Introduction to Lean Office and Service
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Learning Objectives

Upon completion of this course, student will be able to:

- Discuss why Lean Office and Service is important to an organization’s long-term success
- Discuss common obstacles organizations face when implementing Lean Office and Service, and explain how to overcome them
- Common obstacles organizations face when implementing Lean Office and Service, and explain how to overcome them
- Discuss the relationship between some important Lean tools, including process mapping, service family matrixes, and Value Stream Analysis, and demonstrate how to apply them

Introduction

What has happened to our Business Processes?

In any business, administrative or office functions make up a significant portion of organizational costs. In fact, it is not unusual to discover that over 90 percent of the lead time in an order is due to office functions, while only about 10 percent is due to the actual production of the product or delivery of the service. Even in a production environment, ineffective office processes make it more difficult for the manufacturing operations to do the best, most cost-effective work possible.

A true Lean enterprise must be Lean throughout; this includes its non-manufacturing functions. Over the years, the business environment has become increasingly complex.

Unfortunately, improvements to administrative and service processes have not kept up with these changes.

The resulting gap represents significant opportunity for improvement. Indeed, by improving these business processes, organizations can improve customer relations and market share, resulting in improved response to customer requirements.
Transactional Processes

In today’s Lean terminology, the non-manufacturing areas of an organization are often referred to as “transactional” processes.

From a Lean perspective, transactional processes can be broken into two main categories: office and service.

The biggest difference between two is that typical office processes provide “behind the wall” support, but in service processes, the customer is actually part of the process.

A few examples of service processes include order management, sales and marketing, and accounts receivable—all of which are dependent on customer interaction and communication.

Applying Lean Six Sigma

From a Lean perspective, there are no purely “manufacturing” companies. Because the success of a manufacturing company depends on much more than just providing error-free goods, its improvement projects can have significant transactional elements.

Some examples of transactional competencies needed in a manufacturing company include maintaining an innovative and motivated workforce; understanding existing and changing markets and customers, and designing new products and processes to meet those needs; processing and filing customer orders accurately; managing accounts receivable and accounts payable; and managing supplier networks to ensure timely supply of parts and raw materials. Often, the greatest opportunities for improvement exist within these transactional areas of an organization.

Transactional Process Improvements

Now that you have a basic understanding of what transactional processes are, the difference between office processes and services processes, and why they are an important part of every organization, let’s take a brief look at the origins of Lean Office and Service. Early efforts at improving office and service operations could be described as work simplification initiatives. Here are some examples:

In the late 1940s, a major airline reduced its reservation error rate from 30 percent to 5 percent in a six week period by combining work simplification and reduction with quality control charts.
In the early 1950s, a major manufacturing company used simplification techniques to significantly improve their billing process, raising accuracy rates with half the previous effort.

In the mid-1950s, a major insurance company implemented a program called “clerical quality control”, which today is commonly referred to as “business re-engineering”.

The Organization as a System

Traditionally, an organization’s management system has consisted of managing each area of the business separately. For example, separate management areas might include marketing, sales, production, and service. When each area works to achieve its goals separately, however, it usually leads to sub-optimization. Although each group may achieve its objectives, it often does so at the expense of the whole.

In Lean, rather than managing each area separately, the organization is managed as a system. As you can see in this diagram, which is referred to as a SIPOC diagram for supplier, input, process, output, customer, the system model is very basic. Within the business environment, the flow begins with suppliers providing input to the process. The process then provides output or results to the customers. These customers may be either external, or internal to the organization. Feedback loops tell the organization how it’s doing, and value feedback tells it whether it’s doing the right things.

Everything in a business is interconnected. By defining the interconnectivity as Value Streams, an organization can begin to see the big picture.

Focus of Lean Office & Service

Every business process receives inputs from suppliers and provides outputs to customers. The primary goal of Lean is to eliminate waste in the Value Stream in order to create real value for the customer.

When organizations succeed at eliminating waste, they are better able to provide exactly what their customers want, when they want it, and at a high level of quality.
In the office and service environments, Lean improvement activities focus on eliminating waste and speeding up the process. This is accomplished by eliminating idle time, bureaucracy, and unnecessary redundancy.

Lean Office and Service also helps organizations understand and predict changes in customer expectations, thereby enabling them to react quickly to meet customer needs.

Lean Manufacturing vs. Lean Office

Lean Office and Service has the same basic goals as Lean Manufacturing. However, in order to reach these goals, there are some inherent differences in that must be taken into account.

One key difference is that in manufacturing, waste is visible and easy to quantify. For instance, inventory on the shop floor can be physically counted to determine how much work in process (WIP) is accumulating between each step.

In a traditional manufacturing environment, inventory can accumulate throughout the process as WIP or even finished goods. In the office, however, it is more difficult to identify the amount of pending work at every workstation. Most transactional processes, such as information flow, do not build up physical inventory. Because office output is so often intangible, waste is not as easy to quantify as it is with manufactured parts awaiting assembly.
Another difference is that the office setting is more informal in nature than a manufacturing environment, which makes job identification more difficult.

Due to these differences, the transition to a Lean Office environment is often more challenging for organizations than the transition to Lean Manufacturing. Next, we will examine some of these challenges.

Potential Difficulties

Typical transactional processes are not always well defined or documented. As a result, when an organization embarks on an office improvement project, and introduces Lean Office principles, it should expect to face some challenges. Here are some common examples:

It is difficult to define a defect or error.

There may be very little data available, especially process performance data.

Although plenty of historical data may exist, it may be filled with errors or have been collected under unknown conditions.

Financial impacts and benefits of improvement are difficult to quantify.

Inventory or WIP is not visible.

Cycle Time data is non-normal and heavily skewed.

There are usually no performance metrics.

A lot of time is spent dealing with recurring problems, or just problems in general.

Personnel are often resistant to change.
Lean Office Implementation Problems

Whereas the successes of Lean in manufacturing are well documented, many office and service organizations are still struggling to apply Lean concepts. Even in companies with successful Lean implementations, the office and service departments often fall short of achieving Lean’s ambitious goals.

Some of the reasons organizations experience difficulties while implementing Lean within a typical office environment include the following:

- Failure to change how work is performed and how it flows through the process
- Failure to recognize Value Streams and identify where Value Added activities and Non-Value Added activities are present.
- Lack of a clear alignment with the business strategy and objectives
- Personnel are happy with the way things are and do not welcome change

Too often, when embarking on an improvement project, organizations look at how to improve things in their current office environment. However, to successfully implement Lean Office, organizations should instead think about why they are performing the current tasks, and determine what they really ought to be doing.

Define Customer Value

The first key principle of Lean is to define customer value. Only by understanding what the customer values, can an organization effectively deliver it.

To be successful, an organization must not only give the customer what it needs, but it must do so at the rate it’s needed, when it’s needed, in the quantity needed, and of the quality needed. Once an organization has defined value from the customer perspective, it seeks to deliver that value by reducing waste, improving quality, reducing lead time, and reducing costs.

It is interesting to note that a survey of major customers for a service business showed that the customers were not as concerned about speed as they were about the predictability of the process. In other words, customers want things to occur when they expect them. Lean Office and Service helps to develop flexible operations, which can easily adjust to changing business and customer demands.

Waste Reduction Opportunity

As you just learned, to deliver value to the customer, it is important to identify and eliminate waste. Waste in an office environment can be defined in the same Lean terms as it is on the shop floor.
The following are some common forms of waste in an office setting:

- Long lead times due to waiting.
- Unnecessary transportation and motion due to inefficient or cluttered work areas.
- Over processing due to excess paperwork or redundant approvals.
- Excessive and unnecessary e-mails or phone calls.
- Inventory, such as work piled up in an in-basket, obsolete files, databases, or folders.
- Wasted time in unplanned or unnecessary meetings.
- Wasted human talent through non-existent or poorly defined work procedures or job descriptions.
- Waiting idly for the next job assignment.
- Defects or mistakes due to incomplete or inaccurate information and data.
- Rework or reprinting of documents due to typographical or spelling errors.

Simplifying the Method

Value Added Analysis is an effective tool for defining customer value.

In Value Added Analysis, each process step shown within the process map is defined as one of the following three types of activities: Value Added activities, Non-Value Added activities, and Non-Value Added (required) activities.

Value Added Analysis can be used to reduce Cycle Time and bottlenecks, and to improve the overall flow through an organization or work unit.

Identifying Value Streams

The second principle of Lean is Value Stream Mapping. The Value Stream is the sequence of activities required to design, produce, and provide a specific product or service, and along which information, materials, and worth flows. Mapping the Value Stream is the key to identifying waste in the process and eliminating, whenever possible, those steps that do not create value.

One of the biggest obstacles to applying Lean improvements to office and service processes is a company’s existing organizational structure. Most companies are organized by departments or functions, which are centered around specialties rather than around the flow of information or the service being delivered. Theses organizational boundaries are often referred to as functional silos. It is not uncommon to find overlapping, redundant processes and responsibilities that contribute to conflicts.
between silos. In most cases, nobody is responsible for management and continuous improvement of the overall process.

In Lean Office and Service, as with Lean Manufacturing, the goal is to optimize the performance of the overall system. Real improvement comes through organizing and managing by Value Streams. Remember, a Value Stream consists of all the activities an organization must complete to generate a product, information, or service.

The Value Stream

Let’s take a closer look at a Value Stream, as it applies in an office environment.

Think about a typical purchase order request. The request begins with an initiator and then goes through a number of process steps, which may include several review and approval steps, budget review, and discounts confirmed. Next, the order is placed by the buyer. The external vendor then ships the ordered items to the initiator of the purchase request. As you can see, several organizations may be involved in this Value Stream.

Each process step, department, or organization involved either contributes by adding real value to the product or service, or adds no value. A key element of Value Stream Analysis is to draw all the process steps, and define each step as a Value Added or Non-Value Added activity. The resulting diagram also serves to document the actual process flow map; it is a starting point for mapping the Current State Value Stream.
Value Stream Map Example

Now let’s look at an example of how Value Stream mapping is applied in office and service environments.

In this example, we will look at a large global manufacturer’s Lean Office improvement project. The team’s focus is to improve the time it takes to process a purchase order, from issue to delivery. The departments involved in this process include operations, purchasing/logistics, and finance.

To map the Value Stream, the team begins by physically walking through each step of the purchase requisition process to show how it is currently functioning—prior to its Lean implementation. Next, the team prepares a service family matrix for the complete process cycle, involving all three departments.

In this example, note that between the time a requisition is initiated and the product is received, a lot of work activity occurs. Typically, significant waste can be found in these activities. Here, the process steps you see outlined in bold red are steps that require redundant requisition approval.

Remember, the scope of this particular Lean initiative is focused on improving the time to process a purchase order from issue to delivery. It is clear from this Value Stream Map, however, that significant work activity occurs after delivery, to close out the order. This activity presents an additional opportunity for Lean Office improvement.

Carefully review this overall Process Map, paying close attention to the extent of approvals required. Do all the approval steps add real value? Next, we’ll take a closer look.

Constructing the Service Family Matrix

Using the information from its process map, the team constructs a service family matrix. First, it documents and lists all processes and required steps. It then fills in the matrix by placing an “X” under
the steps required by each process. Next, the team analyzes and sorts the matrix, grouping similar processes together.

As you can see, the team identified that cross functional (or silo) approvals consumed the majority of processing steps, and that all three departments were involved. Looking at this matrix, now what do you think about all the approval levels required? Do they add value? Let’s dig a bit deeper into the team’s analysis.

As it begins its analysis, the team should walk the actual process step by step. Many organizations form a team of subject matter experts (SMEs), to review, confirm, and document the process flow map. Walking the process improves accuracy and helps identify potential process omissions.

In our example here, the majority of common process steps, 8 out of 10 or 80 percent, are found within the requisitioning department, and purchasing/logistics. This review and approval activity represents the most significant opportunity for waste reduction, which can be accomplished by carefully reviewing approval policies, improving queue delays, and eliminating or reducing redundant approvals. For instance, order reviews and approvals alone comprise 5 out of the processes 10 activities. That’s 50 percent! It is important to take note that this is a real life example.

<table>
<thead>
<tr>
<th>Process Name</th>
<th>Process Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Requisition Initiated</td>
<td>Internal Purchase Request Initiated</td>
</tr>
<tr>
<td></td>
<td>Department Supervisor Review &amp; Approval</td>
</tr>
<tr>
<td></td>
<td>Department Manager Review &amp; Approved</td>
</tr>
<tr>
<td></td>
<td>Financial Analyst Review (accounts payable)</td>
</tr>
<tr>
<td></td>
<td>Purchasing Agent Review</td>
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<tr>
<td></td>
<td>Discounts Confirmed</td>
</tr>
<tr>
<td></td>
<td>Purchasing Manager Review &amp; Approval</td>
</tr>
<tr>
<td></td>
<td>Purchasing Agent Places Order</td>
</tr>
<tr>
<td></td>
<td>Supplier Acknowledges Order And Places In Processing Queue</td>
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<td></td>
<td>Supplier Acknowledges Order And Places In Processing Queue</td>
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<td></td>
<td>Supplier Acknowledges Order And Places In Processing Queue</td>
</tr>
<tr>
<td>Supplier Order Processing</td>
<td>Supplier Acknowledges Order And Places In Processing Queue</td>
</tr>
</tbody>
</table>

Current State Value Stream Map

The best way to see waste in a Value Stream is to map it.

Continuing with our example, let’s look at the team’s Current State Value Stream Map (CSVSM). As you see, it follows the sequential flow of a purchase order document, from origination to delivery.

To create this map, the team captured each step, of both material and information flow, through the process. The CSVSM provides a real picture of how the organization provides this service to its internal and external customers. It also points out areas of waste within the process so they can be targeted by improvement efforts.
In our example, Value Stream Analysis shows that it takes almost nine days to get a purchase requisition through the cycle and place the order. However, the actual Value Added time is only 36 minutes. That’s only 1.0 percent Value Add, based on a 7 hour work day over the 8.95 days.

Now that the team has completed the CSVSM, it can determine what improvements can realistically be made. In this case, four of the steps can be improved, combined, or eliminated. These improvements include improving the flow of how orders are processed; combining operations; eliminating redundant tasks; and providing visual tools for tracking progress.

Mapping the Future State

Now let’s take a look at the results of the team’s improvement efforts.

In the purchase order, after the improvements were implemented, 3.8 days were removed from the process. Further improvements to the approval process saved an additional 3 days for a total 6.8 day reduction in the time to process the purchase order. The new processing time is now 1.8 days for a 75 percent improvement.
Improvements of this magnitude are very realistic and can be accomplished by simple review of the process flow, in conjunction with fully understanding why policies are in place.

Enable Flow

The third key principle of Lean is to enable flow. This principle is based on the concept that when value-creating steps occur in tight sequence, the product will flow smoothly through the process.

In a typical Lean process, Continuous (or One-Piece) Flow is ideal. Continuous Flow occurs when materials, information, or service is delivered with no interruptions and minimal waiting. The result is a better customer experience.

In office processes, however, batching and queuing occur frequently. For example, once a purchase order is generated, it may then sit in an in-basket waiting for an approval that happens only once a day. Similarly, the company’s Legal department may only review contracts every Thursday. This “hurry up and wait” method of processing work in office and service operations accounts for the majority of the delay.

The main reason for analyzing Value Stream flow in an office or service environment is to eliminate or reduce start-stop processing. This can be achieved by combining operations, eliminating redundancies, and providing visual tools for tracking work status as well as employee workload.

5S

As a foundation for achieving Lean, 5S methodology guides organizations to create and maintain an organized, clean, and safe work environment (remember, “Safety” is the sixth “S”).
5S is one of the most commonly used tools in office and service environments. That’s because within these environments, jobs are typically less structured than manufacturing jobs and often include a creative element. Offices and personal work spaces tend to get cluttered, which can affect the work that flows through them.

In a clean, organized office, workers are more efficient because they can find what they need, when they need it. They know exactly where everything is.

In a Lean Office, there is a place for everything, and everything should be in its place at all times when not in use.

Lean Tools & Techniques

Another important tool used to enable flow is Standard Work. Standard Work practices define the desired sequence of steps, the time required to perform tasks, and any other elements that ensure an activity is performed consistently over time.

Office and service personnel, including supervisors and office managers, are often resistant to Standard Work practices. It’s not uncommon, for example, to hear the following comments in office and service areas:

“Why should you worry about how I do my task as long as I get the job done?”
“Our environment is too variable and does not lend itself to standardized processes”
“We are a creative organization, and Standard Work does not apply to us.”

Such comments, however, are misguided. That’s because in the majority of office and service environments, Standard Work applies to what needs to be done, and not so much about how to do it. Office Standard Work instructions, and even job descriptions, are not at the level of detail found in a basic manufacturing environment. Rather, they function more as a reference tool for workers who have already been trained, as a means to maintain consistency and quality.
Now that you understand the roles that 5S and Standard Work play in Lean office and service environments, let’s look at some techniques used for implementing and maintaining an improved workplace.

Visual Management is a critical complement of any Lean enterprise. Because humans are very visual creatures, visual communications are extremely efficient and effective. Indeed, the visual language can disseminate knowledge more effectively than almost any other type of communication.

The layout of a Visual Office or Service Center facilitates the use of Visual Management. It uses Visual Controls to ensure everyone in the workplace can easily identify the state of normal or abnormal conditions.

Visual Controls can illustrate how to do a job; show where things are stored; indicate availability; show performance status; indicate when people need help; identify hazardous areas; and mistake-proof the operation.

Heijunka

Another useful tool for enabling flow is the Heijunka Box. It can be used in office and service environments to communicate the status of documents and control work flow.

As you can see in the Heijunka Box shown here, documents are displayed for all workers and leadership to monitor. As work is completed, it is very easy to see progress as well as “bottlenecks,” where help may be required.
Service Family Analysis

The layout and design of a workplace can have a significant impact on work flow in an office or service setting.

As we discussed earlier, traditional office layouts have a tendency to group people together based on functional responsibilities.

This often means that people who need to work together do not sit together. The result is that work, information, and data have to travel or be transported between function-specific personnel, whether through physical movement or electronic routing.

A “spaghetti diagram,” like the one shown here, is very useful in mapping the flow of the information or product through the office process.

In this example, note where the most significant work area traffic exists. Next, we will look at an improved layout and design for this workplace. As we do, keep in mind that transport and unnecessary movement or motion are two of the deadly Eight Wastes.

Cellular Workplace Design

Cellular Workplace Design focuses on physically linking people and supporting technology to make the workplace as efficient as possible. It seeks to maximize Value Added content, while minimizing waste. To do this, cellular design arranges people, equipment, and offices in a way that maximizes information flow, while minimizing physical and electronic transport paths.

When an office is arranged by process, product, or Value Stream, rather than by traditional functional organization, communication between people working on the product is better. Issues are easier to identify and are resolved more quickly.

Cellular Workplace Design also enables continuous work flow because all required information, people, equipment, and systems are in place and available.
Develop Pull

The fourth key principle of Lean is to develop Pull. When Continuous Flow is not possible, customers Pull value from the next upstream activity.

As you may recall from Lean Manufacturing,

Pull is a system of communicating production and delivery instructions from downstream processes to upstream processes.

The upstream supplier waits until the downstream customer signals a need.

Put in simplest terms, a Pull System means no one from upstream should produce or provide a service until the downstream customer asks for it.

In a call center, for example, incoming calls are received by greeters who assess the type of support required for each call.

Calls are not assigned to wait for an individual person, but to a support pool of technicians.

The call is taken by the next available representative in the pool. In this Pull System, no one from upstream provides any service until a need is signaled from the downstream customer.

Continuously Improve

The fifth key principle of Lean is to continuously improve.

As value is specified, Value Streams are identified, non-value added activities are removed, and Flow and Pull are introduced.
Once this process is completed, it begins again, and the steps are repeated. The improvement process continues until a state of perfection is reached, in which perfect value is created with no waste.

Remember, a Lean enterprise is Lean in all organizations. As office and service operations are improved, many more opportunities will rise to the surface and become visible. Therefore, the Lean initiative does not end when the future state is realized. Each Lean Value Stream is continuously revisited to identify more roadblocks for removal. The goal is zero waste and the minimum amount of time to deliver value to the customer. It takes a continuous commitment to ensure visual management and 5S programs remain effective. A product or service Lean Value Stream is a “living document” and should be continuously updated to encourage and incorporate new ideas and implement new improvement.

To achieve a truly Lean Office environment, an organization should leverage the lessons learned from successful Lean improvements in one service family, and map out a strategy to duplicate its success in other processes. Here, Lean and Kaizen leaders become a valuable resource within the organization. They can act as mentors, trainers, and experienced consultants to assist with the deployment of Lean tools and techniques in other areas.

Continuous improvement builds a Lean culture throughout the organization, which enables it to profit from identified opportunities and realized savings.

Three Key Techniques

As you have seen in this module, organizations face many challenges as they strive to integrate Lean into their office and service environments. Here are three key techniques for improving business processes:

1. Eliminate bureaucracy and non-essential processing, especially if it’s not an absolute requirement that can be justified.

2. Eliminate redundancy, such as requirements for multiple reviews and approvals or duplicate copies. Check to see if company policy requires this level of approvals or copies.

3. Complete a Value Add Analysis to determine whether work activity adds value to the service provided. In other words, find out if the customer is willing to pay for this activity or process step.
Lean Office and Service

Lean Office and Service can impact administrative and service processes at all levels of an organization. Here are some examples:

At the company level, Lean streamlines and accelerates processes that touch external customers and suppliers. These processes include customer service, order entry, accounts payable and receivable, sales and marketing, product development, distribution, and many more.

At the departmental level, Lean focuses on waste by reducing activities that add time, but little value. For example, Lean tools analyze the Value Stream, create flow to reduce or eliminate start-stop processing, and use visual management to create a Pull System.

At the individual level, Lean uses Standard Work procedures to reduce paperwork, manual entries, and errors; improve organization with 5S; and clarify individual roles, responsibilities, and objectives.