

Lean Systems and Continuous Improvement

Seven Types of Deadly Waste

Overproduction

Overproduction occurs when operations continue after they should have stopped. The results of overproduction are;

- Products being produced in excess of what's required
- Products being made too early
- Excess inventory carrying costs



Waiting

Also known as queuing, waiting refers to the periods of inactivity in a downstream process that occur because an upstream activity does not deliver on time. Idle downstream resources are then often used in activities that either don't add value or result in overproduction.

Transport

This is unnecessary motion or movement of materials, such as work-in-process (WIP) being transported from one operation to another. Ideally transport should be minimized for two reasons;

- It adds time to the process during which no value-added activity is being performed.
- Handling damage could be incurred



Extra Processing

This term refers to extra operations, such as rework, reprocessing, handling or storage that occurs because of defects, overproduction or excess inventory.

Inventory

This refers to inventory that is not directly required to fulfill current Customer orders. Inventory includes raw materials, work-in-process and finished goods. Inventory all requires additional handling and space.





Motion

This term refers to the extra steps taken by employees and equipment to accommodate inefficient process layout, defects, reprocessing, overproduction or excess inventory. Motion takes time and adds no value to the product or service.

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Defects

These are products or services that do not conform to the specification or Customer's expectation, thus causing Customer dissatisfaction.



For many years, conventional wisdom told us “if it ain't broken, don't fix it!” The reality of today's business environment is that if you're not improving your business processes and delighting your customers, your business will not survive.

Many organizations create change either by vision or by crisis. The latter seems to be the most prevalent. A major crisis takes place that forces a company to make an improvement. When a crisis hits, it's because the vision or change efforts were not sufficient to avoid it. Quick fixes are then applied, and teams are formed to root out the problems. A champion may correct the problem, we think we fixed it, and it resurfaces later. We rarely take the time to step back, identify, and analyze what the real issues are, and the type of method to use.

Organizations are faced with numerous improvement choices and buzzwords everywhere; Kaizen, Lean Manufacturing, Six Sigma, TQM, Process Reengineering, Value Propositions, etc. Sometimes the wrong choice is made based on the latest fad or recommendation of another. Let us take a look at the fundamentals of what could create a need for change.

Dissatisfaction

Dissatisfaction often surfaces unfocused. There is a sense things should be working better. Employees may be complaining, customers are complaining that costs are too high for the services provided. For dissatisfaction to initiate a change it must be:

- Acknowledged
- Put into perspective
- Prioritized
- Related to a process

Acknowledgement of dissatisfaction occurs when someone chooses to understand it. **Data** is the key to ensure that dissatisfaction is acknowledged. Without data gathered, analyzed, and reported on a timely basis - the acknowledgement of dissatisfaction is unsubstantiated.



Dissatisfaction is put into perspective when there is [data to quantify](#) it, and when the interrelationship of stakeholders and conflicting satisfaction factors is understood.

Prioritization of dissatisfaction is done by understanding the [impact and risk](#), and selecting what is critical to act upon. This is the result of an analysis of the perspective gained by understanding various stakeholder interests and the underlying messages contained in data.

The results we get are a direct result of the processes we use. Understanding the relationship of what we do and what we get, [cause and effect](#) will enable us to relate dissatisfaction to specific processes. We reduce dissatisfaction by changing the processes that produce it. When dissatisfaction is acknowledged, put into perspective, prioritized and related to process it becomes focused. At this point we can work to [improve it scientifically](#).

[Who Cares About This?](#)

In order to put an acknowledged dissatisfaction into perspective and prioritize it, the question of who cares should be addressed. Those who care are [customers, stakeholders, and suppliers](#) to the process. Let's clarify the difference:

Customers – Those individuals, companies we directly serve.

Stakeholders- Those that can be affected by our success or failure, or doing something to serve the customer.

Suppliers- Those who supply what we need, “stuff” to do what we do to serve the customer.

Each of these parties have an interest in the process, however, their concerns and outcomes may differ. It is important to understand the dynamic interaction of issues that matter to each, and their importance.

[What Do They Care About?](#)

In order to focus improvements on what matters, we have to clearly [understand the interests](#) of the people involved. Customers, stakeholders, suppliers, management, employees, all that have been identified to this point.

It is the [“gap”](#) between these interests and the expected results that triggers the dissatisfaction that drives the need for improvement. Understanding the gap and the interests is vital to the development of measures. [Measures will quantify and qualify](#) the current results and provide a means of analysis and creative improvement.

Measures will most likely fall into three distinctive categories. Examples are:

- ❑ Service Quality Characteristics – Communication, Reliability, Responsiveness, Access, Competence
- ❑ Product Quality Characteristics – Performance, Features, Timeliness, Reliability, Serviceability, Durability.
- ❑ Process Performance Issues – Cost, Quality, Cycle Time, Quantity, Customer Satisfaction.



The data and the underlying issues of all concerned are not always clear. Effective analysis and understanding who cares and what they care about will lead to the development of measures providing a Balanced Scorecard of what matters.

How Do We Measure This Stuff?

The next question is “Now that I know what to measure, how do I measure it?” It is important to differentiate between two measures, in-process measures and end result measures.

In-process measures are available during the given process; they are “real time measures.” They can be used to measure processes, and improve the end result. Understanding the in-process results/measures will help you to fix potential problems before they become an end result.

An end result measure relates to the results after a product has been finished and delivered. For example, two questions that may be asked at an end result would be (1) Was it done on time? and (2) Was it finished within budget?

When you know who cares about this, what do they care about, and what to measure, then you can answer the question “How will I know success?” It's also important to identify your current level of performance “baseline”. If any improvement does occur, you will know by identifying later results in comparison to your baseline.

The information provided here provides ideas and areas of focus for continuous process improvement. Further steps such as methods for analyzing your data, benchmarking your performance, and other value added steps are key to effective continuous improvement. Whatever choice of methodology you chose for improvement, remember the basics. The choice of improvement you chose should be made based on Your business model, current and future needs, process capabilities, and customer expectations.

If you would like more information and methods for organizational Lean Systems and Continuous Improvement, please contact us at Sustaining Edge Solutions.

Toll free 888-572-9642

www.sustainingedge.com