

INVESTIGATING METHODS AND CHALLENGES OF KAIZEN EXECUTION: A CASE STUDY OF AN ENGINEERING FIRM IN PAKISTAN

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ABSTRACT

KAIZEN is a system of a continuous endeavor by an organization to improve its business activities and processes, the goal being to improve the quality of products and services so that the organization can meet full customer satisfaction. Kaizen can be an integrated and company-wide approach through collaboration of all the levels of the organization: top management, middle managers and front-line employees. Commitment, genuine participation and motivation of all the three actors are critical factors. The purpose of this study is to assess the methods and challenges faced by ABC Engineering Pvt., Ltd. in executing and sustaining kaizen. Quality circles were established and the 5S's were deployed as a beginning of kaizen execution in the firm.

This is descriptive research, and its basic aim is to explore and gain additional information about the subject area and to identify areas for further investigation. The study used clustered sampling for the data collection. Top management commitment in building and sustaining a continuous improvement culture, clear communication channels, involvement of all members of the company, training in kaizen methodologies as well as fair and equitable motivational schemes including empowerment has a great impact on the effectiveness of kaizen practices. However, the levels of all the above mentioned factors were not well practiced in ABC Engineering Pvt., Ltd. for ingraining the culture of kaizen. Most of the participants (employees) were dissatisfied with the applications of the above mentioned factors of Kaizen as practiced in the firm.

Keywords: *Kaizen, Quality circles, 5S, Waste, Empowerment, Cross cutting quality circle, Standard quality circle*

บทคัดย่อ

ไคเซ็นคือระบบการพัฒนาองค์กรแบบไม่สิ้นสุดเพื่อที่จะเพิ่มประสิทธิภาพของกิจกรรมและกระบวนการต่างๆของธุรกิจ เป้าหมายหลักเพื่อที่จะพัฒนาคุณภาพของสินค้าและบริการเพื่อที่จะตอบสนองความต้องการของลูกค้าและความพึงพอใจของลูกค้า ไคเซ็นนั้นเป็นการบูรณาการของภาพรวมองค์กรทั้งหมดโดยประกอบไปด้วยการร่วมมือกันของทุกระดับในองค์กร คือ ผู้บริหารระดับบน ระดับกลาง และระดับล่าง ความมุ่งมั่น ความร่วมมือ และแรงจูงใจคือปัจจัยสำคัญในการทำไคเซ็น งานวิจัยนี้มีวัตถุประสงค์เพื่อวัดวิธีการในระบบไคเซ็นและศึกษาประเด็นที่ท้าทายจาก

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การนำระบบไคเซ็นมาใช้อย่างยั่งยืน ทั้งนี้บริษัทที่ใช้ในงานวิจัยนี้ได้้นำแนวคิดในการควบคุมคุณภาพ (Quality Circles) มาใช้ร่วมถึงการปรับใช้ 5 ส เมื่อเริ่มต้นนำระบบไคเซ็นมาปรับใช้ในองค์กร

งานวิจัยนี้เป็นงานวิจัยแบบเชิงอธิบาย ซึ่งมีจุดมุ่งหมายในการสำรวจและได้ข้อมูลเพิ่มเติมเกี่ยวกับไคเซ็น การศึกษานี้ได้นำการสุ่มตัวอย่างแบบกลุ่มมาใช้เพื่อการเก็บข้อมูล จากผลการวิจัยทราบว่าปัจจัยที่มีผลต่อการประยุกต์ใช้ระบบไคเซ็นอย่างมีประสิทธิภาพ คือ ความมุ่งมั่นของผู้บริหารระดับบนในการสร้างและคงไว้ซึ่งวัฒนธรรมองค์กรของการพัฒนาแบบไม่สิ้นสุด ช่องทางการสื่อสารที่ชัดเจน การมีส่วนร่วมของทุกคนในองค์กร การอบรมระบบไคเซ็น รวมถึงความเป็นธรรมและเท่าเทียมกันของระบบแรงจูงใจ และการกระจายอำนาจในองค์กร อย่างไรก็ตามระดับปัจจัยที่กล่าวมานั้นยังไม่ถูกปฏิบัติครบถ้วนหรือเป็นวัฒนธรรมในองค์กรเพื่อประสิทธิภาพของระบบไคเซ็นในบริษัทที่ใช้ในงานวิจัยนี้ กลุ่มตัวอย่างส่วนมากในงานวิจัยนี้คือพนักงานในบริษัท ได้แสดงความคิดเห็นอยู่ในเกณฑ์ต่ำหรือไม่เพียงพอต่อปัจจัยดังกล่าวที่มีผลต่อการประยุกต์ใช้ระบบไคเซ็นในบริษัท ซึ่งบริษัทควรที่จะตระหนักถึงการสร้างปัจจัยดังกล่าวเพื่อการประยุกต์ใช้ระบบไคเซ็นอย่างมีประสิทธิภาพ

INTRODUCTION

In Japanese, kaizen signifies "continuous improvement." The word infers change that includes everybody - both managers and workers - and involves moderately little expense (Imai, 2000). The acquaintance with kaizen began after the end of WWII. The Toyota Production Framework is known for kaizen, where all workforce lines are depended upon to stop their moving production line if there should be an event of any variation from the standard, and alongside their chief, prescribe a change to decide the variations from the standard which may begin a kaizen. Kaizen has acquired incredible achievements in the Japanese monetary condition and financial condition, which started in the manufacturing areas.

Katsuki (2008) depicted that Kaizen is something more than a means for improvement since it addresses the daily problems occurring in the workplace and the manner by which these problems are overcome. Kaizen can be applied to any area needing improvement. In spite of the fact that the reason for Kaizen is for the most part in the material assembling areas, as of now most administration areas are occupied with using kaizen as their driving quality management tool. Relevance ranges of kaizen are not restricted to manufacturing, rather they can be connected to various divisions of the economy that require nonstop improvement in their activities.

There are six supportive measurements, which should be available to supplement and support the essential dimensions of Kaizen, as expressed by Suarez & Lingham (2008). These measurements include commitment from top management, training, participation of all individuals from the organization, communication, and cultural aspects in the organization with respect to the positive outlook of workers, and proper motivational plans.

From an economic point of view, an administration is an elusive commodity and can be viewed as the intangible equal to economic merchandise (Suarez, Smith, & Dahlgaard, 2009). Manufacturing companies require exceptional management

approaches that go beyond just adopting the administration systems found to be successful in manufacturing companies. Not at all like that of produced substance, the benefit segments require due emphasis in the execution of kaizen in any management framework because of the remarkable highlights that distinguish them. The difficulties in a manufacturing organization change with the level of customer contact, the organization's individual customization, and energy of labor (Aoki, 2008).

ABC Engineering Pvt., Ltd. has been the top leading fasteners manufacturing company in Pakistan, for decades. The organization today comprises three assembling divisions with around 690 employees which include qualified specialists, experts, and talented laborers. It is the biggest association of its kind in Pakistan and keeps on driving forward with its inventive approach.

The firm's Fasteners Division delivers an extensive variety of screw, bolts and rivets, for the Construction, Domestic Appliances, Automotive and Machinery areas of the economy. ABC Engineering (Pvt), Ltd. ISO 9001: 2008 confirmed, is the biggest fastener producer in Pakistan, competing with the best in class items to different ventures, retail and also trade showcases, with more than 40 years of involvement in fasteners manufacturing.

ABC Engineering (Pvt), Ltd. makes more than 700 different sorts and sizes of quality fastener. Its total in-house manufacturing, offices, and professional team empower the firm to produce hand-crafted and concentrated fasteners according to the particular requirements of its esteemed customers.

The Powder Metal Division is associated with the assembling of self-greasing washers, bushes, oil pump gears, shock absorber parts and other integral parts for bikes. Powder Metal technology is a remarkable assembling process which has been developing relentlessly and finding new applications in the course of the most recent 50 years.

So, the purpose of this research is to survey the firm's level of kaizen methods and the challenges that the organization is confronting in accomplishing its goals from kaizen execution. Based on these assessments, the researcher has formulated conceivable recommendations that will contribute to the legitimate execution of kaizen.

REVIEW OF RELATED LITERATURE

Kaizen

For Japanese, kaizen implies consistent change. The word infers change that includes everybody, the supervisors and laborers, and involves moderately little cost (Imai, 2000). Khan (2011) further clarified kaizen as a Japanese quality approach which is so profoundly instilled in the brains of the chiefs and masters that they consistently do not even comprehend that they are actually thinking kaizen.

The theory of Kaizen has aroused extensive enthusiasm among analysts in light of the fact that it builds efficiency in the organization and creates superb items with least endeavors. A few researchers have examined the idea of kaizen, including Deniels (1996) and Reid (2006).

Kaizen uses the 5S approach to improvement by systematically identifying five types of squander known as 'wastes' ('muda' is the Japanese word), and reducing them or eradicating them altogether (Phillip, 2010). This approach is now recognized as an essential requirement for any organization (Imai, 2000).

Training and Awareness

Displaying quality training all through an organization, frames some portion of the total quality change process that will be executed by the management. It is the main edge of the aggregate procedure as it gives correspondence and heading to everybody at the organisation. Also, it is receptive to the quality technique that clearly states, "Quality is everybody's duty". In this manner, most fittingly, it is the growing part of the quality capacity (Gul, Jafery, & Rafiq, 2012).

The training plan of an organisation has turned into a developing duty of quality work. Displaying quality training throughout an institution, shapes some portion of the aggregate quality change process that will be implemented by management. It is the main edge of the aggregate procedure as it gives correspondence and bearing to everybody at the establishment (Phillip, 2010).

Top Management Roles and Commitment

Everyone is responsible for quality, especially the senior management and the CEO; however, only the latter can provide the leadership systems to achieve results (Dahlgaard, Kristensen, & Kanji, 2007). Kaizen implementation begins with senior management and most importantly, the CEO's commitment (Besterfield, Besterfield-Michana, Besterfield, & Besterfield-Sacre, 2004). Delegation and rhetoric are not sufficient: involvement is required.

Senior leadership commitment ought to be obsessional, not merely lip-service. It is conceivable to identify genuine responsibility: it is revealed on the shop floor, in the workplaces, in the hospital ward and in the purpose of operation. Administration ought to be devoted to a generalized change of value, not just a one-advance change to only an adequate level (Anthony, Jane, & David, 2005).

Company-wide Participation and SQC

Worker contribution is a one way to deal with enhancing quality and efficiency. Its utilization is attributed to adding to the achievement delighted in by the Japanese in one of the planet's commercial centers. Representative inclusion is not substitution for administration, nor is it the last word in quality change. It is a way to better meet the organisation's objectives for quality and profitability at all levels of a company (Besterfield et al., 2004).

The Recommendation framework is designed to furnish the person with the required opportunity to be contributing to the organization. The majority of the ideas for

continuous changes will originate from the team approach: That should make it simple for employees to recommend improvements, survey them expeditiously, and actualize them (Imai, 2000).

The establishment of Quality Circles (QC) provides a good method to elicit improvement ideas as part of a Kaizen approach. There are two ways of installing these. One is to present them as part of a quality administration development; the other is to install it at the beginning of Kaizen as an essential element of Kaizen (Okada, 2004). The challenges to QC effectiveness are personal inhibition in offering an idea, and the need for preparation for critical thinking. These challenges are often met by using a skilled facilitator (Bertrand & Prabhakar, 2002).

Motivation and Empowerment

Oakland (2007) explained worker empowerment as a domain in which individuals have the capacity, the certainty, and the promise to assume the liability and proprietorship to enhance the procedure and start the vital strides to fulfill client necessities within highly characterized limits, with a specific end goal, to accomplish authoritative qualities and objectives.

Empowerment should not be confused with delegation or job enrichment. Delegation refers to distributing and entrusting work to others, and job enrichment focuses on expanding the content of individual jobs (Robbins & Coulter, 2012). Dahlgaard et al. (2007) stated three conditions necessary for an empowered environment: everyone must understand the need for change, the system needs to change to the new paradigm, and the organization must enable its employees.

Communication

Everyone needs to be trained in quality awareness and problem solving. It is important to communicate kaizen to the entire organization. Communication is important throughout the implementation stage. Communication is important to create kaizen awareness, interest, desire, and action (Imai, 2000).

Communication is one of the most important supportive dimensions to be considered when implementing kaizen in an organization. From the principles of kaizen, it becomes clear that communication is one of the key success factors in the quality improvement process (Oakland, 2007).

Corporate Culture and Positive Mindset

Culture is an essential determinant of the organizational environment. Prior to embarking on a quality revolution, an organization must decide if its brand of culture offers an environment that is helpful to total quality. If not, the culture must be changed. Institutional culture is a key factor, intended to convey the objectives of the organisation and the suitable conduct in accomplishing those objectives (Irani & Beskese, 2004).

Culture in any business might be defined then as the convictions that pervade the company about how business ought to be conducted, and how employees ought to carry on and ought to be dealt with. Any company needs a vision system that incorporates its managing philosophy, core value and convictions, and a purpose.

These should be consolidated into a mission statement which gives a clear depiction of what things will resemble when they are accomplished (Oakland, 2007).

CONCEPTUAL MODEL AND HYPOTHESES

Figure: 1: Research Framework



Source: Ethiopian Kaizen Manual (2011)

The above Figure, taken from the Ethiopian kaizen manual, attempts to outline the factors that are contributing to persistent change. It demonstrates the connection between the elements and advantages after the usage of continuous change. This study aims to test 18 hypotheses divided into three categories of differences in perception, which are as follows:

Difference in Perception of Employees who have different Qualification.

Different qualification profiles of people could lead to different perceptions about the studied dimensions of kaizen. The main information of this background is present in the survey questionnaire, such as grade 12 & below, 12+2 & diploma, BA/BSc/BE, and MA/MSc/MBA.

Hypothesis 1: People who are different in qualification perceive training and awareness differently.

Hypothesis 2: People who are different in qualification perceive top management role & commitment differently.

Hypothesis 3: People who are different in qualification perceive employee motivation & empowerment differently.

Hypothesis 4: People who are different qualification perceive company-wide participation & SQC differently.

Hypothesis 5: People who are different in qualification perceive corporate culture & positive mind-set differently.

Hypothesis 6: People who are different in qualification perceive communication differently.

Difference in Perception of Employees who have different Experience.

The different experience profiles of people could lead to different perceptions about the studied dimensions of kaizen. The main information of this background is present in the survey questionnaire, such as < 3 years, 3-5 years, 6-10 years, and > 10 years.

Hypothesis 7: People who are different in experience perceive training and awareness differently.

Hypothesis 8: People who are different in experience perceive top management role & commitment differently.

Hypothesis 9: People who are different in experience perceive employee motivation & empowerment differently.

Hypothesis 10: People who are different in experience perceive company-wide participation & SQC differently.

Hypothesis 11: People who are different in experience perceive corporate culture & positive mind-set differently.

Hypothesis 12: People who are different in experience perceive communication differently.

Difference in Perception of Employees working in different Divisions.

People working for two different divisions could lead to different perceptions about the studied dimensions of kaizen. The main information of this background is present in the survey questionnaire, such as fasteners division and powder metal division.

Hypothesis 13: People working in different divisions perceive training and awareness differently.

Hypothesis 14: People working in different divisions perceive top management role & commitment differently.

Hypothesis 15: People working in different divisions perceive employee motivation & empowerment differently.

Hypothesis 16: People working in different divisions perceive companywide participation & SQC differently.

Hypothesis 17: People working in different divisions perceive corporate culture & positive mind-set differently.

Hypothesis 18: People working in different divisions perceive communication differently.

METHODOLOGY

This study has selected the components for the sample by judgment of the author. This research used a questionnaire survey to gather data from ABC Engineering Pvt. Ltd. in Pakistan in order to analyze and examine all 18 hypotheses. The population size of data gathering was approximately 690 employees; thus the sample size of this study consisted of 552 respondents (442 from Fasteners Division and 100 from Powder Metal Division). Since the research was conducted on Fasteners and Powder Metal divisions only, the Clustered Sampling technique was applied as all 552 respondents (employees) from the two divisions of the ABC Engineering Pvt., Ltd. Which participated in the survey.

Questionnaire Design

The questionnaire consisted of three sections: 1) Demographic Data, 2) Survey Questionnaire for each dimension of kaizen, 3) Written Answers. The survey questions used numeric rating questions. A 5-point Likert scale was used for the measurement of the study variable. It is stated by Saunders, Lewis, and Thornhill (2007), that the Likert Scaling method is the most common scaling method. The scale from 1 to 5 (Strongly disagree – Strongly agree) was used in order to make the respondents take a stand regarding the questions asked.

Data Analysis

Analytical tools such as bar charts with frequencies, and SAS, were applied to analyze gathered data by using ANOVA Analysis and T-Test Analysis. The research is the descriptive research type and its very basic aim is to explore or to gain additional information about the subject area and to identify areas for further investigation.

FINDINGS

Table: 1: Hypotheses Testing

No.	Hypothesis	Result	P-value	F-value	Variance Pr > t	R-Square	Remarks
1	People who are different in qualification perceives training and awareness differently.	Rejected	p=0.735	0.43	-	0.002	The model was insignificant (p=0.735), which means that people who are different in qualification perceives training and awareness in the same manner.
2	People who are different in qualification perceives top management role & commitment differently.	Rejected	p=0.548	0.71	-	0.003	The model was insignificant (p=0.5489), which means that people who are different in qualification perceives top management role & commitment in the same manner.
3	People who are different in qualification perceives employee motivation & empowerment differently.	Rejected	p=0.205	1.53	-	0.008	The model was insignificant (p=0.205), which means that people who are different in qualification perceives employee motivation & empowerment in the same manner.
4	People who are in different qualification perceives companywide participation & SQC differently.	Rejected	p=0.446	0.89	-	0.004	The model was insignificant (p=0.4468), which means that people who are different in qualification perceives companywide participation & standard quality circles in the same manner.

No.	Hypothesis	Result	P-value	F-value	Variance Pr > t	R-Square	Remarks
5	People who are in different in qualification perceives corporate culture & positive mind-set differently.	Rejected	p=0.1936	1.58	-	0.008	The model was insignificant (p=0.1936), which means that people who are different in qualification perceives corporate culture & positive mind-set in the same manner.
6	People who are in different in qualification perceives communication differently.	Accepted	p=0.0002	6.87	-	0.036	Duncan: The mean score of people whose qualification is 12+2 & diploma perceive communication higher than people whose qualification was grade 12 and below or lies between BA/BSc/BE.
7	People who are different in experience perceives training and awareness differently.	Rejected	p=0.244	1.39	-	0.007	The model was insignificant (p=0.2442), which means that people who are different in experience perceives training and awareness in the same manner.
8	People who are different in experience perceives top management role & commitment differently.	Rejected	p=0.848	0.27	-	0.001	The model was insignificant (p=0.8483), which means that people who are different in experience perceives top management role & commitment in the same manner.
9	People who are different in experience perceives employee motivation & empowerment differently.	Rejected	p=0.061	2.47	-	0.013	The model was insignificant (p=0.0611), which means that people who are different in experience perceives employee motivation & empowerment in the same manner.
10	People who are different in experience perceives companywide participation & SQC differently.	Rejected	p=0.657	0.54	-	0.002	The model was insignificant (p=0.6571), which means that people who are different in experience perceives company-wide participation & standard quality circle in the same manner.
11	People who are different in experience perceives corporate culture & positive mind-set differently.	Rejected	p=0.729	0.43	-	0.002	The model was insignificant (p=0.7291), which means that people who are different in experience perceives corporate culture & positive mind-set in the same manner.
12	People who are different in experience perceive communication differently.	Accepted	p=0.000	9.84	-	0.051	Duncan: The mean score of the people whose experience is below 3 years is higher as compare to the other mean scores of the people whose experience is 6-10 years, 3-5 years and group B whose experience is above 10 years.
13	People working in different divisions perceives training and awareness differently.	Accepted	p=0.037	1.46	0.037		The mean score of fasteners people perceive training and awareness higher than powder metal people.
14	People working in different divisions perceives top management role & commitment differently.	Rejected	p=0.284	1.19	0.284		Hypothesis is not significant and not supported and it means people who are working in different divisions perceives training and awareness the same.
15	People working in different divisions perceives employee motivation & empowerment differently.	Accepted	p=0.008	3.26	0.008		The mean score of fasteners people perceive employee motivation and empowerment higher than powder metal people.
16	People working in different divisions perceives companywide participation & SQC differently.	Accepted	p=0.677	2.01	0.677		Variances are unequal at 0.6776. P-value at unequal variances is greater than 0.05.
17	People working in different divisions perceives corporate culture & positive mind-set differently.	Rejected	p=0.082	1.04	0.082		It means people who are working in different divisions perceives corporate culture & positive mind-set the same.
18	People working in different divisions perceives communication differently	Accepted	p=0.0001	1.61	<0.0001		The mean score of fasteners people perceive communication higher than powder metal people.

Table 1 shows the summary of the hypotheses testing for difference of perception among people who are different in qualification, experience and divisions. The results suggest that for qualification, people only had difference of perception for communication. Similarly, people who were different in experience also perceived communication differently. Furthermore, people who were working in different divisions had different perceptions for training and awareness, employee's motivation & empowerment, company-wide participation & standard quality circles and communication. All other dimensions of kaizen were not perceived differently by the employees with different experience, qualification and divisions.

CONCLUSION

The first and foremost issue in any management philosophy is inculcating the vision, mission, core values as well as strategic goals among employees which show good status in ABC Engineering Pvt. Ltd. Though the firm started the execution of kaizen after delivering training for employees, it is not at a sufficient level or on a continuous basis, which contributes to ineffectiveness of the system. It is noticed that people with different qualifications and experience did not identify training and awareness differently.

The degree of top management commitment is not at its desired level. Kaizen is a top level approach that realizes quality mindfulness in every single hierarchical process. For kaizen to be effected completely, it is basic that the best administration ought to be designed to enable the representatives by designating adequate specialists for them to identify both individual and aggregate choice. Albeit top management commitment is a vital pillar for practicing and sustaining the culture of kaizen, the management of the organization does not give due concern for the proper execution and its sustainability. From the test results, it identified that even people with different qualification, experience and divisions did not have any difference of opinion for top management role and commitment.

Company-wide participation is one critical factor in the implementation of a new management philosophy like kaizen. It can be concluded from the study that employees are considering kaizen as an additional burden thrown by the management rather than a service quality improvement system. The reasons can be mainly attributed to minimal involvement from the Managing Director himself, and ignoring suggestions generated in standard quality circle/council meetings. From the test results, it is identified that even people with different qualification, experience and divisions did not have any difference of opinion for company-wide participation and standard quality circles.

Effective communication adds to speedy and powerful execution of tasks while it likewise enhances basic leadership and collaboration. There are inefficiencies in the communication system. These include: delay in response from management, one-directional communication (top-down), and unclear reporting templates. These are contributing negatively to the ineffective practices of kaizen. An inefficient communication system in the firm resulted in poor practices of kaizen which hinder clear flow of information upward, downward as well as laterally. From the test of variance, it was noticed that people with different qualifications, experience and

divisions distinguished communication differently. People having qualification of 12+2 & Diploma and people having experience of below 3 years rated communication higher than other groups, whereas people working in the fastener division rated communication higher than the powder metal division.

At some point when organizations are considering actualizing empowerment programs, it is extremely basic that the management ought to create and impart obvious definitions. On the off chance that definitions are not unmistakably expressed, employees are likely to frame their own definitions, and that might create some inevitable uncertainty inside the organization. It is noticed that people with different qualifications and experience did not identify employee motivation & empowerment differently. But on the other hand, the test of un-equality revealed that people of the fastener division rated employee motivation & empowerment higher as compared to the people working in the powder metal division.

It has likewise been apparent in this investigation that kaizen requires a turnaround in corporate culture when contrasted with the old transitional type of administration in which the best administrators give orders and the workers just obey them. In ABC Engineering Pvt. Ltd. quality culture is not instilled and internalized by employees and quality is considered to be the task of the quality and process division. To this end, employees take kaizen execution as an additional burden and fail to own it as service quality enhancement, which thus causes a decrease in the service quality enhancement. It is noticed that people with different qualifications and experience did not identify corporate culture & positive mind-set differently. But on the other hand, the test of un-equality revealed that people of the fastener division rated corporate culture & positive mind-set higher as compared to the people working in the powder metal division.

Theoretical Implications

Kaizen is a theory that rouses the entire organization with the sense for development. This way of life looks for nonstop change and includes everybody from the most senior chief to the most junior representative. Kaizen is a framework that includes each worker - from upper administration to the cleaning group. Everybody is urged to come up with some little change proposals on a daily basis (Khan, 2011).

Displaying quality training throughout an organization frames some portion of the total quality change process that will be executed by the management. It is the main edge of the aggregate procedure as it gives correspondence and leadership to everybody. Also, it is receptive to the quality technique that states, "Quality is everybody's duty". In this manner, most fittingly, it is the growing part of the quality capacity (Gul et al., 2012). Results showed that the people having different qualifications & experience did not identify the training level differently. On the other side, the un-equality test results showed that people of the fastener division rated the training level high as compared to the people of the powder metal division.

Everyone is responsible for quality, especially senior management and the CEO; however, only the latter can provide the leadership systems to achieve results (Dahlgaard et al., 2007). Kaizen implementation begins with senior management and, most importantly the CEO's commitment (Besterfield et al., 2004). Delegation and

rhetoric are not sufficient - involvement is required. The test results showed that even people with different qualification, experience, and divisions, did not have any difference of opinion regarding top management's role & commitment.

Worker contribution is one way to deal with enhancing quality and efficiency. Its utilization is attributed for adding to the achievement delighted in by Japanese. Representative inclusion is not substitution for administration nor is it the last word in quality change. It is a way to better meet the organization's objectives for quality and profitability at all levels of a company (Besterfield et al., 2004). Results showed that the people having different qualifications & experience did not identify the employee motivation & empowerment differently. On the other hand, the un-equality test results showed that people of the fastener division rated the employee contribution & empowerment high as compared to people of the powder metal division.

A suggestion system is designed to provide the individual with the opportunity to be involved by contributing to the organization. Most of the ideas for continuous improvements will come from the team approach: The team must make it easy for employees to suggest improvements, review them promptly and implement them (Imai, 2000). From the test results, it is shown that even people with different qualification, experience and divisions did not have any difference of opinion for company-wide participation and standard quality circles.

Oakland (2007) explained worker strengthening as a domain in which individuals have the capacity, the certainty, and the promise to assume the liability and proprietorship needed to enhance the procedure and start the vital strides to fulfill client necessities inside highly characterized limits with a specific end goal to accomplish authoritative qualities and objectives.

All companies speak through their representatives. Communication conveys the company's esteem and values, desires, and bearings; give information about corporate improvements, and permit criticism from all levels (Besterfield et al., 2004). From the test of variance, it was noticed that people with different qualifications, experience and divisions distinguished communication differently.

Making a quality culture inside an association is progressively perceived as one of the essential conditions for the successful execution of kaizen. It requires revealing the current hidden culture and inspecting the propriety of the goals, keeping in mind the end goal to adopt kaizen. To close the gap between the old and the required new culture one should likewise investigate the new quality change process for accomplishing consumer loyalty (Dahlgaard et al., 2007). Results showed that the people having different qualifications & experience did not identify the corporate culture & positive mind-set differently. On the other hand, the un-equality test results showed that people of the fastener division rated positive mind-set & corporate culture high, compared to the people of the powder metal division.

Thus, the researcher tried to map the factors that are contributing to continuous improvement, using the Ethiopian Kaizen Manual. It showed the relationship between the factors and benefits obtained after implementation of continuous improvement.

The study was conducted to assess the methods and challenges of kaizen execution as a management system in the case of ABC Engineering Pvt. Ltd. It considered six major variables and identified their level of practice and major challenges encountered throughout their implementation. From the findings, it is concluded that these six variables play a vital role in the continuous improvement process. It is believed that this research makes a significant contribution to the literature on the implications for a selected industry regarding continuous improvement strategy, which will impact the firm's operational performance.

Managerial Implications

Management of ABC Engineering Pvt. Ltd. should communicate, motivate and support employees and effectively encourage their participation. It is essential to establish a platform for the proper integration of quality circles and to eliminate those challenges that inhibit the motivation and productivity of employees in practicing continuous improvement, such as additional evaluations and meetings, and unfair motivational schemes.

It is crucial to develop clear and successful techniques and a supporting plan for accomplishing the mission and goals. Leaders need to work on maintaining the current standards and strive to improve those standards by coordinating quality circles and working together with them.

When instructing directors and workers, managers must comprehend the procedures they oversee and in addition the essential idea of framework streamlining. Representative training should focus around the incorporation and suitable utilization of factual devices and problem solving. In addition, the training in kaizen should be on a continuous basis, including work specific training to enhance employees' capability and caliber.

The company needs to develop effective motivational schemes that energize employees to persistently participate by taking part in continuous improvement. Give appropriate recognition to employees who show outstanding achievement or provide improvement suggestions as well as articulating variable pay based on performance.

The company needs to work closely with appropriate institutions, such as PIM (Pakistan Institute of Management) until it is capable of managing effective implementation of the system. Also, ABC Engineering Pvt. Ltd. needs to inculcate the success story of other telecom sectors that have implemented continuous improvement as quality management, and take them as the benchmark and customize their best practices according to the existing scenario of the company.

Management of ABC Engineering Pvt. Ltd. needs to ensure that the system is geared towards a situation in which all members of the company are involved in continuous improvement, by which everyone participate with a mentality of quality as his/her own responsibility, rather than the task of a specific division. Employees and management should recognize the need to have a mindset: that each employee is involved in running the business.

In eliminating waste, ABC Engineering Pvt. Ltd. first needs to identify the different sources of wastes in the company, both in the visible and invisible working environment, that limit its efficiency. Though there has been good progress in assessing the risk areas in the company, it is very much lagging behind in developing a risk mitigation plan. To do this, it should first deploy the five S's across the company by offering proper training at each step and by developing an end to end plan on items and material that needs to be discarded. Everybody, from upper administration to the janitor ought to have 5S as a part of their individual occupation execution objectives. Incorporate an assessment of 5S execution as a part of each annual representative audit. Without this level of commitment to 5S, it will become merely auxiliary in significance and will gradually end up disregarded and ineffectual. Standardizing work practices around the workplace is also needed so that everyone will be able to know where he/she stands and where to proceed.

ABC Engineering Pvt. Ltd. needs to work on understanding the existing culture and utilizing the information to effectively delineate advances expected to achieve fruitful change. Adjustments in the way of life of an institution take quite a while and require exceptional consideration from top administration which needs to value it as a vital component of management. Social change begins with diagnosing the overarching society of the institution and adjusting this culture to a current or proposed methodology. As there is a close connection between the culture and technique of an organization, changes in methodology require strong changes in institutional culture and frameworks. Also, the company needs to decentralize the quality management system to all division/departments and closely monitor their progress. Sitting in an office and collecting reports weekly/monthly does not add value. Quality audits need to be deployed in a holistic manner.

Roadmap of Kaizen Implementation for ABC Engineering Pvt. Ltd.

Figure 2: Suggested Roadmap for Kaizen Implementation

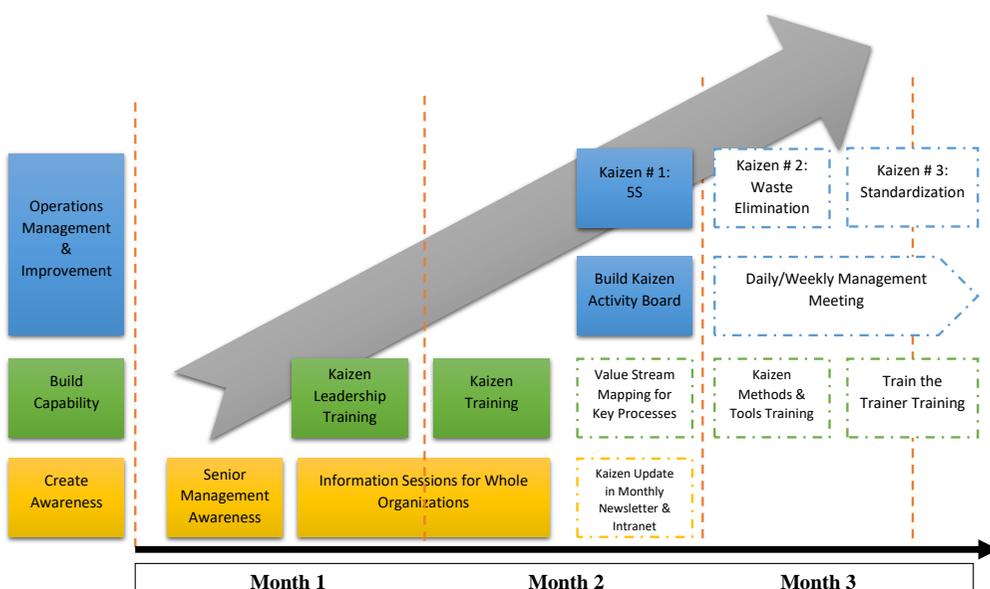


Figure 2 depicts the suggested roadmap for kaizen execution for ABC Engineering Pvt. Ltd. To start with, the firm has to make sure that the management is well aware of kaizen as a performance indicator. This can be done by organizing lectures or sessions on kaizen as continuous improvement. Following these sessions, the firm should organize training workshops for managers as well as team leaders during the first month. After making sure that the leadership is well aware and trained about kaizen as continuous improvement, training workshops for employees including lower level staff should proceed during the second month. Furthermore, after these training workshops; 5S should be implemented in the respective divisions followed by building a kaizen activity board, value stream mapping, and monthly kaizen newsletters.

Proceeding towards the third and last month for the kaizen execution, waste elimination should be applied for reducing wastes followed by standardization. Standardization plays a vital role in sustaining kaizen. Long-lasting kaizen cannot be achieved without standardization. Daily/Weekly quality council meetings should be held in order to produce updated reports for the process improvements and quality issues. Discussions should take place of solutions to the problems occurred in the divisions as discovered by the quality circles. Lastly, trainer training is necessary for kaizen execution as trainers help in developing the significant methods and skills for assessing the organizational needs that are aligned with objectives and business needs.

It was discovered in the findings that employees of ABC Engineering Pvt. Ltd. were not satisfied with the current implementation process of top management commitment to training and awareness, participation, motivation and empowerment, effective communication and culture and positive mind-set. Therefore, the researcher suggests that ABC Engineering Pvt. Ltd. should follow the above mentioned roadmap of kaizen execution to achieve better and positive outcomes.

Limitations and Recommendation for Future Research

The data gathered was restricted to the views of the respondents in the firm. This information was not reinforced by other data such as annual reports. Therefore, in future research, secondary data from annual reports and other authoritative sources may be useful, alongside the perceptual data, to achieve a genuine picture of the performance of the organization.

In this research, the respondents were managers from the two divisions of this engineering company. To minimize favoritism in the responses in future research, the data must be collected from various levels of the company, inclusive of the floor workers.

All studies and concepts on supply chain strategy, structure, and execution in this setting were assembled from past research in Asia, America, and Europe, for implementation in a Pakistani context. Thus, variations may exist in the method for training in other countries.

Samples were drawn from a single industry. Therefore generalizability might be limited in organizations which have an alternative environmental setting. Results of this research cannot be applied to every organization, because every organization has a different way of executing work and has different policies to execute that work.

This study was a general exploration of the practices and challenges of kaizen implementation in ABC Engineering Pvt. Ltd which represents the manufacturing sector. Further research could focus on analyzing all the aforementioned factors of kaizen in a service sector. Additional factors (such as employees' productivity, zero defects, automation) could also be examined.

REFERENCES

- Anthony, B. J., Jane, B., & David, O. (2005). *Management Control Theories Issues and Performance*. New York, USA: Palgrave Macmillan.
- Aoki, K. (2008). Transferring Japanese kaizen activities to overseas plants in China. *International Journal of Operations and Production Management*, 28(6), 518-539.
- Besterfield, D. H., Besterfield, M. C., Besterfield, G. H., & Besterfield, S. M., (2004). *Total Quality Management*. New Delhi, India: Pearson Education.
- Dahlgaard, J. J., Kristensen, K., & Kanji, G. K. (2007). *Fundamentals of Total Quality Management: Process Analysis and Improvement*. London, UK: Routledge.
- Deniols, R. C. (1996). Profit-Related Pay and Continuous Improvement: The Odd Couple. *Engineering Management Journal*, 6(6), 233-236.
- Ethiopian Kaizen Manual (2011). Addis Ababa, Ministry of Industry.
- Gul, A., Jafery, S. S., & Rafiq, J. (2012). Improving Employees Performance through Continuous Improvement. *International Journal of Economics and Management Sciences*, 1(8), 19-24.
- Imai, M. (2000). *Collaborating for Change: Gemba Kaizen*. Oakland, California: Berrett-Koehler.
- Irani, Z., & Beskese, A. (2004). Total Quality Management and Corporate Culture: Constructs of Organizational Excellence. *Technovation*, 24(8), 643-650.
- Khan, I. A. (2011). KAIZEN: The Japanese Strategy for Continuous Improvement. *VSRD International Journal of Business & Management Research*, 1(3), 177-184.
- Oakland, J. S. (2007). *Total Quality Management: Text with Cases*. 3rd Edition. Oxford; Burlington, MA: Butterworth-Heinemann.
- Phillip, M. (2010). Management directed kaizen: Toyota's J shuken process for management development. *Journal of Manufacturing Technology Management*, 21(6), 670-686.
- Reid, R. A. (2006). Productivity and Quality Improvement: An Implementation Framework. *International Journal of Productivity and Quality Management*, 1(1/2), 26-36.
- Robbins, S. P., & Coulter, M. (2012). *Management*. USA: Prentice Hall.
- Suárez-Barraza, M. F., & Lingham, T. (2008). Kaizen within Kaizen Teams: Continuous and Process Improvements in a Spanish municipality. *Asian Journal on Quality*, 9(1), 1-21.

Suarez-Barraza, M. F., Smith, T., & Dahlgaard-Park, S. M. (2009). Lean-kaizen public service: An empirical approach in Spanish local governments. *The TQM Journal*, 21(2), 143-167.