An Organizational Development Intervention at Innova Plastic Technologies Ltd through Kaizen and Lean Practices

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ABSTRACT

This paper studies the Organizational Development Interventions adopted by Innova Plastic Technologies Private Limited, Pune. This paper examines the Lean manufacturing; Kaizen framework adopted by Innova Plastic as an OD initiative in bringing out process and product improvements thereby increasing quality, at the same time saving costs and bringing out customer delight by providing defect free products through TQM.

Keywords--- Organizational Development; OD; Lean; Lean Manufacturing; Manufacturing; Kaizen;

I. CONCEPT DEFINITIONS

Organization

Organization is the process by which we identify and group the work that is to be performed, define and delegate responsibility and authority, and establish relationships so as to enable people to work most effectively in groups to accomplish the objectives (Louis A Allen, 1958)

Organizational Development (OD)

OD is a systematic effort, using behavioural science knowledge and skill, to change or transform the organization to a new state. (Beckhard, 1999)

Lean

Lean manufacturing often referred to as lean production, or even simply called "lean", is a systematic method meant for the elimination of waste ("Muda") within a manufacturing system. Lean also takes into account waste created through overburden ("Muri") and waste created through unevenness in workloads ("Mura"). Looking from the customer’s perspective – the one that uses a product or service, “value” is any action or process which the client or customer wouldn’t mind paying for.

Kaizen

Kaizen can be defined based on the original Japanese name it is frequently referred to -meaning “change for the better".

II. INTRODUCTION

To be successful and competitive in today’s business world, Organizations have realized that effective Organizational Development (OD) Interventions are required to continuously improve performance. This involves interventions at the organizational, group and individual levels. The scope of OD is so broad that it encompasses the whole organization (socio-technical systems). The primary objective of OD intervention is to improve the organizations’ performance but at the same time ensure the employees’ well-being. It involves respecting people and developing a supportive climate of trust by power sharing, a culture that is transparent and open, active participation and involvement of all the stakeholders. For OD interventions to succeed it should be supported at the top (CEO) and driven/owned by the employees at all levels of the organization.

According to Robbins (1994), Organization Development integrates a collection of planned change interventions which depends on humanistic and democratic values, that aims to increase the effectiveness of the organization and the well-being of the employees. OD interventions advocate the below mentioned values namely respecting people, generating support and trust, equal distribution of power, participative but also confronting if required.

Kormanik (2005) categorized Organizational Development interventions into six different groups namely Large scale, Strategic, Techno structural, Management, Team, Leadership development and group processes, Individual and interpersonal processes

Lean Manufacturing is one of the strategies adopted by organizations to improve and innovate their business operations. It is widely used in manufacturing companies across the world.

Lean is also often referred to as Lean manufacturing or lean production. The objective of lean is the elimination of waste (“Muda”) by adopting a systematic method within a manufacturing system.
Waste generated through overburden ("Muri") and waste generated through unevenness in workloads ("Mura") is also looked at as an objective of lean. Looking from the customer’s perspective—the one that uses a product or service, "value" is any action or process which the client or customer wouldn’t mind paying for.

The focus of lean is to understand what adds value to the product by reducing all other things. Lean manufacturing is a management philosophy obtained mostly from the Toyota Production System (TPS) and hence the term Toyotism is associated with it frequently. The term "lean" was later identified in the 1990s.


Innova Plastic Technologies Pvt. Ltd. is a manufacturing company situated in Pune, India. Their services include injection moulding, engineering design solutions, product development, reverse engineering solutions, cost innovation through value engineering, lean manufacturing, etc.

The company started their operations in 1997 and then registered as private limited company in April 2005.

The director Mr. Manjunath Bhosale possesses about 26 years of exemplary experience in manufacturing industry. He is a Lean Six Sigma Black Belt certified professional. He has been awarded time to time for Leadership & Management capabilities, Crisis Management skills, New product development skills, Turn around & Innovations, etc. He has a global business exposure that includes an experience of studying the global companies and using their processes as benchmarks as well as establishing overseas plants. Another director Mrs. Anuradha Bhosale also has a sound business knowledge and expertise. She has successfully managed various other establishments like an AUTOCAD training center, CAM designing and computer programming institute, a construction company, and an architecture consultancy company. She has trained numerous engineers to hone their designing skills.

The vision of the company is to become one of the most successful component suppliers and solution providers in the industry by 2018.

Innova Plastic believes in customer delight to build successful business relationship and ever-lasting trust. They continuously upgrade Quality of their product and ensure continuous Improvement in productivity by training and motivating at all levels in the organization. Through Designing, manufacturing & supplying defect free products on time, every time, they aim to provide competitive advantage to our customers. They train their employees and suppliers to create an environment to achieve continual improvement in quality, cost & delivery.

The company believes in implementation of best practices with the benchmarks from global markets. Innova Plastic Technologies Pvt Ltd is TS 16949 and ISO 9001:2008 certified company. They have been following Kaizen philosophy since year 2013.

III. LITERATURE REVIEW

Organizational development could be attributed to a set of behavioural science based theories, principles or values, strategies and techniques that aims to enhance individual development by bringing about a planned change of the organizational work setting that translates into improved organizational performance, by change in behaviour of the employees performing in their job (Porras and Robertson, 1992).

Beckhard (1969) defined organization development as a planned and managed organization wide effort that aims to increase the health and effectiveness of the organization through planned process interventions using behavioural science knowledge. Bennis (1969) defines Organizational Development as a complex educational strategy and a change management response to transform the organizations value systems that include beliefs and attitudes, the organization structure so as to enable them to adapt better to new markets, technologies and challenges, including the enormous rate of change itself. Beer (1980) says that Organizational Development aims at enhancing harmony between the organization’s structure, processes / procedures, strategies, people, and culture by creating new and innovative objectives that are organization centric, and ensuring that the organization evolves and renews itself.

As mentioned earlier, Organizational Development applies behavioural science concepts based on the anticipation that the organization’s structure, technology or environment is undergoing a major change. In addition to these changes, it also brings in alterations that are significant to an organizations business strategy. This may require modifying internal structures and processes to a major radical shift in the organization culture itself so as to support the new course of direction. This paradigm shift calls for innovative ways of organizing and managing organizations. The innovative ways requires us to think, perceive and behave in qualitative ways in the organization. OD involves cultural change, strategic change and self-designing organizations. It also involves development of behavioural science theories, practices, models and interventions to facilitate organizational transformation and change.

IV. ORGANIZATIONAL DEVELOPMENT OBJECTIVES

- Development of Individuals and groups
- Organization culture development and process development through continuous interaction between different stakeholders irrespective of the hierarchical levels
- Development of team spirit as a culture and behavioural change
- Socially empowering employees
- Focus on value creation
• Encourage employee interaction and involvement, developing an analytical mindset and take proactive decisions at various levels
• Introspect and assess existing systems and introduce / develop new systems that includes complete transformational change if required
• Transform the organization so that it finds / achieves its competitive edge
• Exploit Human talent and inputs through creativity, innovations, research and development thereby achieve organization growth
• Create an organization of self-managed teams through behaviour modification

V. TRAINING – A KEY INITIATIVE OF ORGANIZATIONAL DEVELOPMENT INTERVENTIONS

In today’s competitive business environment, training plays a key role in the competitiveness of an organization. It is a continuous process that evolves between different groups / networks of participants through interactions within and around the organization. This principle has drastically changed from the past perception that training is a daily routine activity to address deficiencies. Training facilitates a generic methodology to articulate common issues and difficulties, creates awareness of the gaps that exist in the systems, and increases the consciousness of participants thereby creating a greater need and energy for change. This dynamic and multifaceted approach has enabled training to be an effective Organizational Development tool / intervention. Irrespective of the organization formally launching an OD interventions, in-house training programs keeps regularly happening at various hierarchical levels.

Organizations today, to compete in the 21st century have had to come up with innovative and more robust manufacturing system. Lean manufacturing has led the way for all of them in ensuring they keep innovating and come up with processes that adds value to the system and eliminate waste.

Lean was initially conceptualized and started in a plant at Toyota Japan, better known as the Toyota Production System (TPS). Many manufacturing organizations has been adopting it since 1960’s after its huge popularity. Kiichiro Toyoda, Ohno, Taiichi and others at Toyota in the 1930s emphasized that it is possible to provide a variety of products and continuity in process flow through a series of simple innovations in the manufacturing process / the way we do things. This led to the invention of the Toyota Production System. According to Rinheart et al 1997, Organizations in the 21st century would follow lean manufacturing and that would be the preferred standard.

Lean manufacturing focuses on manufacturing without waste (Taj 2005). The waste comprises non added value activities / processes. There are seven type of waste overproduction in the manufacturing process. They are waiting time, improper processing and inventory storing, inappropriate transportation, excess motion in the production system and defects in the product (Melton 2005; Womack & Jones 2003; Ohno 1988). It is estimated that a majority of the companies waste anywhere between 70% and 90% of their available resources (Taj 2005). The value and non-value added activities in most production environment / operations were alarmingly highlighted by the Lean Enterprise Research Centre (LERC 2004) of the Cardiff Business School in UK.

• Value added activities is only approximately 5%
• Non value added activities but necessary as part of production is approximately 35%
• The remaining 60% of the activities doesn’t add any value

It shows that to enable return on investment (ROI) or increase the profit, it is crucial to eliminate waste, irrespective of the organizations size.

VI. THE CASE / BACKGROUND

Innova Plastic launched a new HTL (Heat transfer printing) printing service for their client EXIDE in October 2015. Soon after the launch they noticed a quality problem due to which suffered a high volume of rejection from customers. The problem was, the HTL failed during the acid and tape testing. The print would peel of when in contact with acid used in the battery. A lot of 12500 containers was rejected due to this problem.

Figure 1: The illustration of the problem (Source: Innova Plastic Technologies Pvt Ltd)
VII. THE PROCESS

The company took a prompt action to address this problem. They informed the client about their plan of action and kept them informed throughout. The production for this particular component was stopped temporarily.

As the company started following Kaizen since last two years, they have a team appointed specifically to work on process monitoring, improvement, and maintenance. The team included a Maintenance Engineer (Mr. Nazir), Tool Maker (Mr. Siddu) and the CEO Mr. Bhosale.

The team started working on the problem using Kaizen. They did Pareto Analysis, Fishbone diagrams, Why-why analysis and brainstorming.

![Figure 2: The root-cause analysis of the problem using various techniques (Source: Innova Plastic Technologies Pvt Ltd)](image)

The team also had to experiment with various parameters on the shop-floor. The experimented with different temperatures, pressures, length of labels, winding speeds, sensor alignment, etc. to come up with the optimum value of these parameters. After a relentless work for three weeks and numerous meetings, brainstorming, documentation and experiments, the team came up with new process that would lead to almost zero rejection.

They were also required to conduct the training for operators, supervisors and engineers – for example, one point lessons for work instructions of process parameters, printing tape testing, etc. The unit also had to introduce new audits and checks like checks for HTL printing, Location & aesthetic checking, surface finish checks, oil & dust checks, etc.

Due to this process improvement, the company achieved a cost saving of INR 23,19,552.
VIII. THE OD PERSPECTIVE AND WHY WAS IT SUCCESSFUL

The Built-in Culture & Philosophy

At Innova Plastic, the Kaizen initiative started to improve the process of HTL printing and reduce the reduction was successful within a short time of three weeks because of the certain philosophies and methodologies that are being followed by the company. The company believes in following the best practices. They follow the Total Quality Management (Six Sigma) and Kaizen philosophy as an integral part of their organization culture. They have a team specifically devoted to Quality Control & Management.

The Training Initiatives

The company conducts continuous training programme using various training techniques.

1. They have one-point lessons as part of their day-to-day operations. The CEO explains the one-point lessons as “what a mother teaches to a baby everyday”.
2. On-the-job training for operators. This is done either by supervisors or engineers.
3. Engineers are trained by production-in-charge.
4. Monthly training for productivity. At the end of every month, productivity report is prepared. The actual productivity is compared with the benchmarks and root-cause analysis is done for any gaps. After that a TNA (Training Need Analysis) is done and in-house trainings are conducted as per the result of the TNA.
5. Quality training is conducted for all the employees once a year. This particular training is outsourced to the vendors who are experts in the field.

A Place for everything & everything is in its place

The company follows the 5S (five ‘S’) principles to achieve “A place for everything & everything is in place”.

The 5S are: Sweeping, Sorting, Systematic Arrangement, System, Self-discipline and the additional “S” they have is Safety.

The CEO explains the 5S as “what we practice in a kitchen in every household”. This is mainly to achieve the highest level of organization.

Customer Delight

A complete transparency is observed by allowing customers to visit the shop-floor. This helps the company by customers identifying the issues much earlier which results into implementation of quick and cost-effective remedies. The CEO explains “Customers are treated as babies. They control the business”

IX. SUMMARY / CONCLUSION

Organizations due to high dynamics of change in today’s modern socio-economical environment have to generate new methods of responsiveness to arising
challenges. Organizational development interventions are a continuous process. It helps in enhancing the fit between the individuals and the organization, the organization and the environment, and among the different components of the organization – strategy, structure and process. This is achieved and implemented through innovations and other associated activities to tackle the specific issues and problems that exist.

Quality orientation/focus are one of the ways to gain sufficient competitive advantage. Kaizen helped Innova Plastic in addressing quality issues and made a positive impact by engaging and collaborating with people concerned thereby building an environment of trust and ensuring top class quality with nearly zero defects. The interventions ensured savings and customer satisfaction that translated into increased business, revenue and brand reputation to Innova Plastic. This change has also brought a favourable organizational culture that focused on progressive human resource development in the organization. There was support and drive from the top management that showcased a strong leadership. Employees were also willing to learn and change and with continuous process improvements and training to go with it there were massive improvements in quality to nearly 99.9%, timely delivery with substantial cost savings being achieved improving the company’s bottom line.

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