UNIT-7 The Optimizing Phase

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Identify how Lean and Six Sigma methods can assist in managing and improving processes
- ✓ Use a variety of tools and techniques to eliminate waste and redundancies

Unit 7

The Optimizing Phase

What It's All About

The optimizing phase is all about taking your process and enhancing it. You need to thoroughly examine your process to maximize its output and improve it. Additionally, as customers' expectations change and your business grows, you need to ensure that your processes are still meeting the needs of your company and your customers.

This means that you need to take a hard look at the existing way you do things. You need to focus your efforts on:

- **Eliminating inefficiencies** or extra, redundant steps.
- **Decreasing waste**, such as pointless paperwork. These wasteful activities use a precious resource: your time. They make the cycle time of your process much longer and they add unnecessary headaches. As well, they add no value to your process.
- **Alleviate bottlenecking** by identifying the issue and developing solutions. Is there something you can be doing differently to make work happen faster and more efficiently?
- **Increase flow** by optimizing your workstations and using technological solutions.

Case Study

Think of a messy desk. We have all seen them and maybe we've been the desk occupant! This desk represents more than just the space you work in; it represents the process of how you do work. Think of the piles of documents and paperwork on top of this desk. Would this type of workspace be optimal? Is it efficient? Does it allow the worker to be productive? The answer to these questions depends on the person. Some people thrive in a messy environment but most of us need to be organized to be productive.

For most of us, having a messy desk impedes our workflow and work process. Think of the time spent searching for a needed file. Spending 30 minutes sifting through piles of paperwork when the document should have been found in three minutes is inefficient. It also impedes the flow of work, wastes time, adds extra steps to the task, and reduces your level of focus. What's more, the inefficiency of your desk could potentially cause a bottleneck. If you have misplaced a key report and someone else needs it to complete their job, your lack of organization can cause work to stop. Organizing our workspace can be vital to how well we perform.

In order to organize your desk properly, you need to devise a system that suits your needs. Simply putting files away and clearing the desk space may not be efficient. It will help you get rid of the mess, but if you have not devised a plan for retrieval, the solution will probably be temporary. Deciding how

you will store your files (by color, by date, by client, etc.) and adhering to your approach will ensure you have an established, consistent procedure and maximize results.

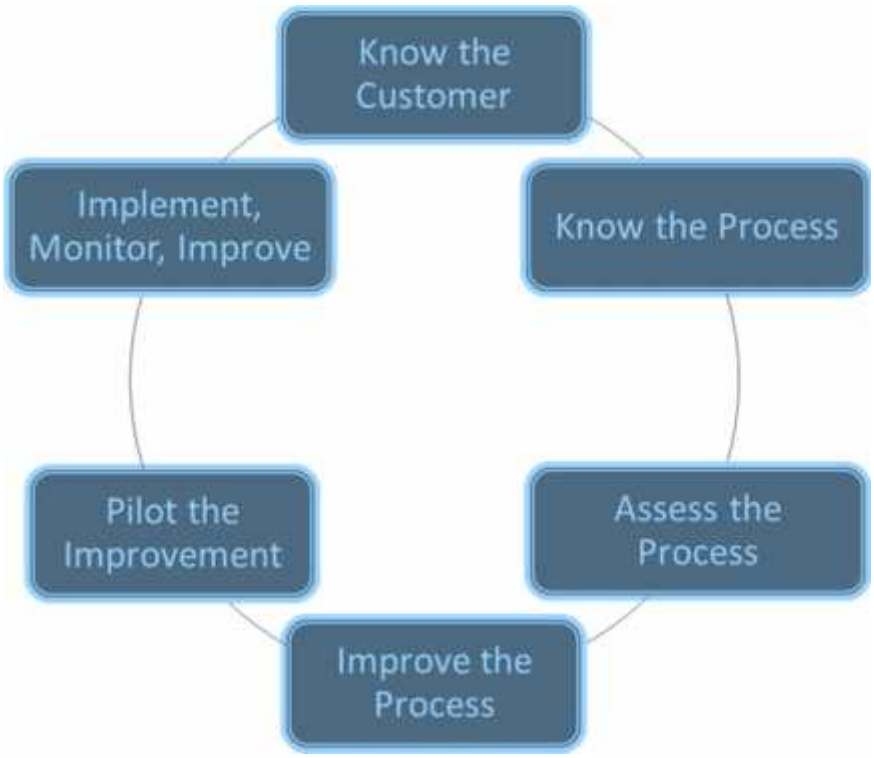
This simple example represents an optimized process. You took your existing process (the messy desk) and improved it in order to make it more productive and efficient. By improving the process, you added more value for yourself and the others that are affected by your workflow.

Business Process Improvement

Business process improvement (BPI) focuses on continuous process improvement. This approach concentrates on how to eliminate waste and increase efficiency to positively impact a business's bottom line.

Six Steps of Business Process Improvement

The following model illustrates the six steps of business process improvement:



Breaking Down Steps One to Five

The first step of business process improvement is to **Know Your Customer**. Ask questions of both your internal and external customers to get a better sense of how existing processes are meeting their needs. If customers are unhappy with the processes in place, determine why they are unsatisfied and what you can do to make it better.

The second BPI step is to **Understand the Process**. Break down each segment of the process and map it out. Then, determine ways to measure and track improvements. Make sure to track performance before, during, and after changes are made.

The third BPI step is to **Assess the Process**. Once you have your process mapped, it will be easier to analyze which steps are necessary or add value and which do not. You can then eliminate unnecessary or redundant steps in the process. As well, you will need to collect and analyze process performance data to ensure that your process is fulfilling the needs and expectations of your customers. This data will enable you to see opportunities for improvement.

The fourth BPI step is to **Improve the Process**. Once you have mapped and assessed your existing process, you need to determine whether you can enhance the process or if it is in need of a complete overhaul. You will need to weigh the pros and cons of each option and select the best solution for your situation.

The fifth BPI step is to **Pilot the Process**. Here, you can test your improved process before implementing any drastic organizational changes.

Let's have a more in-depth look at the benefits of a pilot before moving on to the last step of BPI.

Test Your Knowledge

List three benefits of starting with a pilot project rather than a full organizational process change.

Benefits of a Pilot
Easier to Acquire Funding

Any new initiative within an organization requires resources, which includes funding. It will be easier to acquire the funding you need and make the case for a pilot program than it would be for a full organizational program. Providing a large amount of resources and funding without proof that your initiative will bring success is a risk that not many organizations are willing to take. It is better to try this initiative out on a smaller scale that will allow you to build the evidence for why your organization needs this improved process. This will make a larger future investment much easier to acquire.

Easier to Get Buy-In

Having a pilot project allows you to prove the concept and gain credibility. This can make the process of getting buy-in from members of the organization much easier when you launch the process changes.

Easier to Measure

Having a pilot process allows you to measure the results before making any drastic organizational changes. A smaller scale pilot makes it easier to answer questions like: Does the process work as it should in the pilot? Does the process deliver what it should?

Easier on You

Let's face it: implementing process changes can be a daunting task. Start small to put less pressure on yourself. This will allow you to focus on the task at hand and do what's necessary to help the initiative be a success. A little bit of stress can be a good motivator but too much can impede your progress.

Easier to Expand Across the Organization

Once your pilot program is a proven success, it will be much easier to expand across the organization. During your pilot, you will learn a lot about implementing process changes. These lessons learned will enable you to fully implement your changes with more confidence and experience.

The Final Step

Finally, the sixth step of the BPI is to **Implement, Monitor, and Continuously Improve the Process**. The first part of this stage requires you to figure out how you will roll out your new process. For implementation, you need to focus on questions like:

- What is my budget? What are my budgetary constraints? Where would the money best be spent?
- How much time will be needed to implement this process? What are my time constraints?
- Who within the organization will I involve in this project?
- Do I need to seek help outside of the organization to accomplish my goals? If yes, who do I need to speak with?
- Is it necessary for us to upgrade our systems to implement this process? For example, if we plan on installing a new computer program, is our existing infrastructure sufficient or will we need to upgrade our systems?
- Do we need training for any of the proposed changes?

For monitoring and continuous improvement, you will need to continue to assess your process and make corrections and adjustments when necessary.

Introduction to Lean

What is Lean Process Improvement?

Lean process improvement is **a culture of ideas, tools, and processes that are designed to eliminate waste and improve workflow to provide maximum value for minimum cost.** The Lean philosophy was primarily developed by Toyota manufacturing experts Taiichi Ohno, Shigeo Shingo, and Eiji Toyoda.

Although it has only emerged as a popular business idea in the past few decades, its basic concepts have existed for over 300 years.

It is important to note that Lean should not be viewed as a quick fix or something that just a particular department does. The companies that have success with Lean efforts are those that incorporate it as part of their culture. Ideally, all employees should have some form of Lean training, whether it is a quick seminar or a complete certification.

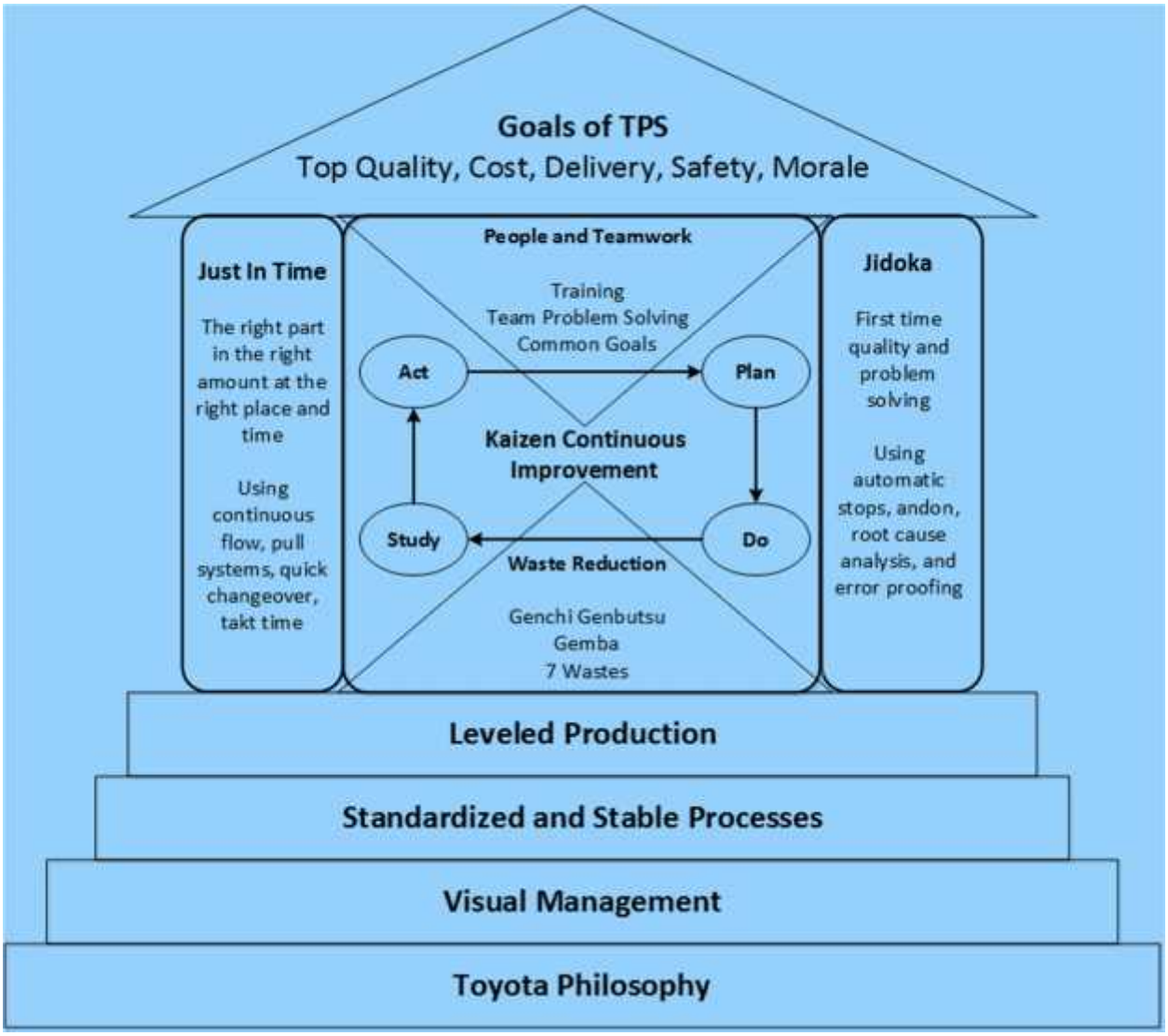
The Toyoda Precepts

Toyota's way of doing business is known as the Toyoda Precepts. These concepts are a key part of Lean methodology:

(Source: http://www.toyota.co.jp/en/environmental_rep/03/rinen.html)

The Toyota Production System House

The concepts of Lean and the Toyoda precepts are often drawn as a house to help us understand how all the elements come together:



The Roof

The goals and objectives of the Toyota Production System make up the roof of the house. The system aims to achieve:

- Top quality
- Minimal cost
- Proper delivery time
- Good safety and morale

The Pillars

Just-In-Time and Jidoka are the two pillars of the system.

- Just-In-Time means that you have what you need when and where you need it. It means no shortages, no waste, no bottlenecks, and no waiting. This can be accomplished with

continuous flow, pull systems, quick changeovers, and attention paid to takt time (the rate at which customers are demanding product).

- Jidoka means error-free production. This means getting it right the first time, every time. This means stopping production if a defect is found, performing root cause analysis to fix the true nature of problems, error proofing processes, assigning appropriate work to people and machines, and using visual signals (andon) to signal progress or issues.

The Core

The core of the system relates back to the basic Lean principles: people, problem solving, and the process of waste reduction. We can look at these three things as the core of the TPS philosophy.

The Foundation

A strong system must have four basic elements:

- Leveled production, so that resources are not overworked or idle (heijunka)
- Standardized, stable, non-varying, documented processes
- Visual management tools (signs, lights, etc.)
- Commitment to the Toyota philosophy of long-term learning, problem solving, and the involvement of people

The seven wastes that the Lean practitioners identified are:

- Overproduction of product
- Wasted time (workers waiting for parts, machines to be fixed, and other forms of being idle)
- Unnecessary transportation of product between manufacturing operations
- Process inefficiency
- Unnecessary materials on hand
- Unnecessary motion of workers or product
- Defective goods

By eliminating unnecessary waste and striving to work intelligently, Toyota reinvented their manufacturing process. Their focus on maximizing every stage of manufacturing resulted in drastic reductions in cycle times. Additionally, their no-waste philosophy helped to engineer a better product. These combined factors had an enormous impact on Toyota's bottom line.

Test Your Knowledge

Think of five examples of how you might be wasteful at work. (Remember, waste does not have to take a physical form; it can also be a misuse of time and other resources.)

Then, think of solutions for your waste examples.

How might the elimination of this waste change the way you work?

Cut Out the Waste

Introduction to Six Sigma
What is Six Sigma?

Six Sigma is a continuous improvement approach developed by Motorola in the 1980's. It was originally designed to focus on and reduce defects that occurred during the company's manufacturing process. The approach concentrated on measuring process variations that led to defects, like a human or technological error, in order to isolate and eliminate the variation. The Six Sigma process helped Motorola optimize its manufacturing process to have almost no defects.

By improving the manufacturing process, Six Sigma also decreased Motorola's production costs and created value for their customers. In the 1990's, the approach was adopted and popularized by Jack Welch of General Electric. Six Sigma theories have since been implemented in many other businesses with great success.

The Six Sigma Approach

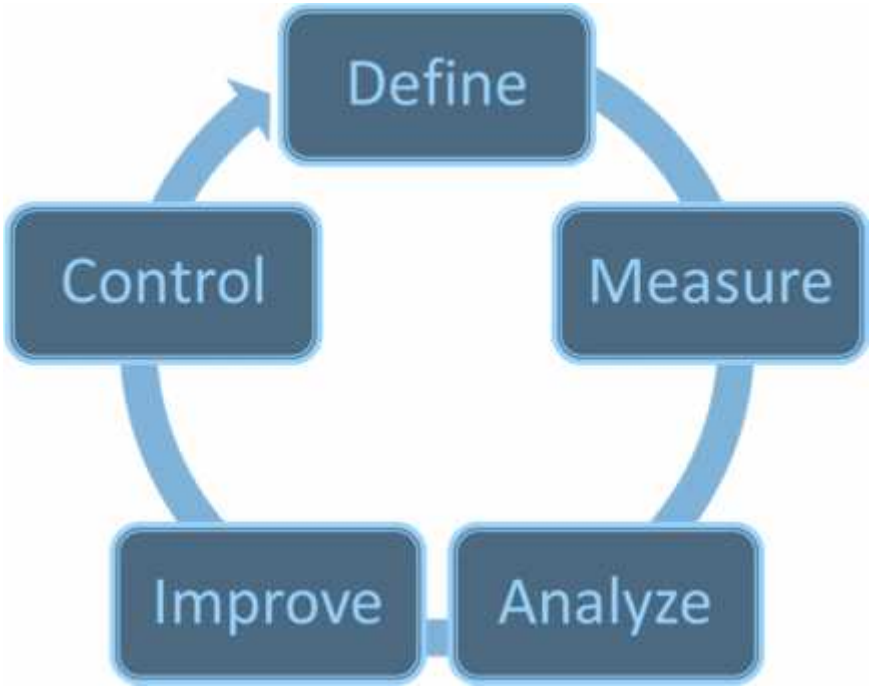
The Six Sigma approach focuses on:

- Reducing variation in processes and products
- Continuous, sustained improvement
- Measurable, quantifiable, stable results
- Commitment to perfection from the entire organization

Six Sigma methodologies can also be combined with Lean principles. This approach is called Lean Six Sigma and has been used by many organizations to improve process flow, improve quality, reduce waste, and reduce variation.

DMAIC Model

Six Sigma uses the DMAIC cycle to guide process improvement:



Breaking Down the Model
Define

This is where the who, what, where, when, why, and how of the improvement project is determined. Often, project management tools like project charters, business cases, and statements of work are used to lay out what is to be done. This will better enable you to acquire the resources you need and get the necessary support from your organization. All goals should align customer needs with the goals of the organization.

Measure

In this stage, you need to establish current performance levels and defect levels. This will help you create a baseline and evaluate future improvements.

Analyze

Next, you will analyze the data and set specific improvement priorities. This often involves statistical analysis and looking at cause and effect relationships.

Improve

In this stage, you determine how you can review and optimize the process. Continued analysis is important for making sure that your changes have the desired results.

Control

Now it's time to implement your process. You might even perform tests or pilot programs before doing a full-scale implementation. At all stages, the process should be controlled and maintained to ensure that defects are rectified. You will also gather and analyze data to make sure that the process continually delivers and achieves desired results.

A Look at the Numbers

The Six Sigma approach is all about the numbers. Having a process run at 99% efficiency may sound fantastic, but when you are dealing with a large volume of transactions, the 1% extra is extremely important. Essentially, Six Sigma aims to make a process 99.99966% efficient.

Imagine that your business is to lease POS systems (the machines that process debit and credit card transactions) out to hundreds of retailers. These POS systems process thousands of transactions per day. Your business also provides support for clients when the machines fail to operate.

The table below represents some of the processes involved in your business. The 99% accuracy represents where you are currently, while the 99.99966% represents your Six Sigma improvement end point.

Process	**99% Accuracy**	**99.99966% Accuracy**
Technical support resolving issues in one contact (ex. volume 61,000 issues per month)	610 issues per **month** that require more than one contact to resolve client issues	3 issues per **year** that require more than one contact to resolve client issues
Clients attempting to complete and close end of day transactions through wireless connections (ex. 43,000 attempts per day)	430 failed attempts per **day** to connect to the network through wireless connections	4 failed attempts per **month** to connect to the network through wireless connections
Secured network breach attempts (ex. 10,000 attempts per day)	100 successful breaches per **day**	12 successful breaches per **year**

When dealing with a large volume of transactions, the 0.99966% improvement that will see you operating at a Six Sigma standard is remarkable. Any improvement to move toward this end point will help your business. Remember, process optimization is gradual and takes time. Celebrate your improvements and use these advances to motivate everyone involved in your business to continue striving to reach the Six Sigma standard.

Further Reading:

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