughs, new inventions, new theories
9. Practical requirements	Requires little investment but great effort to maintain it	Requires large investment but little effort to maintain it
10. Effort orientation	People	Technology
11. Evaluation criteria	Process and efforts for better results	Results and profits
12. Advantage	Works well in slow-growth economy	Better suited to fast-growth economy

Source: Imai (1986 p.25)

2.19 Kaizen Outcomes

Through there is shortage of literatures on the concept of Kaizen in general and in Kaizen outcomes in particular, practitioners have been developing the concept of technical and social system outcomes of Kaizen after Imai's 1986 publication.

Cudney (2009) also suggested that, lean transformation (focuses on eliminating and preventing waste and improving flows) requires continuous change in the technical system, the behavioral system, and management system.

2.19.1 Technical System Outcome

According to Imai (1986) implementation of Kaizen leads to improved quality and greater productivity in the short term. He also narrated, manager may see from the short term Kaizen performance productivity increase by 30 percent, 50 percent, and even 100 percent and more, all without major capital investment.

According to *Kosandal and Farris (cited in Farris, 2006)*, the technical system outcome, targeted during Kaizen implementation includes:

- ❖ Productivity
- ❖ Floor space,
- ❖ Lead time,
- ❖ Set-up time
- ❖ Part travel time
- ❖ Percent on time delivery
- ❖ Work- in – process(WIP)
- ❖ Throughput and product design.

They also suggested the magnitude of improvement on the technical system outcome ranges from 25 percent – 100 percent of improvement, which is also similar with Imai's conclusion.

2.19.2 Social System Outcome

Kaizen is a humanistic approach, it is based on the belief that every human being can contribute to improving his workplace, were he spends one-third of his life (*Imai, 1986*). He further explained the importance of Kaizen strategy for social outcome, stating Kaizen strategy helps to overcome primitive (...who love the status quo...) state of business communities, institutions and societies all over the nation.

According to *Kosandal and Farris (cited in Farris, 2006)*, the social system outcome aligned with Kaizen continuous improvement such as:

Employee knowledge, skill and attitude, according to (*Kosandal and Farris, 2004*) these three dimensions (knowledge, skill and attitude) describe employee characteristics that are required to adequately perform desired tasks. According to them, **Knowledge** refers the body of necessary information, **Skill** refers to psychomotor capability and **Attitude** describe desire to perform a given activity.

Farris (2006) further summarized and listed social outcomes achieved through kaizen implementation include:-

- ❖ Enthusiasm for Kaizen activity participation
- ❖ Support for the kaizen activity program
- ❖ Creation of a belief that change is possible
- ❖ Increased employee attitude toward work
- ❖ Increased employee empowerment
- ❖ Improved employee attitude towards work
- ❖ Increased cross-functional cooperation, due to the cross functional nature of the team
- ❖ Support for creating a learning organization
- ❖ Support for lean manufacturing
- ❖ Development of a culture that supports long-term improvement
- ❖ Creation of a “hands on ” “do-it-now ” sense of urgency for change and improvement
- ❖ Employee pride in accomplishment made

Farris, also further stressed the importance of employee commitment, training and skill development for sustainability.

2.20 Kaizen needs in Ethiopia

In Sub-Saharan Africa the manufacturing sector is generally underprivileged compared to the agriculture and service sectors. For instance, Ethiopian manufacturing industries are deprived of technological gap and lack of basic managerial techniques like Kaizen. To speed up the industrialization process Ethiopia needs more engineers and requires capacity building in the field which is time consuming. On the other hand, managerial capacity may be improved more quickly, through managerial tools like Kaizen (*Ohno et al., 2009*).

Ethiopian manufacturing sector contribution to the GDP (Gross Domestic Product) was very small, according to (*Ishiwata, 2009*) in 2006/7 the GDP contribution was 5.1percent, in comparison to 46.3 percent of the agricultural sector and 40.3percent from the service sector. He further narrated, Ethiopia lacks presence of major multinational companies and the Ethiopian manufacturing industry is dominated by public enterprises (154) contributing 44 percent of value additions from the manufacturing sector in 2006/7.

Assefa (2010) also stated that, the contribution of the manufacturing sector has been less than 6 percent between 1998 and 2007, and the contribution of the industry sector in general accounts 13.12 percent of GDP.

Table 6. GDP of Ethiopia

% of GDP	1987	1997	2006	2007
Agriculture	54.3	57.6	47.9	46.3
Industry	13.3	10.7	12.7	13.4
Manufacturing	5.5	5.0	4.5	5.1
Services	32.5	31.7	39.4	40.3
Household final consumption expenditure	79.0	78.8	86.4	83.9
General government final consumption expenditure	10.6	8.0	12.1	10.6
Imports of goods and services	11.7	17.9	36.5	32.2

Source: World Bank 2008, cited in Assefa 2010.

MoFED (2013) further asserted that, the performances of the industrial and manufacturing sector for the first two GTP years were less than the countries planned and accounts 13.6 percent , which is almost similar to the 2006/7 performance or *Assefa's* report .

Table 7. Growth rate of GDP in 2011/12

Sector	2005/06- 2009/10 Average performance	2010/11 Performance	2011/12		2010/11 and 2011/12 average	2010/11- 2014/15 Average Plan
			Planned	Actual		
Over all real GDP	11.0	11.4	11.1	8.5	9.95	11.2
Agriculture and allied activities	8.4	9.0	8.5	4.9	6.95	8.6
Industry	10.1	15.0	17.9	13.6	14.3	20
Services	14.4	12.5	11.5	11.1	11.8	10.6

Source: MoFED

BPR in Ethiopia has been implemented by The Privatization and Public Enterprise Supervising Agency (PPESA) under MoTI and introduces benchmarking practices particularly on public enterprises. The Government has not been introduced a productivity improvement method like

Kaizen. It is considered that BPR and *kaizen* are complementary since BPR is a tool needed for innovation or radical transformation, while *kaizen* is needed for bringing in gradual and sustainable improvement to daily operations. Therefore, introduction of *kaizen* shall reinforce initiatives undertaken by BPR (*Ishiwata, 2009*).

2.20.1 Kaizen in Ethiopia

Japan International Cooperation Agency (JICA's) first Kaizen project in sub-Saharan Africa began in Ethiopia at the request of the late Prime Minister Meles Zenawi. He is the one who took the initiative to bring Kaizen to Ethiopia (*JICA, 2013*).

With the promise of the Japanese government to cooperate in the reinvigoration of Africa's economic growth. At the Fourth Tokyo International Conference for African Development (TICAD IV) also known as the Yokohama Action Plan, on may 2008. Considering the Country's GDP, *Ethiopia* "showed no hesitation and jumped to take advantage of the Japanese offer help to Ethiopia across its industries". The offer could accelerate and improve the quality and productivity of Ethiopian manufacturing enterprises (*Desta, 2009*).

On November 4, 2009 seminar was given for about 300 attendants in collaboration with Japan government and with the Ethiopian Ministry of Trade. Consequently, both Governments agreed to conduct a development study on quality and productivity improvement (KAIZEN) in Ethiopia. The Japan International Cooperation Agency (JICA) and Ministry of Trade and Industry (MoTI) in Ethiopia were responsible for setting up *KAIZEN* Institute and conduct, the implementation of *Kaizen* pilot Project, and then the selection and training of pilot project companies (*JICA, 2009; Ethiopian Kaizen Institute, 2013*).

The Kaizen project in Ethiopia has been implemented in two phases: The first phase was responsible for Kaizen pilot study around Addis Ababa and establishment of Kaizen unit. The first phase was from October 2009 –June 2011.

After reviewing the qualities and productivities of 63 companies, 30 companies were selected based the following criteria: 1) proximity to Addis Ababa, within 100 km distance, 2) contributions to exports and /or imports, 3) scale of capital, and 4) number of employees. Further more employees

of the 30 pilot companies were sent to Japan to have practical training and learning from the experience of the Japanese. By the end of the first phase of the project, from the thirty pilot companies, only 6, 4, and 8 companies were finally chosen by Ethiopian Kaizen Institute for having high possibility, good possibility, and some possibility respectively to become kaizen model companies (*Desta, 2009; Ethiopian Kaizen Institute brochure, undated; JICA, 2013*).

As part of these effort 10 staff member from the Kaizen unit and 30 members from the 30 enterprises engaged in the pilot project were sent to Japan for two week training to learn how to implement 3S (Seiri, Seiton, and Seiso) and Quality Control(QC) activities through lecture, observation and interaction with factory workers(*JICA, 2013*).

Purpose of the project (*Ethiopian Kaizen Institute brochure, undated*).

- Implementation of Kaizen to selected 30 manufacturing enterprises.
- Preparation of teaching materials associated with quality and productivity improvement(KAIZEN)
- Transferring technologies pertinent to kaizen skills and method alongside the establishment of Kaizen unit under the umbrella of Ministry of Industry.
- Formulation of the National plan to disseminate KAIZEN in Ethiopia.

The second phase was from November 2011 –October 201 and responsible to spread Kaizen to more enterprises all over Ethiopia, including small companies and micro enterprises, and to build capacity at EKI (*JICA, 2013*).

The Ethiopian Kaizen Institute (EKI) was established in 2011 by the council of Ministries Regulation No.256/2011 has been responsible for strategic planning, dissemination, capacity building...etc and Kaizen implementation all over the country.

Purpose of the second phase as narrated by (*Ethiopian Kaizen Institute brochure, undated, p. 8*):

- Establishing a system to disseminate KAIZEN to private enterprises in a sustainable manner.
- Establishing a system to disseminate KAIZEN to large and medium enterprises (LMEs).
- Establishing a system (Model) to disseminate KAIZEN for micro and small enterprises (MSEs).

CHAPTER THREE

3. DATA PRESENTATION AND ANALYSIS

In this chapter the raw data collected through questionnaire are organized, tallied and structured so as to make it manageable for presentation and analysis. The questionnaires are employee and managerial type, framed into four parts: part one deals with overall profile of the respondents, part two focuses on general Kaizen implementation issues, part three gives emphasis to the challenges encountered in implementing Kaizen. Finally, part four tried to shed light on achievements (the managerial type questionnaires have special emphasis on the social and technical system outcomes gained. In this regard, though a total of 39 questionnaires were distributed for Kaizen team leaders, only 27 could be collected filled properly and returned on time in addition 3 overhead staff (human resources, finance and supplies and property administration) were included purposively, hence a total of 30 questionnaires were summarized from non-management staff. Moreover, 15 questionnaires were distributed for management and 12 could be collected filled properly returned on time. And hence all the findings presented below are summarized from 30 questionnaires from (KELIBU/ Non-management) and 12 questionnaires were from management. Hence, in view of the descriptive nature of the study the raw data collected through abovementioned technique was counted by using frequency and converted into percentages to analyze the data in order to know the degree of intensity and tendency towards the study topic. Subsequently, data presentation was made using tables, charts and figures where necessary.

In addition, information obtained through interviews with key official informants as well as personal observations are presented through narrative description to complete the data obtained through various tools.

Moving on to the description and analysis of data, it is important to have a bird's eye view on the background information concerning the case study sugar factory.

3.1 Background of the Factory

In 1951 the Ethiopia Government granted a concession of 5,000 hectares in Wonji in the upper reaches of Awash Ethiopia which is 100 km south east of Addis Ababa, to a Dutch company called HVA (Handlers –Vereenging Amsterdam). As a demand for sugar increases in Ethiopia, the Wonji Estate expanded to include an additional 1,600 hectares of land from Shoa, about seven km away from Wonji. In 1962 the Wonji /Shoa sugar company then started sugar production.

The project started as a joint venture between the Dutch (HVA) firm and the Ethiopian government, the HVA owned 90 percent of the sugar plantation and sugar factory while Ethiopia owned 10 percent. In addition, in its operation of the sugar factory, HVA remitted 10 percent of the invested capital and 15 percent of the annual profit.

With the change of Government in 1974, under proclamation No.31 of 1975, all sugar factories in Ethiopia became nationalized and administered under the centralized bureaucratic military government.

With the end of civil war in 1991, the current government dissolved the sugar corporation by law and all existing factories were reestablished as public enterprises to be run by the Ethiopian Sugar Development Agency starting in 1992. The Agency was formed as a share company of the Development Bank of Ethiopia, Ethiopian Insurance Company and the existing sugar companies (Wonji /Shoa and Methara) in 1998. Furthermore, in 2010 under the council of Ministries regulation No.192/2010, the current Ethiopian sugar corporation was formed and replacing the former Sugar Development Agency. Currently, the corporation carrying out expansion and modernization projects at Wonji /Shoa sugar factory aiming to replace the old two factories with the new and modern plant. The expansion project currently reaches 60-70 percent of completion and has been starting test production and implementing other project activities side by side.

The factory currently has 2317 permanente employees out of which 2023(87.65percent) are male and 294 (12.4 percent) are female. In addition to permanent employees the organization has also peace rate and seasonal (monthly) workers. The factory has one general manager and five Deputy General Managers (DGM's) i.e. (agricultural operation, factory operation, human recourses, finance and supplies and facility management). The kaizen team within the change management and human resource development department found under the deputy general manager human resources,

annexed. The Kaizen unit is responsible to disseminate and follow-up Kaizen activities in the factory, jointly with the human resources. Besides, the Kaizen/change management section organize teams or in Amharic (KELIBU) members and follow performance of team members activities.

The organization has 249 registered (KELIBU) team members, among the recognized teams, 39 (KELIBU) members were successfully completed the foundation stage Kaizen implementation and recognized for their success by the organization and stakeholders. These recognized KELIBU (39) members were from (fabrication workshop, agricultural operation garage and store and property administration). The departments have a total of 281 employees.

Table 8. Summary of respondents' data

Name of Divisions	Current manpower	Team /KELIBU members
Fabrication workshop	74	11
Store and property administration	36	5
Agricultural operation garage	182	23
Total	281	39

3.2 Respondents Profile (Non-Management)

Table 9. Profile of sample respondents

Item	Response	Number of frequency	Percentage
Gender	Male	25	83.3
	Female	5	16.7
Years in current Kaizen project	1 year	3	10
	2 years	18	60
	3 years	4	13.3
	> 3 years	5	16.7

Source: Questionnaires filled in May 2014.

As indicated in the Table 9 out of the total 30 respondents 25 (83.3 percent) are male, while the rest 5 (16.7 percent) were female.

With regard to respondents Year/s in current Kaizen project, the majority of the respondents 18(60 percent) accounts two years service, 5(16.7percent) have greater than 3 years of service. The other 4(13.3percent) and 3(10 percent) replied service of 3 years and one year respectively.

Regarding management respondents gender all 12 (100 percent) of the respondents were male.

3.3 General Kaizen Implementation Issues (Non- Management)

Table 10. Opinion of team leaders on communication within the company

Item	Response	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Do you agree that communication within the company is good	Frequency	2	2	1	21	4
	Percentage	6.7	6.7	3.3	70	13.3

Source: Questionnaire filled May 2014.

As discussed in the literature review part, one of the impacts of Kaizen is to initiate a two way communication, i.e. bottom up-and top-down approach.

With respect to the respondents, out of the total respondents 21(70 percent) and 4(13.3percent) stated somewhat agree and strongly agree respectively. Thus, summing up the two positive opinions together, about 83.3 percent of respondents have the impression of importance of communication within the company. About 2(6.7 percent) and 2 (6.7 percent) of respondents respond strongly disagree and somewhat disagree. Similarly, summing up the two 13.4 percent of the respondents were negative impression on the importance of communication within the organization. On the other hand 1(3.3 percent) of respondent found neutral.

Table 11. Opinion of team leaders on the suggestion system

Items	Response	
	Frequency	Percentage
Not at all. Supervisors and managers don't care employees' opinions.	Frequency	4
	Percentage	13.3
Maybe in special cases, supervisors listen to front-line workers' opinions.	Frequency	5
	Percentage	16.7
Sometimes Supervisors and managers listen to their subordinates' opinions	Frequency	13
	Percentage	43.3
Supervisors and managers in many cases listen to opinions of employees.	Frequency	4
	Percentage	13.3
Supervisors and managers always listen to opinions of employees from some employees.	Frequency	3
	Percentage	10
Supervisors and managers always listen to opinions of employees from all levels and they are responsive	Frequency	1
	Percentage	3.3

Source: Questionnaire filled in May 2014.

With regard to respondents 13 (43.3 percent) of respondents respond supervisors and manager sometimes listen to subordinates, 5 (16.7 percent) of respondents respond supervisor and managers may be in special case listen to front line workers. 4 (13.3 percent) of respondents respond that supervisor and managers do not care about employees. 3 (10 percent) of respondents respond, supervisors and managers always listen to opinions of employees from some employees. Summing up the above four variables (43.3 percent, 16.7 percent 13.3 percent and 10 percent) is about 83.3 percent of respondents have pessimistic impression on the Kaizen suggestion system.

On the other hand 4 (13.3 percent) of respondents respond supervisors and managers in many cases listen to opinions of employees and the rest 1(3.3 percent) of respondent responded supervisors and managers always listen to opinions of employees from all levels and they are responsive. Summing up the two 16.6 percent of respondents have optimistic impression on the suggestion system.

According to *Imai (1997)* suggestion system is a core Kaizen principle. Furthermore, as explained in the literature review, the impact of Kaizen in gemba is the initiation of the suggestion system, also it permits employees to communicate operational level issues in a two way and enhance workers morale.

Therefore, from the above explanation, it can be concluded that, there are feeble practices of the suggestion system in the organization. It also implies that, there are gaps in conceptualizing the system, both from team leaders and management point of view.

Table 12. Opinion of team leaders on the team sprite

Item	Response	Not really	Only sometimes motivated	Reasonably motivated	Well motivation	Well motivated with sprit
Do you think you and your colleagues are in good spirit in working in the workplace	Frequency	6	6	2	7	9
	Percentage	20	20	6.7	23	30

Source: Questionnaire filled in May 2014.

As discussed in the literature review, team work is one of the elements of Kaizen which brings works together and solve problems together (*Genobz, 2010*). With regard to respondents, out of the total respondents 9 (30 percent) and 7 (23percent) of respondents responded well motivated with spirit and well motivated respectively. Summing up the two 53 percent of the respondents positively well motivated working with colleagues. About 2(6.7 percent) of respondents responded reasonably motivated. The rest, 6 (20 percent) and 6 (20 percent) of respondents responded only sometimes motivated and not really respectively. Similarly, summing up the last two variables 40 percent of the respondents were pessimistic impression on working with colleagues.

From the above explanation it can be concluded that, significant amount of respondents have negative impression on team work, also it implies there is confusion between the management and team leaders themselves in understanding and implementing the concept. Furthermore, it entail's negatively in the motivation, performance and sustainability of the program.

Table 13. Opinion of team leaders on the consecutive training program of the company

Item	Response	Not really	Not quite enough	Reasonable training program	Good training program	Very good training program
Do you think your company has a consecutive employee training program on kaizen?	Frequency	3	12	2	9	4
	Percentage	10	40	6.7	30	13.3

Source: Questionnaire filled in May 2014

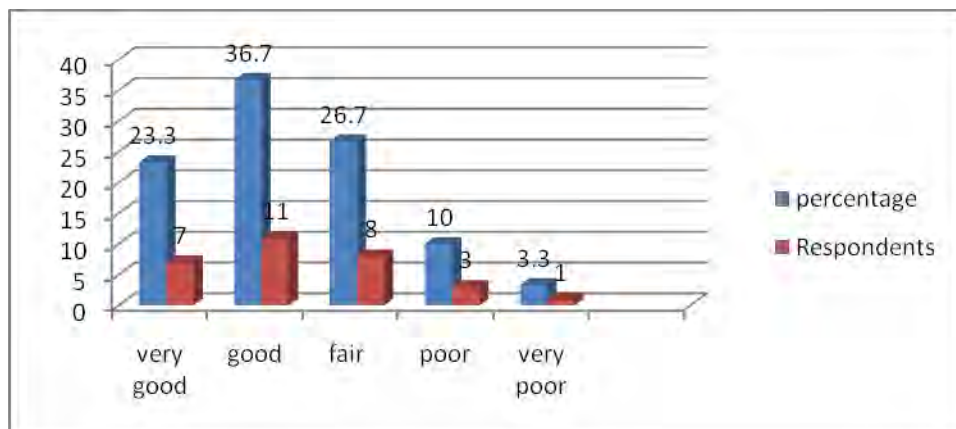
As it can be observed above from Table 13, out of the respondents 12 (40 percent) and 3 (10 percent) of the respondents responded not quite enough and no training respectively. Thus, summing up the two negative opinions together, about 50 percent of the respondents were negative impression on the consecutive training program of the company. About 4 (13.3 percent) and 9(30 percent) of respondents responded very good and good training program. On the other hand 2 (6.7 percent) of respondents replied reasonable training program.

Employees continuous training and skill development has been the critical factors for generating and sustaining Kaizen (*Imai 1986; Farris 2006*). In view of this, without systematic continuous training and skill development program implementing and sustaining the program might be a challenging issue.

Table 14. Opinion of team leaders on workers involvement in Kaizen Program

Item	Response	Very Good	Good	Fair	Poor	Very Poor
To what extent the worker involvement in Kaizen programs in your workplace can be explained?	Frequency	7	11	8	3	1
	Percentage	23.3	36.7	26.7	10	3.3

Source: Questionnaire filled in May 2014



With regard to team leaders opinion on workers involvement in Kaizen program. Out of the total respondents 11 (36.7 percent) and 7 (23.3) of respondents affirmed good and very good involvement respectively. Combining the two 60 percent of the respondents were positive impression on the involvement of workers. On the other hand 8 (26.7 percent) of the respondents reported fair. The rest 3 (10 percent) and 1(3.3 percent) of the respondents reported poor and very poor respectively.

Therefore, it can be concluded from the respondents opinion that, the majority proclaim positive involvement of workers in kaizen program in their respective work place.

Table 15. Opinion of team leaders on workers involvement in kaizen decision making

Item	Response	Not at all	Some what	To a moderate extent	Mostly	To extreme
Extent of workers involvement in kaizen decision making	Frequency	4	6	4	12	4
	Percentage	13.3	20	13.3	40	13.3

Source: Questionnaire filled in May 2014.

With regard to respondents opinion, it can be observed from the above table 15, out of the total respondents 12(40 percent) and 4(13.3 percent) affirmed involvement of workers in kaizen decision making by stating mostly and to extreme respectively. Summing up the two, 53.3 percent of respondents have positive impression on workers involvement in the work place. About 4 (13.3 percent) replied to a moderate extent. The rest 6 (20 percent) and 4(13.3 percent) of respondents responded somewhat and not at all respectively.

Therefore, it can be concluded from the respondents opinion that, the majority proclaim involvement in Kaizen decision making.

Table 16. Opinion of team leaders on the difficulty of Kaizen implementation practice and reporting result

Item	Response	Very Easy	Some what ease	Neither easy nor difficult	Somewhat difficult	Difficult
Difficulty of Kaizen implementation practice and reporting results	Frequency	2	10	6	11	1
	Percentage	6.7	33.3	20	36.7	3.3

Source: Questionnaire filled in May 2014

With regard to team leaders perception on the difficulty of Kaizen implementation practices and reporting results. As it can be observed from the above table 16, out of the total respondents 11(36.7 percent) and 1(3.3 percent) of respondents confirmed somewhat difficult and difficult respectively. Thus, summing up the two 40 percent of the respondents perceived difficultly. While 10(33.3 percent) and 2(6.7 percent) of the respondents respond somewhat easy and easy respectively. Similarly, summing up these two variable 40 percent of respondents perceived easily. On the other hand 6 (20 percent) of the respondents were responded neutral.

It can be affirmed from the respondents opinion that, significant amount (40 percent) of respondents perceived Kaizen implementation and reporting results were difficult. This shows that, there are gaps in the communication of middle level managers and team leaders. It could also imply on the conceptual understanding of middle level managers to help workers. The situation also imply on the effectiveness of the existing training and development program. Above all, it has implication on program planning, qualified human resources, communication, and training and development issues.

Table 17. Opinion of team leaders on the practiced Kaizen tools /techniques

Item	Response	5S's	Visual management	Other material
What type of Kaizen tools/ techniques/practices have you applied on your workplace?	Frequency	20	3	7
	Percentage	66.7	10	23.3

Source: Questionnaire filled in May 2014

As discussed in the literature review part, the basic base level Kaizen implementation tools include 5S's housekeeping and visual management (*Imai 1997; Cudney 2009*).

With regard to this, respondents were asked, the practiced kaizen tool/ techniques. Thus, as it can be observed from the above table 17. Out of the total respondents 20 (66.7 percent) confirmed 5S's housekeeping and 3 (10 percent) of respondents were confirmed visual management techniques. Summing up the two 76.7 percent of respondents were confirmed the practiced tools. The remaining 7(23.3 percent) of the respondents claim other material tools / or techniques used.

This shows that, 23.3 percent of respondents were unable to recognize the practiced Kaizen tools and yet the respondents were team leaders. The situation also has implication on the quality of human resources, communication and effectiveness of the existing training program.

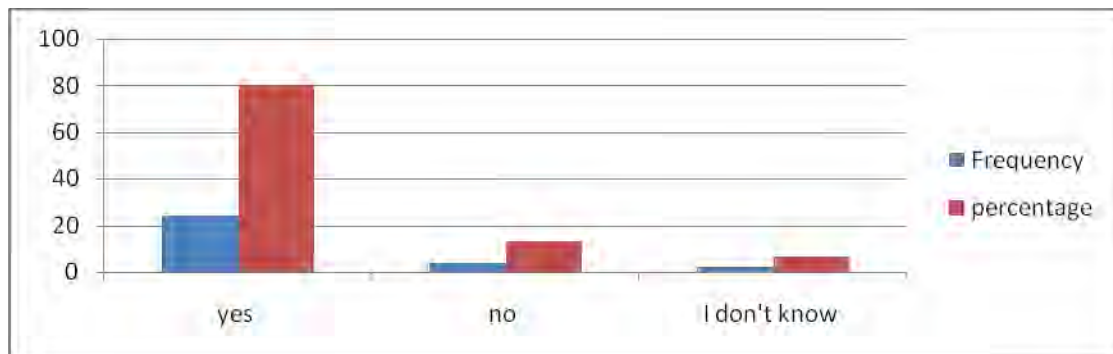
Beside this, during the researcher's observation, the researcher observed banners about the 5S's in every corner of the organization. However, 23.3 percent of the respondents were unable to recognize their environment.

Table 18. Opinion of team leaders on the adequate knowledge of continues improvement.

Item	Response	Yes	No	I don't know
Do you think you and your colleagues have adequate knowledge of continuous improvement?	Frequency	24	4	2
	Percent	80	13.3	6.7

Source: Questionnaire filled in May 2014

Figure 12. Opinion of team leaders on the adequate knowledge of continues improvement.



With regard to respondents perception on their knowledge regarding continuous improvement. As it can be observed from the above table 18, out of the total respondents 24 (80 percent) of respondents confirmed adequate knowledge of continuous improvement. The rest 4 (13.3 percent and 2(6.7 percent) of the respondents responded no and I do not know respectively. Summing up the two 20 percent of the respondents were no information about continuous improvement.

Hence, it can be concluded from the respondents opinion that, 20 percent of the respondents lack knowledge of the continuous improvement. This shows that, there are still conceptual gaps on the

knowledge of continuous improvement. The situation could also have implications on quality of products and services and it has also depressing effect on the generating and sustaining improvements.

Table 19. Opinion of team leaders on motivation:-

Items	Response	N= 30				
		Strongly Disagree	Somewh at disagree	Neither agree nor disagree	Somewh at agree	Strongly agree
I am willing to put efforts beyond that is normally expected in order to help this organization to be successful	Frequency	3	1	2	5	19
	Percentage	10	3.3	6.7	16.7	63.3
I find that my values and the organization values are very similar	Frequency	5	-	5	7	13
	Percentage	16.7	-	16.7	23.3	43.3
I am proud to tell others that I am a part of this organization	Frequency	2	2	4	3	19
	Percentage	6.7	6.7	13.3	10	63.3

Source: Questionnaire filled in May 2014.

With regarded to the above explanation, table 19 starts with willingness question to respondents. Out of the total respondents 19(63.3 percent) and 5(16.7 percent) of respondents respond strongly

agree and somewhat agree. Summing up the two 80 percent of the respondents are willing to put extra efforts to help the organization. About 3(10 percent) and 1 (3.3 percent) of the respondents respond strongly disagree and somewhat disagree respectively. On the other hand 2(6.7) of the respondents were remained neutral.

Therefore, from the above statement, it can be concluded that the majority of the respondents were willing to put extra efforts to help organization.

The other issue respondents asked were regarding organizational and employees values, out of the total respondents 13 (43.3 percent) and 7 (23.3percent) of respondents responded strongly agree and somewhat agree respectively. Summing up the two 66.6 percent of respondents have positive perception regarding their and organizational values. About 5 (16.7 percent) of respondents have negative impression regarding their and organizational values. The rest 5(16.7) were neutral.

The third issue respondents asked were, respondents pride to tell other that they are part of the organization.

Based on the data stated above, 19 (63.3 percent) of respondents responded strongly agree and somewhat agree respectively. Summing up the two positive impression 73.3 percent of respondents were agreed to tell. About 2(6.7) and 2(6.percent) of respondents respond strongly disagree and somewhat agree respectively. The rest 4(13.3 percent) were found to be neutral.

Based on the above explanation, the majority of respondents were found willing to work extra work, have similar values with the organization and have pride about their organization. Therefore, with this understanding, it can be concluded that, the majority of the respondents have positive perception for their organization.

Motivated and disciplined employees are the key for kaizen implementation and sustainability (Imai (1986).

Therefore, it can be inferred from the statement that, the positive perception of respondents could be good ground for Kaizen implementation and sustainability in the long run.

3.3.1 General Kaizen Implementation Issues (Management)

Table 20. Opinion of managers on general Kaizen implementation

Items	Response	N=12				
		Very good	Good	Fair	Poor	Very poor
Extent of functional units involvement in Kaizen practices	Frequency	10	1	1		
	percentage	83.3	8.3	8.3		
Extent of workers involvement in Kaizen program	Frequency	7	3	2		
	Percentage	58.3	25	16.7		
Extent of the Kaizen team decision making in Kaizen activities in the company	Frequency	3	8	1		
	percentage	25	66.7	8.3		

Source: Questionnaire filled in May 2014.

As it can be explained from the above table 20, respondents were asked to state their opinion regarding the extent of commitment to Kaizen practices in all functional units of the organization. Out of the total respondent 10 (83.3 percent) and 1(8.3percent) of the respondents responded very good and good respectively. About 1(8.3percent) of respondents responded fair. Summing up the two good impressions 91.6 percent of respondents have good impression on the stated issue.

The other issue respondents asked were, the extent of workers involvement in Kaizen program. Out of the total respondents opinion 7 (58.3 percent) and 3(25 percent) of respondents responded very good and good respectively. Summing up the two 83.3 percent of respondents have positive impression on workers involvement on Kaizen. On the other hand 2(16.7 percent) of respondents responded fair.

With regard to the last question, out of the total 3(25 percent) and 8(66.7 percent) of respondents responded very good and good respectively. Again, summing up the two good impressions 91.7 percent of respondents have positive impression for the issue. On the other hand 1(8.3 percent) of respondent responded fair.

From the above stated statements, it can be concluded that, management have positive impression in workers involvement in Kaizen activities as well as in Kaizen decision making.

Table 21. Opinion of managers on Kaizen as a good company strategy.

Item	Response	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Do you agree that Kaizen is a good strategy for your company?	Frequency	-	-	-	2	10
	Percentage	-	-	-	16.7	83.3

Source: Questionnaire filled in May 2014.

Based on the opinion of respondents, out of the total 10 (83.3 percent) and 2(16.7percent) of respondents responded strongly agree and somewhat agree respectively. Summing up the two, all the management respondents (100 percent) agreed on Kaizen as a good company strategy.

Table 22. Opinion of managers on the effective communication of Kaizen Implementation plan, goals and values to the relevant people.

Item	Response	Not really	Maybe to some extent	More or less reasonably	Mostly properly done	Very well done
Do you think the company's Kaizen implementation plan, goals and values are communicated effectively to all the relevant people?	Frequency	-	1	2	2	7
	percentage	-	8.3	16.7	16.7	58.3

Source: Questionnaire filled in May 2014.

With regard to the above table 22, out of the total respondents 7(58.3 percent) and 2(16.7 percent) of respondents responded very well done and mostly properly done respectively. About 2 (16.7

percent) of respondents responded more or less properly done. Summing up the first two 75 percent of the respondents have optimistic impressions on the issue. The rest 1(8.3 percent) of the respondent responded may be to some extent.

Therefore, from the above explanation it can be concluded that, 25 percent of the respondent have unclear impression on the effective communication of plans, goals, and values to the relevant people. Furthermore, it has also depressing impacts on the implementation process.

Table 23. Opinion of managers on their perception on Kaizen as a tool

Item	Response	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Kaizen technique has been perceived as a helpful tool for management and employee	Frequency		1		2	8
	Percentage		8.3		16.7	66.7

Source: Questionnaire filled in May 2014.

Regarding perception of management, out of the total respondents 8 (66.7 percent) of respondents were responded strongly agree and 2 (16.7 percent) of respondents were responded somewhat agree respectively. Summing up the two 86.4 percent of respondents have positive perception about Kaizen as a tool. On the other hand 1(8.3 percent) of respondent responded somewhat disagree.

3.4 Implementation Challenge Related Information (Non- Management)

As mentioned in the literature review, Kaizen as a management tool has social and technical advantages to the business community as well as to the nation (*Imai 1997; Cudney, 2009*).

Respondents were asked to state their needs in order to fully implement Kaizen in their workplace to date. In connection with this, the researcher's ultimately ask over respondents to state the current prevailing challenges.

Table 24. Opinion of team leaders on the prevailing Kaizen implementation challenges.

Item	Response	
Good team spirit and motivation	Frequency	4
	Percentage	13.3
Necessary materials	Frequency	7
	Percentage	23.3
Training and information about Kaizen	Frequency	5
	Percentage	16.7
Incentives	Frequency	3
	Percentage	10
Qualified human resource	Frequency	4
	Percentage	13.3
Qualified supervisor	Frequency	7
	Percentage	23.3

Source: Questionnaire filled in May 2014.

In view of the above summary and explanation, out of the total respondents 7(23.3percent) of respondents replied necessary materials. Similarly, 7(23.3percent) of respondents responded qualified supervisors. About 5(16.7percent) respondents stated training and information about Kaizen. 4 (13.3 percent) of the respondents narrated good team spirit and motivation, similarly 4(13.3percent) of respondents responded qualified human resources in their work area. The rest 3 (10 percent) of respondents responded incentives to fully implement Kaizen practice in their work area.

With this understanding, it can be concluded that the major prevailing challenges accordingly are, lack of necessary materials, qualified supervisors, lack of training and adequate information about Kaizen, good team spirit and motivation, qualified human resources and incentives.

In addition to this, the researcher's observation and interview with key respondents confirmed that, lack of necessary materials and equipments were also the major challenges observed.

Hence, it can be inferred from the above explanation that, incentives were the least challenges stated by the respondents. Despite the fact that, lack of necessary materials, lack of adequate training and information about Kaizen, qualified human resources, qualified supervisors and good team spirit and motivation were the constraints narrated by respondents.

Therefore, it is possible to say that, where these elements are not adequate or lacking. It is very difficult to assess practical implementation and standardization.

3.4.1 Top Management and Administration Related Challenges

Table 25. Opinion of team leaders on top management and administration related challenges

Items	Response	N= 30				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Top management commitment, visionary leadership and support are weak	Frequency	8	6	5	4	7
	Percentage	26.7	20	16.7	13.3	23.3
Lack of coordination, communication and integration within departments hinder Kaizen implementation	Frequency	7	5	6	4	8
	Percentage	23.3	16.7	20	13.3	26.7

Source: Questionnaire filled in May 2014.

In view of the above explanation, the above table 25, starts with top management commitment, visionary leadership and support challenges. Out of the total respondents 8(26.7 percent) and 6(20

percent) stated strongly disagree and somewhat disagree respectively. Thus, summing up the two positive impressions together about 46.7 percent of respondents expressed the presence of the above stated issues.

The rest 4(13.3 percent) and 7 (23.3percent) of respondents confirmed absence of management commitment, visionary leadership and support by somewhat agree and strongly agree respectively. On the other hand 5(16.7 percent) of respondents were found to be neutral.

Hence, from the opinion of the respondents stated above, it can be concluded that there are considerable challenges from the side of top management.

The other issue is concerned with administrative challenges, out of the total respondents 8 (26.7 percent) strongly agree and 4(13 percent) of respondents somewhat agreed on the absence of the stated issues. Furthermore, 7 (23.3 percent) and 5(16.7 percent) of respondents strongly disagree and somewhat disagree respectively, by the absence of the stated issue. About 6(20percent) of the respondents were found neutral.

3.4.2 Implementation Challenges Related Information (Management)

Table 26. Opinion of managers on Kaizen Implementation challenges

Item	Response				
	Resistance to change	5S's implementation (sorting)	Continuous meeting	No. challenge	Not responded
What were the biggest challenges during kaizen implementation in your company?					
Frequency	5	2	1	1	3
Percentage	41.7	16.6	8.3	8.3	25

Source: Questionnaire filled in May 2014.

Respondents were asked to explain the challenges encountered during implementation. With regard to the above table, out of the total respondents 5(41.7 percent) of respondents replied resistance to change. About 2(16.6 percent) of the respondents responded 5S's implementation (sorting). 1 (8.3 percent) and 1(8.3percent) of respondents responded continuous meeting and no challenge

respectively. On the other hand 3(25 percent) of the respondents refrained from responding on the issue under discussion

Hence, from the above discussion it can be concluded that, the biggest challenge during Kaizen implementation was resistance to change.

In addition to this, the researcher interview with key official also shows that resistance to change was the biggest challenge during implementation. Besides this, the key official also stated, through continuous step by step meeting with front line workers and by showing the progress of the working environment, management has been in the process of overcoming the problem.

3.4.2.1 Prevailing Operational Challenges

Table 27. Opinion of managers on prevailing operational challenges to date

Item	Response				
Which pitfalls and difficulties are still influencing your operation today?	Attitudinal Problems	Necessary Materials	Perceived as additional Job	Lack of Commitment and Motivation	NO response
Frequency	7	2	2	2	1
Percentage	58.3	16.7	16.7	16.7	8.3

Source: Questionnaire filled in May 2014.

With regard to management opinion on the difficulties still influencing the operation, out of the total respondents 7 (58.3 percent) of the respondents responded attitudinal problem, about 2 (16.7 percent) of respondents were responded necessary materials. Similarly, 2(16.7 percent) of respondents responded lack of commitment and motivation. The rest 1(8.3 percent) of respondent did not respond on the issue.

From the above explanation it can be concluded that, attitudinal problems are still the major problems influencing the operation. Moreover, lack of necessary materials and lack of commitment and motivations are also significant challenges stated by the respondents.

The researcher's observation on the site have also revealed that, some departments who completed first phase Kaizen implementation and recognized by the organization were in need of materials. Thus, workers had/ have lost commitment and motivation as they are there to accomplished assignments.

3.5 Organizational and Change Related Challenges

Table 28. Opinion of managers on organizational and change related challenges.

Items	Response	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Kaizen implementation brought quality products and services in terms of efficiency, effectiveness and transparency.	Frequency		1	1	1	9
	Percentage		8.3	8.3	8.3	7.5
Kaizen has been creating organizational attitudes and values for change	Frequency			2	4	6
	Percentage			16.7	33.3	50
Organizational readiness to change has start on as result of Kaizen implementation	Frequency			3	4	5
	Percentage			25	33.3	41.6
There is established systems for training and education in the organization to nurture the required values of Kaizen processes	Frequency		1	5	4	2
	Percentage		8.2	41.6	33.3	16.7

Source: Questionnaire filled in May 2014.

With regard to the first question, out of the total respondents 9 (75 percent) and 1 (8.3percent) of respondents responded strongly agree and somewhat agree respectively. About 1(8.3percent) of respondent responded somewhat disagree. The rest, 1(8.3 percent) of respondent responded neutral.

Regarding the second issue, out of the total respondents 6 (50 percent) and 4 (33.3 percent) of respondents responded strongly agree and somewhat agree respectively. Summing up the two, 83.3 percent of respondent have positive impression on organization values.

From the above explanation, it can be confirmed that, employees opinion (table, 19) and managements opinion correlates each other. Therefore, it can be concluded that, Kaizen had been creating organizational attitudes and value for change.

Regarding the third issue, out of the total respondents 5 (41.6 percent) and 4 (33.3 percent) of respondents responded strongly agree and somewhat agree respectively. Summing up the two, 74.9 percent of respondents have positive impression on the issue. The rest 3 (25percent) of the respondents responded neither agree nor disagree.

This shows that 25 percent of the respondents were found indifferent; also it has implication on the conceptual understanding of the respondents about kaizen principle.

Regarding the final question, out of the total respondents 4 (33.3percent) and 2 (16.7 percent) of respondents responded somewhat agree and strongly agree respectively. About 5 (41.6 percent) of respondents responded neither agree nor disagree. The rest 1(8.3percent) responded somewhat disagree.

In view of the established training and education system 50 percent of the respondents were found somewhat disagree or neutral with the existing training and education system. This shows that there is weak/ poor system in the organization for training and education. Similarly, employees' opinion also positively correlates with management opinion.

Therefore, from the statement above, it can be concluded that, the weak training or education system will have negative impact on the implementation and sustainability of the program.

3.6 Organizational Structure and Human Resources Related Challenges

Table 29. Opinion of managers on organizational structure and human resource related challenges

Items	Response	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The traditional hierarchical work trends are still the obstacles for change	Frequency		1	1	4	6
	Percentage		8.3	8.3	33.3	50
Skilled manpower is one of the capacity constraint to implement Kaizen	Frequency	2	3	1	4	2
	Percentage	16.7	25	8.3	33.3	16.7

Source: Questionnaire filled in May 2014.

With regard the first question, out of the total 6 (50 percent) and 4 (33.3 percent) of respondents responded strongly agree and somewhat agree respectively. Summing up the two, 83.3 percent of respondents have the impression of the traditional hierarchical work trends are still challenges for change. 1 (8.3 percent) of respondents responded neither agree nor disagree. The rest 1 (8.3 percent) of respondent responded somewhat disagree.

According to (*Imai, 1986*), Kaizen is about organizational culture change; it is about changing the states quo (the mind set). In this regard, overcoming the traditional hierarchical work trend needs long way to go.

3.7 Achievement Related Information

Table 30. Opinion of managers on measurable achieved results

Item	Response		
Measurable results achieved to date	5S's implementation	Minimization of cost	Floor space , cycle time delivery time reduction
Frequency	5	4	3
Percentage	41.6	33.3	25

Source: Questionnaire filled in May 2014.

With regard to this, managers were asked to explain the achieved measurable results of Kaizen implementation. Out of the total respondents, 5 (41.6 percent) of respondents responded implementation of 5S's. About 4 (33.3 percent) of respondents respond minimization of costs. The rest 3 (25 percent) were responded flood space, cycle and delivery time reduction as an achievement.

With regard to the above explanation. The researcher's document review and observation also confirmed that. Birr. 55,682,602.13 were minimized from operational costs. In addition, the daily performance of "fana riges" were increased from 8.4 hectare per day to 23 hectare per day. Furthermore the report also shows that 100 meter square floor space had secured from store and delivery time has also significantly reduced.

Therefore, it can be concluded that, the reported results are the outcome of kaizen implementation. (*Imai 1986; Farris, 2006*) also suggested that, kaizen implementation has short term technical and long term social system outcomes. Based on this, the reported results can be inferred as a good ground for the technical system outcome.

Table 31. Opinion of managers on non-measurable results achieved

Item	Response			
	Good working environment	Attitudinal change	Workers motivation	No result
Non measurable results achieved to date				
Frequency	5	4	2	1
Percentage	41.7	33.3	16.7	8.3

Source: Questionnaire filled in May 2014.

With regard to non/measurable results, out of the total 5 (41.7 percent) of the respondents responded good working environment. About 4 (33.3 percent) of respondents replied attitudinal change. 2 (16.7) of respondents respond workers motivation. On the other hand 1(8.3percent) of respondent respond no result.

3.8 Social System Related Information

Table 32. Opinion of managers on workers attitude.

Items	Response	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Kaizen increased employees interest in the work area	Frequency		1		4	7
	Percentage		8.3		33.3	58.3
Kaizen motivated employees/ team members interest to perform better	Frequency			1	5	6
	Percentage			8.3	41.7	50

Source: Questionnaire filled in May 2014.

With regard to the first question, respondents were asked to give their opinion regarding employees' interest in the work area. Out of the total respondents 7 (58.3 percent) and 4(33.3

percent) of respondents responded strongly agree and somewhat agree respectively. Summing up the two 91.6 percent of respondents have positive impression on employees interest in the work area. On the other hand 1(8.3percent) of respondent respond neither agree nor disagree.

Therefore, from the above statement it can be concluded that, the majority of employees have positive interest in their work area.

The other issue raised here is, motivational and performance related issues. Out of the total respondents 6(50 percent) and 5 (41.7 percent) of respondents responded strongly agree and somewhat agree respectively. Combining the two 91.7 percent of respondents have positive impression on the issue.

From the statement above it can be concluded that, the majority of workers have interest and motivated in their work area. Beside this, workers opinion on (table 19) correlate positively with management opinion. Therefore, it can be inferred that, the majority of works have positive attitude for their work area.

Table 33. Opinion of managers on skill related information

Items	Response	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Employees/team members communicate new ideas as a result of Kaizen members	Frequency		1		6	5
	Percentage		8.3		50	41.7
Employees/ team members identify improvement easily with others in the work station as a result of Kaizen	Frequency		2	1	3	6
	Percentage		16.7	8.3	25	50
Kaizen provides opportunity to participation in decision making	Frequency			1	9	2
	Percentage			8.3	75	16.7

Source: Questionnaire filled in May 2014.

In light of the above explanation, the above table 33, starts with skill related to communication. Out of the total respondents 6 (50 percent) and 5 (41.7 percent) of respondents stated somewhat agree and strongly agree respectively. Thus, summing up the two together 91.7 percent of respondents have positive impression for the issue. The rest 1 (8.3 percent) of respondent respond somewhat disagree.

Hence, based on the respondent result, team members /employees communicate new ideas as a result of kaizen. It also implies that employees are acquiring new skills as a result of Kaizen.

With regard to the second issue, out of the total respondents 6(50 percent) and 3 (25 percent) of respondents responded strongly agree and somewhat agree respectively. About 2 (16.7 percent) of respondents were responded somewhat disagree. The rest 1 (8.3 percent) confirmed neutral. Summing up the two 75 percent of the respondents have positive impressions on the issue.

Besides this, the researcher's observation on the site shows that, employees are easily identified the improved work in their work station and explained about it with emotion.

With regard to the third issue, out of the total respondents 9(75 percent) and 2(16.7 percent) of respondents responded somewhat agree and strongly agree respectively. The rest 1(8.3 percent) of respondent found neutral. Summing up the two positive results 91.7 percent of respondents agreed on the issue.

Besides this, employees response on table 15 correlate positively with the result under discussion. Therefore, from the above statement it can be inferred that, employees started exercise in Kaizen decision making.

Table 34. Opinion of managers on knowledge of continuous improvement

Item	Response	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Overall, Kaizen technique increased knowledge of continuous improvement	Frequency				6	6
	Percentage				50	50

Source: Questionnaire filled in May 2014.

With regard to management opinion on knowledge of continuous improvement, out of the total respondents 6 (50 percent) and 6 (50 percent) of the respondents responded strongly agree and somewhat agree respectively. This shows that, management have strong opinion on the issue.

As it is also observed from table 18 above the majority (80 percent) of the respondents opinion positively correlates with the above management opinion. Hence, it can be concluded that, the majority of respondents (management and employees) have knowledge of continuous improvement.

3.9 Technical System Related Information

Table 35. Opinion of managers on achieved accomplishments

Item	Response	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Over all, Kaizen improved process cycle time, on time delivery and floor space usage.	Frequency		2		6	4
	Percentage		16.7		50	33.3

Source: Questionnaire filled in May 2014.

Regarding achieved accomplishments, out of the total respondents 6(50 percent) and 4(3.3 percent) of respondents responded somewhat agree and strongly agree respectively. Summing up the two 83.3 percent of respondents agreed on the achieved accomplishments. The rest 2(16.7) percent were found neutral.

Table 36. Opinion of managers on Kaizen work area impact

Items	Response	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strong agree
Kaizen had a positive effect on work area /station	Frequency				3	9
	Percentage				25	75
Kaizen enhances employee's ability to measure impact of change in the work area	Frequency				3	9
	Percentage				25	75

Source: Questionnaire filled in May 2014.

With regard to the first, out of the total respondents 9 (75 percent) and 3(25percent) of respondents responded strongly agree and somewhat agree respectively. Summing up the two 100 percent of respondents have positive impression on the issue.

Regarding the second issue, out of the total respondents 9(75percent) and 3 (25percent) of respondents responded strongly agree and somewhat agree respectively.

Therefore, from the above statement it can be concluded that, Kaizen implementation had positive impact in the work area / station.

Table 37. Opinion of managers on overall perceived success

Item	Response	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Over all, Kaizen implementation was a success	Frequency		1	1	3	8
	percentage			8.3	25	66.7

Source: Questionnaire filled in May 2014.

With regard to overall Kaizen perceived success, out of the total, 8 (66.7 percent) and 3(25 percent) of respondents responded strongly agree and somewhat agree respectively. 1(8.3 percent) of respondent respond neither agree nor disagree.

Table 38. Opinion of managers on Kaizen application in the case of Ethiopia

Item	Response	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
The general perception of Kaizen cannot be applied in case of Ethiopia	Frequency	7	2	3		
	Percentage	58.3	16.7	25		

Source: Questionnaire filled in May 2014.

With regard to Kaizen applicability, out of the total respondents, 7 (percent) and 2 (16.7 percent) of respondents responded strongly disagree and somewhat disagree respectively. The rest 3(25 percent) of respondents were found neutral. Summing up the first two, 81.3 percent of respondents have positive impression on the applicability of Kaizen in the case of Ethiopia.

CHAPTER FOUR

4. CONCLUSION AND RECOMMENDATIONS

4.1 Conclusions

The Kaizen principles and techniques has been implementing in Ethiopia, not only to speed up the manufacturing sector performance but also to transform the social and technical aspects of the sector as well as the nation.

The objective of this study paper was to assess Kaizen program implementation, major achievements, and challenges and to explore the impact of Kaizen program implementation on employees' attitude towards work trend. Hence, based on study encouraging findings were evidenced from the implementation of Kaizen in Wonji/Shoa sugar factory.

These include:

- ❖ The determinant commitment shown by top management and employees of the company are encouraging.
- ❖ Employees are positively involved in kaizen activities and in kaizen decision making
- ❖ Employees and management have positive perception for the company value system
- ❖ The area surrounding the factory are enhanced with gardens
- ❖ Kaizen has been creating company values system for change
- ❖ Employees are acquiring new skills as a result of kaizen
- ❖ Employees have positive attitude and interest

Despite the encouraging efforts in the implementation of Kaizen, the following challenges were also evidenced from the study:-

These include:

- ❖ The majority of respondents have pessimistic impression on the kaizen suggestion system.

- ❖ Lack of established system for training and education.
- ❖ Lack of adequate training and information about kaizen.
- ❖ Lack of understanding about Kaizen management tools and techniques, as a tool.
- ❖ Misunderstanding by management in communicating Kaizen implementation planes, goals and values.
- ❖ Difficulty in comprehending Kaizen implementation practices and reporting results.
- ❖ Lack of necessary materials.
- ❖ Difficulty to break still rigid hierarchical structures
- ❖ Feeble coordination, communication and integration within departments.
- ❖ Lack of skilled man power
- ❖ Employee resistance to change
- ❖ Shortage of proper safety and health materials and equipments

4.2 Recommendations

The improvements of Kaizen achieved so far should be protected and sustained. Equally, however, the practical challenges demonstrated by the study should get attention and be resolved. Indeed, based on the findings and challenges witnessed by the respondents as well as researcher personal observation, the following recommendations are suggested.

- ❖ To begin with the suggestion system, the suggestion system is one of the core principles of Kaizen. The system helps both management and workers to communicate two way communications and has also motivational values for employees. Beside this, the system serves as an information channel for the continuous improvement process. Hence, missing this process will have serious impacts on the implementation process as well as sustainability. Therefore, managers/supervisors should give at most attention and consideration for the suggestion system as well as the way workers opinions and suggestions are managed.
- ❖ Regarding the training and education system. Kaizen philosophy is a continuous learning process which promotes learning culture. Kaizen is all about organizational culture change through continuous training and development. Hence, establishing training and

development system within the organization is crucial not only for the implementation of the program but also for the sustainability of the program. Therefore, the organization should set up company own training and development wing with necessary materials and provide both on job and off job trainings continually to enhance and develop the awareness of performers.

- ❖ The other issue raised here is management's uncertainty in communicating Kaizen goals and values. Accordingly, top management should give due consideration and emphasis to harness the knowledge, skills, and attitudes of middle level managers and supervisors. For the reason that, middle level managers and supervisor are shapers of Kaizen implementation with frontline workers.
- ❖ The other challenge manifested with the factory was resistance to change. Resistance is often related with the mind set of workers .Besides this; it takes quite a long time and can hinder the speed of changes emanating from Kaizen as well as the outcomes at the end if not treated well in time. Therefore, the factory should solve the challenge by creating awareness, providing training and education on the issues.
- ❖ Furthermore, the organization should provide refresher training for implementers regularly so as to reduce the difficulty of comprehending Kaizen practices and reporting.
- ❖ The success of the organization is through its qualified and skilled human resources, because human resources are the driver of the Kaizen initiative. Hence, the factory should revise the different human resource policies (such as, recruitment, retention mechanism, pay scale) so as to recruit and retain skilled human resources.
- ❖ Moreover the other issues raised by the respondents were the shortage of necessary materials. Without the necessary input materials expecting workers to deliver results are illogical; hence management should provide the necessary materials on time with the relevant amount.

- ❖ Regarding the feeble coordination, communication, and integration within departments. The organization should give utmost attention for the efficient and effective use of the stated administrative issues. In addition, the system should be supported by relevant policies such as revision of organizational structure and providing clear and defined job descriptions.
- ❖ The organization has fully achieved the foundation stage Kaizen 5S's and has partially attempting to standardize the operation. However, the company is faced shortage of safety materials and fire-extinguishers. Hence, the company should give serious attention for the health and safety of workers. Moreover, the company should provide necessary safety materials and equipments to workers and regularly audit the process.
- ❖ The movement (motion) of workers from storage area where materials are stored to the actual factory takes too long. Hence, the organization should reduce this muda providing another store on the factory base area.
- ❖ Finally regarding the prospects of Kaizen program implementation in view of the GTP achievement. The Ethiopian Kaizen Institute (EKI) is the only institute responsible for the implementation of the program in Ethiopia. The Agency, with its current capacity, reaching all the federal, regional and private manufactures were unlikely: Hence :-
 1. The Agency should work closely with stakeholders and partners
 2. The Agency should open similar institutes in regions as needed
 3. Introduce Kaizen in to the Technical and Vocational Education and Training (TVET) system.
 4. Introduce Kaizen to the universities
 5. Using different media the Agency should create national awareness on Kaizen.

Finally, since event follow up procedures do not guarantee the sustainability of outcomes, a full-length of survey of Kaizen team members and the establishment of control mechanisms to observe sustainable development is crucial. Therefore, to document and monitor the availability of continuous improvement at Wonji/Shoa sugar factory, a time series study is helpful.

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ANNEX A

Addis Ababa University

Faculty of Business and Economics

Department of Public Management and Policy

Post Graduate Program in Development Management and Policy

Dear respondents, I am a postgraduate student of the above mentioned institution and currently undertaking a research on “KAIZEN IMPLEMENTATION PROCESS CHALLENGES, ACHIEVEMENTS AND EMPLOYEE WORK ATTITUDE” taking Wonji/Shoa sugar factory as a case study. Your factory is one of the few companies chosen for the research. Your participation in the study is completely voluntary.

The purpose of the questionnaire is to obtain information, based on your personal view, on how Kaizen implementation impact your performances and the challenges encountered upon implementation.

After evaluating this questionnaire, there will be a personal interview with the respondent and workplaces observation by the researcher. Some of the questions in the personal interview might refer to answers given in this questionnaire.

The quality of the result of this research is based on the accuracy of the information you provided. The research work is for academic purpose only. Thus, the research will assure the information provide is going to be reported and communicated in collective data only with no personally identifiable. Any information obtained in connection with this study will remain strictly confidential nothing will be tied back to any individual names.

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.

If you have any questions or comments, please contact Mr. Michael Tadesse (imickythegreat@yahoo.com, 251-911-633576).

Thank you in advance for your help in this important research.

Questionnaire for Employees

Part I. Demographic Information

1. Gender : Male _____ Female _____
2. Age: _____
3. Years in current kaizen project position: _____
4. Your work experience in the organization: _____
5. Your work area/ station/Kaizen Team Name : _____

Part II. Please circle and give your response on the space provided that best describe your answer.

6. Do you agree that communication within the company is good?
 - i. Strongly Disagree
 - ii. Somewhat Disagree
 - iii. Neither agree nor disagree
 - iv. Somewhat Agree
 - v. Strongly Agree
7. Do you think the employees' opinions and suggestions are given due consideration in your company?
 - i. Not at all. Supervisors and managers don't care employees' opinions.
 - ii. Maybe in special cases, supervisors listen to front-line workers' opinions.
 - iii. Sometimes Supervisors and managers listen to their subordinates' opinions.
 - iv. Supervisors and managers in many cases listen to opinions of employees.
 - v. Supervisors and managers always listen to opinions of employees from some employees.
 - vi. Supervisors and managers always listen to opinions of employees from all levels and they are responsive.
8. Do you think you and your colleagues are in good spirit in working in the workplace?
 - i. Not really
 - ii. Only sometimes motivated

- iii. Reasonably motivated
- iv. Well motivated
- v. Well motivated and in high sp

9. Do you think your company has a consecutive employee training programme on kaizen?

- i. Not really.
- ii. Not quite enough.
- iii. Reasonable training programme.
- iv. Good training programme.
- v. Very good training programme

10. To what extent the worker involvement in Kaizen programs in your workplace can be explained?

- i. Very good
- ii. Good
- iii. Fair
- iv. Poor
- v. Very poor

11. To what extent the worker involvement in Kaizen decision making in your workplace can be explained?

- i. Not at all
- ii. Somewhat
- iii. To a moderate extent
- iv. Mostly
- v. To extreme

12. How easy or difficult was the implementation of Kaizen practices including reporting the results?

- i. Very easy
- ii. Somewhat easy

- iii. Neither easy nor difficult
- iv. Somewhat difficult
- v. Difficult

13. What type of Kaizen tools/ techniques/practices have you applied on your workplace?

14. Do you think you and your colleagues have adequate knowledge of continuous improvement?

- i. Yes
- ii. No
- iii. I do not know

15. If your answer for question number sixteen (16) is “*No or I do not know*” please specify the reason.

16. What do you still need in order to fully implement kaizen in your workplace?

17. Do you like being part of Kaizen activity in your work station

- i. Yes
- ii. No

18. If your answer for question number nineteen (19) is “*No*” please specify the reason.

Part III. Please circle your response that best describe the statement.

Statements	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
19. There is an established system for training and education in the organization.	1	2	3	4	5
20. Lack of proper incentives are challenges for Kaizen implementation	1	2	3	4	5
21. Top management commitment, visionary leadership and support are weak	1	2	3	4	5
22. Lack of coordination, communication and integration within departments hinder Kaizen implementation	1	2	3	4	5
23. I am willing to put efforts beyond that is normally expected in order to help this organization to be successful	1	2	3	4	5
24. I find that my values and the organization values are very similar	1	2	3	4	5
25. I am proud to tell others that I am a part of this organization	1	2	3	4	5

26. How many kaizen events/ workshops have you participated in total? _____ (fill in blank space).

27. By your view, what seemed most important during Kaizen implementation?

Thank you for the participation!

If you have any other comment about your experience with kaizen, please include them in the back of this page

ማጠቃለያ

ክፍል 1: የግል መረጃ

1. የታወቀ ወንድ _____ ሴት _____
2. ዕድሜ _____
3. በካይዘን ፕሮጀክት ቦታ ላይ የቆዩበት ዓመት _____
4. በተቋመወሰ ጥያቄዎች የሰራ ልምድ _____
5. የሰራ ቦታ/ምድብ/ካይዘን ቡድን ስም _____
6. _____

ክፍል 2: ምላሽዎን በበቂ ሁኔታ ያስረዳልኛል የሚሉትን ከዝርዝር ወስጥ ያክብቡ

7. በደርጅቱ ወስጥ ያለው ግንኙነት ጥሩ ነው ወይስ ይታያል?
 - i. በፍፁም አልሰማም
 - ii. በተወሰነ መልኩ አልሰማም
 - iii. ስምግሚት ትምተታዊ ለሆነ
 - iv. በተወሰነ መልኩ አሰማለሁ
 - v. ሙሉ በሙሉ አሰማለሁ
8. በደርጅቱ ወስጥ የሰራተኞች አስተያየት እና ጥቅማቸውን ትኩረት አለው ይታያል?
 - i. በፍፁም ተቆጣጣሪዎች እና ኃላፊዎች ለሰራተኞች አስተያየት ትኩረት አይሰጡም
 - ii. ምናልባት በልዩ ሁኔታ ተቆጣጣሪዎች በፊት መስመር ላይ ያሉ ሰራተኞችን አስተያየት ይሰማሉ
 - iii. አንድ አንድ ጊዜ ተቆጣጣሪዎች እና ኃላፊዎች የበታችኛውን አስተያየት ይሰማሉ
 - iv. ተቆጣጣሪዎች እና ኃላፊዎች በአብዛኛው የሰራተኛውን አስተያየት ይሰማሉ
 - v. ተቆጣጣሪዎች እና ኃላፊዎች ሀላፊነት የሰራተኞችን አስተያየት ከአንድ አንድ ሰራተኛ ይሰማሉ
 - vi. ተቆጣጣሪዎች እና ኃላፊዎች በማንኛውም ደረጃ ላይ ካሉ ሰራተኞች አስተያየት በመስማት ምላሽ ይሰጣሉ
9. በሰራተኛው ላይ እርስዎ እና የሰራተኞች ለመሰራት በጥሩ መንፈስ ይንቀሳቀሳሉ?
 - i. አይመስለኝም
 - ii. አንድ አንድ ጊዜ ተነሳሽነት አለ
 - iii. ተቀባይነት ያለው ተነሳሽነት አለ
 - iv. በቂ ተነሳሽነት አለ
 - v. በቂ ተነሳሽነት እና ከፍተኛ የሚታይ መንፈስ አለ
10. ደርጅትዎ በተከታታይነት የሰራተኞች ስልጠና ፕሮግራም በካይዘን ላይ ተደራሽ ያደርጋል ብለው ያምናሉ?

- i. አይመስለኝም
- ii. በቂ አይደለም
- iii. በቂ የስልጠና ፕሮግራም አለ
- iv. ጥሩ የስልጠና ፕሮግራም አለ
- v. እጅግ በጣም ጥሩ የስልጠና ፕሮግራም አለ

11. በስራ ቦታው ላይ የሰራተኞች በካይዘን ፕሮግራም ተሳታፊነትን እንዴት ይገልፁታል?

- i. በጣም ጥሩ
- ii. ጥሩ
- iii. መካከለኛ
- iv. ዝቅተኛ
- v. በጣም ዝቅተኛ

12. በስራ ቦታው ላይ የሰራተኞች በካይዘን የወሳኔ አሰጣጥ ላይ ያላቸው ተሳትፎ እንዴት ይገለጻል?

- i. ተሳታፊ አይደለም
- ii. በተወሰነ ውጤት ተሳታፊ ናቸው
- iii. በመካከለኛ ይዘት ይሳተፋሉ
- iv. በአብዛኛው ተሳታፊ ናቸው
- v. ሙሉ ለሙሉ ተሳታፊ ናቸው

13. የካይዘን ተግባራዊነት ከብድት እና ቅለት እንዲሁም ወጠቱን ሪፖርት የሚረግ ሂደት እንዴት ይገለጻል?

- i. በጣም ቀላል
- ii. በተወሰነ መልኩ ቀላል
- iii. ቀላልም ከባድም አይደለም
- iv. በተወሰነ መልኩ ይከብዳል
- v. ከባድ ነው

14. በስራ ቦታው ላይ ምን ዓይነት የካይዘን መሳሪያዎች፣ ቴክኒኮች/ተግባሮች አከናውኑ?

15. እርስዎ እና የስራ ባልደረባዎቻዎ በቀጣዩነት የሚከሰቱ በቂ እወቅት እንዳለዎት ያምናሉ?

- i. አዎ
- ii. አላምንም

iii. አላወቅም

16. ለጥያቄ ቁጥር 16 “ምላሽዎ አይደለም ወይም አላወቅም” የሚል ከሆነ እባክዎ ምክንያቱን ይግለጹ?

17. ሙሉ ለሙሉ ካይዘንን በስራ ቦታዎ ላይ ተግባራዊ ለማድረግ አሁን የሚያስፈልግዎት ምንድን ነው?

18. በስራ ቦታዎ ላይ የካይዘን እንቅስቃሴዎች አካል መሆንዎን ይወዳታል?

i. አዎ

ii. አልወደደም

19. ለጥያቄ ቁጥር 19 ምላሽዎ “አልወደደም” ከሆነ ምክንያቱን ይግለጹ?

ክፍል 3: ዝርዝሩን ለያብራራ የሚችል ምላሽዎን በሚከተለው ይግለጹ

ዝርዝር	በጣም አልስማማም	በተወሰነ ሜሊኩ አልስማማም	ስምምነት ተቃዋሚ የለኝም	በተወሰነ ሜሊኩ እስማማለሁ	በጣም አስማማለሁ
19. በድርጅት ውስጥ ለስልጠና እና ትምህርት የተዘረጋ ስርዓት አለ	1	2	3	4	5
20. አግባብነት ያለው የከሰ ገንዘብ ስለሌለው ለካይዘን ትግበራ ችግር ሆኗል፡፡	1	2	3	4	5
21. የበላይ አሙራ ቁርጠኝነት፣ ባለራዕይ አሙራ እና	1	2	3	4	5

ድጋፍ ደካማነት ወ፡					
22. በመሣሪያዎቹ መካከል ትብብር፣ ግንኙነት እና መሃሪ ባለሙያ ለካይዘን ትግበራ እንቅፋት ሆኗል፡፡	1	2	3	4	5
23. ከተለመደው በላይ በመሰራት ድርጅቱ ወጣታማ እንዲሆን ለማረጋገጥ ፈቃደኛ ነኝ፡፡	1	2	3	4	5
24. የእኔ እና የድርጅቱ እሴቶች ተመሳሳይ ሆነው አግኝቻቸዋለሁ፡፡	1	2	3	4	5
25. የዚህ ድርጅት አካል መሆኔን ለሌሎች ስናገር ከራት ይሰማል፡፡	1	2	3	4	5

26. በጠቅላላው በምን ያህል የካይዘን ክንወኖች/ወርክሾፖች ላይ ተሳታፊ ሆኑ? _____ (ከፍት በታወቀ ይመሉ)

27. በእርስዎ አመለካከት በካይዘን ትግበራ ላይ መረጋገጫ ጭብጦችን ድን ነ ወ? ስለ ተሳትፎ እና መስጫነት!

ማንኛውም በካይዘን ልምድ ላይ ተጨማሪ አስተያየት ካለዎት እባክዎ በአዲስ ገፅ ላይ አስተያየትዎን ያስፍሩ

QUESTIONNAIRE (Management)

Part I. Demographic Information

1. Gender : Male _____ Female _____
2. Age: _____
3. Years in current kaizen project position: _____
4. Responsibility/position in Kaizen project : _____
5. Number of employees engaged in Kaizen implementation: _____

Part II. Please tick the box that best describes your response

Statements	Very good	Good	Fair	Poor	Very poor
6. To what extent the commitment to Kaizen practices in all functional units of your company can be explained					

7. To what extent the worker involvement in Kaizen programs in your company can be explained?					
8. To what extent the Kaizen team decision making in Kaizen activities in your company can be explained?					

Statements	Strongly disagree	Some what disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
9. Currently, do you agree that Kaizen is a good strategy for your company?					

Part III. Please circle and give your response on the space provided that best describe your answer.

10. Do you think the company's Kaizen implementation plan, goals and values are communicated effectively to all the relevant people in the company?

- i. Not really.
- ii. Maybe to some extent
- iii. More or less reasonably.
- iv. Mostly properly done
- v. Very well done.

11. What type of outside help did you acquire for kaizen implementation?

12. What were the biggest challenges during kaizen implementation in your company?

If so, how did you overcome the challenge?

13. Which pitfalls and difficulties are still influencing your operation today?

14. What were the biggest successes? What helped you to success

15. What types of **Measurable Results** have you achieved?

16. What types of **Non-Measurable Results** have you achieved?

IV. Please circle your response that best describe the statement.

Statements	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
17. The kaizen technique increased employees/ team members interest (voluntarily) in the work area.	1	2	3	4	5
18. Kaizen motivated employees/team members to perform better	1	2	3	4	5
19. Employees /team members communicate new ideas as a result of Kaizen.	1	2	3	4	5
20. Employees/ teams gained new skills as a result of kaizen	1	2	3	4	5
21. Employees/ team members identify improvement easily with others in the work station as a result of Kaizen	1	2	3	4	5

22. Kaizen provides opportunity to participation in decision making	1	2	3	4	5
23. Overall, Kaizen technique increased knowledge of continuous improvement	1	2	3	4	5
24. Over all, Kaizen improved process cycle time, on time delivery and floor space usage	1	2	3	4	5
25. Kaizen had a positive effect on work area /station	1	2	3	4	5
26. Kaizen enhances employee's ability to measure impact of change in the work area	1	2	3	4	5
27. Over all, Kaizen implementation was a success	1	2	3	4	5
28. Kaizen implementation brought quality products and services in terms of efficiency, effectiveness and transparency.	1	2	3	4	5
29. Kaizen has been creating organizational attitudes and values for change	1	2	3	4	5
30. Organizational readiness to change has start on as result of Kaizen implementation	1	2	3	4	5
31. There is established systems for training and education in the organization to nurture the required values of Kaizen processes	1	2	3	4	5
32. Resistance to change are challenges for Kaizen implementation	1	2	3	4	5
33. The traditional hierarchical work trends are still the obstacles for change	1	2	3	4	5
34. Skilled manpower is one of the capacity constraint to implement Kaizen	1	2	3	4	5

35. The general perception of Kaizen cannot be applied in case of Ethiopia	1	2	3	4	5
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36. By your view, what seemed most important during Kaizen implementation?

Thank you for the participation!

If you have any other comment about your experience with kaizen, please include them in the back of this page

ANNEX B

Interview guiding questions for Key Factory Officials'

Interview Questions for Wonji/Shoa Sugar Factory on the overall KAIZEN program implementation process and outcomes attained so far.

1. How was Kaizen management philosophy implemented in the factory?
2. What was the role of management in Kaizen implementation process?
3. What was the role of stakeholders (Ethiopian Sugar Corporation, EKI and others) in Kaizen implementation process?
4. Are there coordination, communication and integration of Kaizen implementation within stakeholders? If so, how do you see its extent?
5. How was Kaizen event organized and conducted in the factory?
6. Did the factory provided trainings and education on Kaizen implementation to performers so far and how frequently was Kaizen event has been conducted?

7. What type of Kaizen tools/ techniques/practices have you applied on your workplace?
8. Does the factory under took continuous monitoring and evaluation? If so what were the outcomes registered and gaps identified?
9. Would you please mention major achievements gained to date as a result of Kaizen implementation within the factory?
10. Would you please provide details on which and why Kaizen implementation is challenged?
11. What solutions would you suggest for the challenges encountered?
12. Are there human resource policies in the factory for employee motivation with /without incentives?
 - a. If yes , please mention the policies _____

 - b. If no what do you think the reason behind? _____

13. Are there any employee attitudinal changes due to Kaizen program implementation so far? .If so, would you please mention the cultural and attitudinal changes?
14. How do you see the use of Kaizen events in the factory so far, increasing, decreasing or staying the same over the years?
15. How do Kaizen implementation process affect employee attitude?, please mention the changed employee attitude.
16. What mechanisms do you have in place to sustain Kaizen outcomes?

Interview Guiding Questions For Ethiopian Sugar Corporation Kaizen Unit

1. How effective was the corporation in implementing Kaizen management philosophy across the sugar industries?
2. How was the process/steps of Kaizen program implementation taking place particularly in Wongi/ Shoa Sugar Factory?
3. How do you see the contributions of Kaizen program implementation over the traditional management system? If so, how do you see its contribution?

4. Is the corporation effective in coordination, monitoring and evaluation of Kaizen intervention?
 - a. If yes, what are the outcomes registered and gaps identified so far?
5. How do you evaluate the outcome of Kaizen program implementation in the factory?
 - a. If so, what are the outcomes registered so far? _____

6. Is the corporation effective in Kaizen intervention and altering the attitude of employees towards the new work culture?
 - a. If yes. What are the perceived new work cultures due to Kaizen intervention? _____

7. What are the achievements gained to date as a result of Kaizen implementation in the factory?
8. What types of measurable achievements are realized gained?
9. What types of non-measurable achievements are realized?
10. What are the challenges of the Kaizen program implementation in the factory?
11. How do you see the utilization of Kaizen events in the factory increasing, decreasing or staying the same over the years?
12. What mechanisms do you have in place to sustain Kaizen outcomes?

Interview Guiding Questions For Ethiopian Kaizen Institute Official's

1. Why Kaizen philosophy was selected against the traditional system to accelerate the industry and manufacturing sector performance?
2. How effective was the institute in implementing Kaizen management philosophy?
3. How effective was the institute in planning, monitoring and evaluation of Kaizen intervention? If so what were the outcomes registered and gaps identified?
4. How do you evaluate the outcome of Kaizen program implementation on the general work culture?
5. What are the major achievements of the Kaizen program implementation particularly in the manufacturing sector?
6. What are the challenges encountered during KAIZEN program implementation?

7. What possible course of action do you recommend as way forward to address the challenges or implementation bottlenecks?
8. How is the prospect of Kaizen program implementation in accelerating the industry sector to support attaining the GTP?
9. Based on your experience so far, what possible course of action do you recommend as way forward to address critical intervention areas of implementation bottlenecks?
10. What are the prospects of the Kaizen program implementation in view of GTP achievement?
11. What mechanisms do you have in place to sustain Kaizen outcome

KAIZEN OVERALL IMPLEMENTATION, OBSERVATION CHECKLIST.

No	Item	Grade					Comments
		0	1	2	3	4	
1	Are all notices and other information available in the work area up to date						
2	Is unused equipment and machinery eliminated from the plant						
3	Is obsolete inventory and raw materials eliminated from the plant						
4	Are aisles and doorways free from materials and blockages						
5	Are all tripping hazards and obstructions eliminated						

6	Are all work area boundaries clearly marked						
7	Are storage places for all tools and equipments designated and marked						
8	Are storage places for all work in progress designated and marked						
9	Are all machinery, storage equipment and columns identified and numbered						
10	Are all pipes, controls and gauges identified and labeled						
11	Is the plant free from trash and dirt						
12	Is the floor and machinery free from all foreign materials						
13	Are all machines, tools and equipments clean and in good repair(functional)						
14	Are sources of dust, dirt and foreign material under control						
15	Are oil analysis and other techniques used to gauge machine conditions						
16	Are cleaning and checking schedules available and in documented use						
17	Are up to date work instruction, including quality checks, available and in use at all work stations						
18	Are all bins and parts properly identified and tagged						
19	Are gauges and indicators labeled to clearly show the						

	normal operating range						
20	Are all start-up safety checks carried out and documented						
21	Is everyone wearing proper safety gear						
22	Are all unused tools and equipment properly stored						
23	Are all raw materials and work in progress properly stored						
24	Are all personnel fully trained in the tasks they are responsible for, and regularly tested						
25	Is there a regular auditing process to verify compliance with all elements of the production and safety systems						
26	Are all produced products is according to the specification						
27	Is continues improvement board established and the information contained up to date						
28	All operators trained in the new process						
29	All standard work sheets complete						

0= NO, where the only choice is 0 or 4 otherwise it means not at all

1= some evidence of a plan, but very little conformance

2= about half the instances noted where in conformance

3= Instances noted were mostly in conformance, but one or more problems were found

4= Yes, where the only choices is 0 and 4 otherwise complete conformance with no problems noted