

Maintaining a Focus on Continuous Improvement

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ABSTRACT

Continuous Improvement is defined as making continuous incremental effective changes to the products/ process/ organization so that it can meet the customer expectations over time. Customer demands are never constant. So is the meaning of quality. It means that the definition of quality does not change with time but the meaning of quality does change with time. What is considered a quality product today might not be considered a quality product tomorrow. Thus continuous changes to the products/processes are necessary in accordance with the changing demand. In today's competitive marketplace it is necessary for every company to evolve itself and its processes in such a way that they minimize investment and maximize returns. Wastage cannot be afforded; neither can bad quality be tolerable. Customers are the most important assets of business. Employee is a fuel without which the company will come to a standstill. In such a market each and every company needs to improve continuously with time to stay ahead. This paper attempts to assess the issues involved with implementing and maintaining continuous improvement in a process based construction organization. The paper also looks at a case study with the objective to identify the factors affecting the success and failure of continuous improvement initiatives in organizations.

Keywords: Continuous improvement,

1. INTRODUCTION

"Competition", is the word that can define the work environment among companies in today's market. Each and every company is in competition with the other and is continuously trying to get ahead. They leave no stones unturned as they try to become the best in their respective fields. In such a competing market it is necessary for every company to evolve itself and its processes in such a way that they minimize investment and maximize returns. Wastage cannot be afforded; neither can bad quality be tolerable. Customers are the most important assets of business. Employee is a fuel without which the company will come to a standstill. In such a market each and every company needs to improve continuously with time to stay ahead. Continuous Improvement (CI) Process is the answer to that need. Continuous Improvement (CI) is a process with which a company can bring about a total change in the way it works for better.

This paper attempts to assess the issues involved with implementing and maintaining continuous improvement in a process based construction organization. The paper also looks at a case study with the objective to identify the factors affecting the success and failure of continuous improvement initiatives in organizations.

2. BACKGROUND

INTRODUCTION TO CONTINUOUS IMPROVEMENT

Continuous Improvement is defined as making continuous incremental effective changes to the products/ process/ organization so that it can meet the customer expectations over time.

Customer demands are never constant. So is the meaning of quality. It means that the definition of quality does not change with time but the meaning of quality does change with time. What is considered a quality product today might not be considered a quality product tomorrow. Thus continuous changes to the products/processes are necessary in accordance with the changing demand. Such changes are called as Continuous Improvement.

CONTINUOUS IMPROVEMENT TO PRODUCTS

Continuous Improvement to products is done to keep up with the latest advancement in technology. Consider the following example.

The picture given in Fig. 1 (a) is a 1969 *Chevrolet Camaro*. It was a best seller for the company and a quality product of its time. There were very few flaws in it and sold like hot-cakes in market. More than 220,000 cars were sold. Quiet an achievement in those times. However, Fig. 1 (b) is what we have today. This is the 2009 *Chevrolet Camaro*. This is the same company. This is the same car. But look at it now. The question that arises here is why? Why did the company feel the need to make any changes to the car that was selling well, had virtually no flaws and was considered a quality product? The answer here is because the customer demands had changed. However good the previous model was the customer wanted something more. And this is what *Chevrolet* decided the customer of today wants. This is a very good example of *Continuous Improvement to Products*.



Figure 1 (a): 1969 Chevrolet



Figure 1 (b): 2009 Chevrolet

CONTINUOUS IMPROVEMENT TO PROCESSES

Following lines are from the Home Site of AT&T, one of the leading service providers in United States.

“AT&T fulfilled the global vision of its charter, opening service to Cuba in 1921, Great Britain in 1927, and Japan in 1934. Conversations crossed North America by wire and the ocean by radio telephony. In 1935, two AT&T executives made the first around-the-world phone call. They spoke from adjoining rooms in New York, but their voices circled the globe.”

“Keeping pace with the growing demands for telecommunications required continuous innovation, improvement and expansion in each area. Transmission media evolved from open wires to cable, coaxial cable, microwave relays and to fiber optics. Switching evolved from operators at plug boards to electromechanical automatic

switches and special- purpose digital computers. And management evolved from master switching plans and route books to hierarchical networks and dynamic networks with real-time monitoring and control. AT&T's 21st-century network is the product of this evolution.”

As it has been clearly explained above the company had to continuously improve to expand their network and company to different parts of the world. Thus the company evolved with the help of Continuous Improvement principle.

3. IMPLEMENTATION OF CONTINUOUS IMPROVEMENT

Continuous Improvement is a process that needs everyone in the organization to support. Continuous Improvement applies not only to top management but also to a person that is least involved in the company. It requires everyone consent and support. Instead of imposing solutions on the people, the company must use their expertise to improve them. If training, education and proper guidance is provided to them they improve at realizing the potential improvement areas where the product/process can be improved. And if proper structure is provided, these improvements can be turned into reality.

Following steps can be followed to implement the continuous improvement system,

1. Organize a steering committee
2. Identify areas of improvement
3. Think of potential solutions
4. Develop a detailed solutions
5. Implement your plan
6. Evaluate your solution
7. Repeat with increasing frequency

If you watch closely these steps follow the Deming Cycle. Deming was the greatest contributor to the field of quality improvement the world has ever seen and his cycle called the PDCA cycle is one of the most known quality concept.

PDCA is the abbreviation for Plan – Do – Check – Act Cycle.

Steps 1, 2, 3 and 4 come under the Plan.

Steps 5 come under the Do part.

Step 6 is the Check part.

And Step 7 is the Act part.

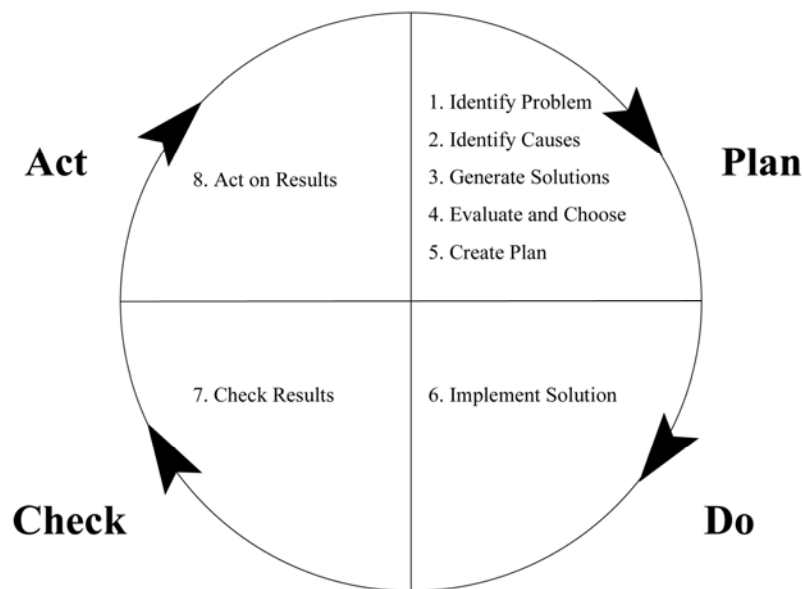


Figure 2: PDCA Cycle

4. CONTINUOUS IMPROVEMENT PHILOSOPHY

Additional steps for implementing a continuous improvement in an organization are to implement a continuous improvement philosophy.

1. Establish a feeling in the organization of commitment and enthusiasm to do things right. This must be established from the top to bottom.
2. Strive to achieve little steps forward everyday.
3. Ignite employee efforts to be creative in improving their performance.
4. Preach that good enough is never good enough.
5. Everyone in the organization must be involved.
6. The corporate culture must be reformed.

5. MAINTAINING FOCUS ON CONTINUOUS IMPROVEMENT

Once continuous improvement process has been established in an organization it is everybody's responsibility in the organization that it must be maintained.

According to Professor David M. Upton of Business Administration at Harvard Business School,

“Once a company has been through three or four of these it can get tiring and employees no longer take notice.”

This was said with respect to companies having many half-completed, failed attempts at getting improvement programs started. (Faculty Interview - <http://www.exed.hbs.edu/assets/faculty/upton.html>)

Following are some of the problems that organizations face in implementing and maintaining Continuous Improvement. How these problems can be tackled is also specified along with each problem.

PROBLEM # 1: LACK OF CLEAR ORGANIZATIONAL GOAL

It is estimated that only half of the organizations implementing Continuous Improvement (CI) techniques have clearly stated target benefits. And 20% of them are under-resourced. As a result industry experts estimate that CI programs fail within first year of their implementation.

The goal of CI is not to implement the method but rather to improve factors that are critical to improved business. Yet many manufacturers continue to implement CI without any clear objectives.

The first step to tackle this problem should be to have a clear organizational goal. The organization must have thorough understanding of its goals and limitations. It must also set realistic targets and must allot practical duration to achieve those targets. A phased approach must be used and tasks must be defined so as to achieve minimum investment and maximum returns.

PROBLEM # 2: CI ALSO NEEDS A CHANGE IN ORGANIZATIONAL CULTURE

When CI is deployed in an organization it should be confirmed that everybody is ready and trained for it. Change in work culture is critical for the success of the process.

As said by David Gallagher, Operations Director for Greencore Cakes & Desserts, one of Europe's leading ambient cake and desserts manufacturers.

““Merely forcing a new technology or a new approach to performing the work will only lead to great resistance. At the same time, you just can't send managers and supervisors to school for six weeks and expect improved results if you don't improve your processes or deploy practical technology. You must address all of these factors for CI to work.”

Employees must be openly communicated with at all levels. They should know the scope of the process and training must be provided about these new tools and processes to get long term results.

PROBLEM # 3: INVOLVEMENT OF EVERYONE IN THE ORGANIZATION

Deep, lasting improvements in an organization requires full commitment and participation of each and every person in the organization especially those at the lowest level. No one knows a job better than the one who does it. The person who actually does the job is the only one who can have a clear idea about the changes that the process needs for improvement. Thus it is necessary in a CI process that everyone in the organization is involved in the process.

According to Matt Davis, Operations Manager for Breyers Yogurts,

“A continuous improvement program that lacks deep involvement from employees at every level of the organization, especially the operators, is bound to fail. You need buy-in at all levels, and you have to be honest and open about what you're trying to accomplish. Employees need to understand that you're not trying to track their mistakes—you're trying to help them improve their performance.”

Also the involvement of employee must be substantial. They must be involved in the decision making of the process they are involved in to bring effective change. They must be empowered so that they feel that can bring about a change for better in the organization and truly contribute to company's success.

As stated by Graeme Jewett, President of Marsan Foods, a Canadian-based food manufacturer whose customers include large retail, food service and healthcare companies,

“It is critical that shop floor personnel feel a sense of control over their own lines. They need to know that they own the responsibility for improving performance. We are continuously looking for ways to make the line work better and this now comes from the shop floor up—not pushed from the top.”

When employees see that these new ideas, processes and technologies help them do their jobs better, their commitment increases significantly. They provide continuous feedback on their performance. This is critical for maintenance of the CI process.

PROBLEM # 4: FAILURE TO ENABLE REAL-TIME VISIBILITY AND TRANSPARENCY

For applying CI process one needs to have clear picture of the organization and its processes. However what one gets is the data and logs of various processes and outputs. But what the managers really need is the real time visibility and transparency of the system to determine the root causes of the problems. In fact one of the biggest problem of organizations is they cannot clearly see into their own business.

According to David Gallagher at Greencore,

“Relying on streams of raw data and outdated analysis can be compared to driving a car blindfolded and then getting a report at the end of the day detailing every accident you caused. A report on yield and cycle time three days later is not very useful to a busy operator whose primary task is to keep the line moving at any given moment. What operators need is real-time and relevant information they can use to avoid ‘accidents’ as soon as potential obstacles are identified.”

By providing operators with real time visibility and transparency one can ensure that the right action is taken at the right time by the right person thus ensuring the solution of the root cause.

PROBLEM # 5: FAILURE TO TAKE ACTION

“A decision not followed by an action, is really not a decision”

Visibility without action can be futile. Many times employees fail to take action not because they are unwilling but because they are unsure what action to take and are scared of committing a mistake. Thus they do not take any actions and the problems continue to exist. The solution to this is that employees must have a feedback loop. This will help them reduce their anxiety and will provide necessary incentive to take appropriate action at the right time.

Providing a platform a feedback loop to the middle managers is also necessary. Since they are often ignored the feedback from the employee. If not many problems are not addressed for weeks and even months. It is vital that the actions of the change agents within the middle tier are made quickly and in a manner that supports visible accountability with senior management.

Organizations must also empower employees to take decision that are within their circle of influence. Management must demonstrate a true commitment to act on the intelligence and specific suggestions of the employees. Failure to do so demoralises the workforce creates dissent and hampers the implementation of CI process.

PROBLEM # 6: LOSING CONTROL

Real time visibility enables control and helps improve performance. Yet organization must be careful that they must not get caught in the information overload. They must be able to distinguish between the important and unimportant information. Information Overload can lead to confusion among the employees and organization. As said by Greencore’s Gallagher,

“It’s easy to go into ‘KPI [key performance indicator] overload’ when the metrics are so easily available. Management must be careful to collect and disseminate information appropriately. The information you make available needs to be relevant and appropriate to each employee’s role. It should help them improve their performance, not overwhelm and confuse them.”

PROBLEM # 7: LACK OF CONTINUED EXECUTIVE SPONSORSHIP

Securing executive sponsorship is absolutely critical to the success of any CI process. Executive sponsorship helps reinforce corporate vision and creates unity along cultural lines. A committed executive can set the standards for project success. He or she has the authority allocate resources, remove obstacles, handle contingencies and drive key decisions that a successful implementation.

But the commitment must go beyond the initial implementation; it should continue till the process exists. A break in executive sponsorship jeopardizes both the programs survival and the expected return on investment. That is why steering committees with high level executive sponsorship should continue to meet and work to evaluate the program's result over time.

Gallagher says,

“A lack of continued executive sponsorship causes the worst kind of failure—it stalls the continuous improvement initiative. And when you lose momentum your chances of success plummet.”

PROBLEM # 8: DEPLOYING INAPPROPRIATE TECHNOLOGY

In an organization if right kinds of technology or processes are not applied it can lead to various problems. Problems can be as extreme as inadequate data or information overload. Also inappropriate technology does not bring any improvement in the process and thus the entire momentum of continuous improvement is lost. Usually in industries one must apply technology that applies to that particular industry. Thus selecting an out of box solutions, tailored to a specific industry, is usually the fastest and the most reliable way to achieve measurable benefits. Also noticeable is the fact that once the momentum is lost in a company it the CI process is bound to fail.

Says Gallagher,

“We specifically looked for a system that was not only easy to use, but could also supply the kind of information that a organization can use quickly. We felt very strongly that the solution would have to take a holistic approach; it would have to connect the shop floor with what the management system was doing.”

PROBLEM # 9: FAILURE TO EMPLOY A SIMPLE AND PRACTICAL IMPLEMENTATION FRAMEWORK

Facing the pressure to make their business a success many organizations tend to set unrealistic goals from their CI process. This can lead to detrimental effects on the process success.

According to Breyers Yogurts' Davis,

“If you really want CI to take hold throughout the organization, it's important to use a simple and practical framework and to set realistic goals and expectations. You're not going to solve all of your problems overnight.”

With regard to implementing new technology for CI, he added,

“Technology is critical, but it's only the enabler. You also need commitment from employees at all levels. They need to be properly trained on how to use that technology and they need to know that they can make a difference by contributing their ideas and getting involved in production decisions.”

Furthermore the team implementing new technology should,

- Have a deep understanding of their industry.
- They should be able to grasp the real problem to be solved.
- Employ a repeatable, transferable and scalable model implementation model.
- Use proven instrument and tools of improvement that can be understood by everyone in the team.
- Possess the authority and capacity to keep the project on track.

One should also understand that although CI process cannot bring about a change overnight it is necessary that quick wins exist. These quick wins however small they are build momentum, which generates belief and confidence. Quick win also indicate that the program is not just another passing fad that will further complicate their jobs and require painful changes.

PROBLEM # 10: TAKE PATH OF LEAST RESISTANCE

Creating a sustainable CI process requires that the people involved maintain their momentum and commitment to goals. Many initiative start well and then the teams get lost in paperwork, administration and other resource drains. By focusing on initial quick wins CI initiative can establish a foundation for delivering a payback on a broader scale in the future. Proving that the management team has listened and take action on day to day annoyances of the operators can also help bind the organization together. Finally remaining flexible set for initial improvements let the factory staff dictate them and ensure technology employed effectively support their needs.

At Calypso Soft-Drink the bottom-up approach was essential to the CI process. In discussing their real-time performance management technology implementation, James Holmes, IT Director noted:

“We had to encourage the organization employees to take part in the initial meetings, and understandably, they were reluctant to speak up at first but once they attended and realized they were being listened to and their opinions made a difference it was a different story – they were soon looking forward to the meetings and suggesting modifications to the system”

Given above were the ten problems that all organization that implement Continuous Improvement Process face. But as explained with true commitment, hard work, trust and team-work any organization can easily overcome these problems and lead their organization to success.

6. CASE STUDY: THE SPC INITIATIVE

Following is a case study that considers two scenarios: 1) where Continuous Improvement Process was a success and 2) where it was a failure. The factors affecting in both the success and failure are discussed.

CASE DESCRIPTION

- In this case ten areas were selected by top management for improvement through the application of *Statistical Process Control (SPC)*.
- The processes involved were plagued by extremely high rejection rates.
- The underlying problem with this initiative was to train middle managers with SPC
- These mid-level managers received broad based training in total quality, but they were not trained afforded detailed training in SPC or appraised of its benefits.
- A group of shop employees were trained in SPC methodology, and these workers developed an appreciation for the potential benefits available through the application of SPC to their processes.
- The initiative failed because middle managers and supervisors were not included in the process by upper management.
- Control charts, showing reject rates, were made and posted by shop employees.
- Managers and supervisors, accustomed to criticism over high reject rates, removed the charts.
- Furthermore, managers and supervisors berated shop employees and prohibited them from displaying their charts.
- The involvement of Quality Assurance department in this initiative was cited as minimal.
- The QA department was seen as functioning in an adversarial role, at that time.
- Senior management in the QA department was supportive of Total Quality.
- They attempted to influence their people towards becoming initiators and towards becoming more process oriented.
- QA personnel, however continued to inspect and police. This occurred despite the fact that they had more detailed Total Quality training than any other group of employees.

- The QA department was eventually disbanded. Steps were taken to salvage this initiative.
- The effort was halted completely, and managers at the division, branch, and shop level were systematically trained and made knowledgeable. Regarding the objectives of, and the benefits to be derived, the initiative.
- After educating the managers, facilitators were again employed to help shop personnel
- The effort was then restarted with increased support from managers.
- In this example the top management was considered to be supportive, because they could see the return on investment of resources. However communication from the top down to the shop floor was not very good despite continuous efforts to improve communication. (*Problem 3: Involvement of everyone in the organization*)
- Here, a group of selected individuals, considered to be supportive of Total Quality were provided training and help in the initial stages of the improvement effort.
- But for total and continuous implementation everyone should have been involved, allowing each person to have input and opportunity at recognizing what the major problems of the system were.
- *Everyone should have been made a part of the continuous improvement effort.*

FACTORS FOUND IN ACTIVITIES WHERE CONTINUOUS IMPROVEMENT WAS ACHIEVED AND MAINTAINED

- Top management leadership and support
- The role of Quality Assurance Department
- Training and Recognition
- Measurement and Analysis
- Employee Empowerment and Teamwork
- Strategic Quality Planning
- Quality and Productivity Improvement Results

FACTORS AFFECTING IN SUCCESS AND FAILURE OF CONTINUOUS IMPROVEMENT INITIATIVE

Factor	Successful Initiative	Unsuccessful Initiative
Top management leadership and support	+	+
The role of Quality Assurance Department	+	-
Training and Recognition	+	-
Measurement and Analysis	+	-
Employee Empowerment and Teamwork	+	+
Strategic Quality Planning	+	-
Quality and Productivity Improvement Results	+	+

Thus all the factors affect the continuous improvement process in one way or other and it should always be seen that all the processes in the organization should take care of these factors for continuously improving.

7. CONCLUSIONS

Continuous Improvement is an impressive and important method for a organization to be successful in this competitive world. Many of today's top organization have improved their performance and quality and developed a sustainable competitive edge through implementation of CI. These initiatives have proven to work, and avoiding the most common pitfalls in the journey of Continuous Improvement and Total Quality Management Implementation is the first step to ensure that this new way of thinking becomes integral part of every organization's culture.

8. RECOMMENDATIONS FOR SUCCESSFUL MAINTENANCE OF CONTINUOUS IMPROVEMENT POLICY

- Top management support is a must.
- Plan that integrates the factors necessary for continuous improvement into a workable initiative
- Everyone in the organization must be involved
- Leadership and Motivation
- Training
- Quality Culture implementation
- Employee Empowerment
- Teamwork
- Rewards and recognition
- Quantify achievements
- Measurement

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