Praise for the Lean Office Pocket Guide:

"A masterpiece of quick-referenced tools and concepts for using Lean in the office!"
Chris Knight, Customer Service Manager, Eaton Corporation

"Using the Lean Office Pocket Guide is a perfect way to implement Lean tools in your administrative area. My Lean improvement team leaders receive pocket guides on day one."
Tom J. Casassa, CQE/SSBB/PM Head, Quality Engineering
Lean Office Naval Surface Warfare Center, Panama City

"If you follow the wise advice in this pocket guide you will discover how Lean can improve your patient care processes."
Joann Darelle, RN, Midwest Health Alliance

"A first of its kind! Lean Office tools made available in an inexpensive and practical format."
JA West, West and Associates, Inc.

"A great tool to use in Leaning out any administrative process - we see the value in improving our admissions policy."
Stu Tubbs, PhD., Darrell H. Cooper Professor of Leadership, Eastern Michigan University

E-mail: info@theleanstore.com
Web site: http://theleanstore.com
Phone: 745.475.4301
Contents

Acknowledgements vi
Publisher's Message vii
How to Use The Lean Office Pocket Guide viii
Lean Office Tool Usage Matrix x
Why Lean Office xii
A Lean Perspective xiii
Industries Served xiv
5S 1
Business Case for Lean 11
Continuous Flow 14
Cycle Time 19
Data Collection Techniques 23
Document Tagging 27
Heijunka - Leveling 32
Interruptions and Random Arrivals 36
Just-In-Time 40
Kaizen Events 42
Kanbans for Office Supplies 46
Lean Metrics 51
Lean Office Assessment 56
Lean Reporting and Communications 74
Office File System 80
Office Layout - U-Shaped 91
Acknowledgements

The Lean Office Pocket Guide represents the input of a select group of "pioneers" who have shared their successful administrative Lean experiences. This work could not have been completed without their commitment and expertise. Their experience will prove invaluable to any organization that desires to improve office/administrative processes. I wish to thank each of them individually:

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Tom J. Casassa, CQE/SSBB/PM, Head Quality Engineering Lean Office, Naval Surface Warfare Center, Panama City, Florida

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Roger Kremer, General Manager, Lomar Machine, Inc., Author, The Lean Office Pocket Handbook; The Lean Primer; Goals, Measurements and Results

Rob Ptacek, Author and Consultant

Stu Tubbs, PhD., Darrell H. Cooper Professor of Leadership, Eastern Michigan University, author, Small Group Discussion, McGraw-Hill

Curtis Walker, Consultant, GDC Consulting, Inc. Master Black Belt - Six Sigma

I would like to recognize Joe D. Buys, Crystal Clear Communications, Inc. for intense editing and critical review.

DonTapping
Publisher
Publisher’s Message

The Lean Office has finally arrived! More importantly, many of the practices documented in this pocket guide will allow any organization or industry to implement the tools necessary to achieve a Lean Office. The information is presented in such a format that you will have the right tool, at the right time, with the right administrative adaptation.

The essential Lean tools are all here, functionally described and illustrated for ease of adaptation and usage to:

- Identify and eliminate waste quickly and efficiently in any office environment
- Increase participation and communication at all levels of the organization
- Standardize best processes as the basis for improvement
- Create a favorable Lean experience so that a continuous improvement culture will evolve

Create your Lean Office transformation with *The Lean Office Pocket Guide*. Developed for managers, supervisors, and people working at all levels of the organization. Allow this insightful and ready-to-use guide be your path to increased efficiency and reduced stress in the office!

Don Tapping

Thanks for the love, patience, and support to my wife Kim and to my sons, Mark, Christopher, and Stephen (and to our dog, Sophia).
How to Use The Lean Office Pocket Guide

The Lean Office Pocket Guide is designed to be a convenient, quick reference. It provides valuable insight into the various ways that Lean can be applied in the office. You can put your finger on any entry within a matter of seconds!

Find the right tool for the Lean initiative by using either the Table of Contents or the Lean Office Tool Usage Matrix.

Table of Contents offers an alphabetical list of tools, techniques, and supporting documentation.

Lean Office Tool Usage Matrix organizes the Lean tools and concepts relative to important overriding themes. The themes are:

- People Involvement
  This is critical to any Lean initiative.

- Data Capture
  This is a must for obtaining accurate and reliable data upon which to utilize Lean tools.

- Process Stability
  The end result of using Lean tools is to eliminate waste and ensure process stability.

- Visual Controls
  Most Lean tools will have a visual as part of the implementation.

- General
  Reporting and understanding of the main concepts must happen to ensure success.

- Industries Served
  The tools and techniques referenced here would be the “big hitters” for Lean in that particular industry. It is acknowledged that all the Lean tools can be applied or modified in any of these industry segments.

What do the runner icons signify?

The Lean journey is similar to running a race. It requires people (runners), support (teamwork), and effective use of correct tools and procedures (shoes, hurdles, track, starter pistol, etc.). Most importantly, it requires the desire to improve and work toward a goal. In Lean, the goal is to eliminate process variation and waste.

Getting Started is the most critical step to initiating the Lean Office. When you see the getting started runner icon, expect a brief description of the tool’s purpose. You will also find out who is mainly responsible for doing the work, how long it will take to complete the task and what the benefits of using the Lean tool are.

Making Progress is represented by the runner passing off the baton. You can expect to find detailed steps in the implementation and use of this tool. This is the action phase that provides the step-by-step information to ensure the tool is used properly. It will provide insights into how people must work together in administrative areas for Lean Office results.

Achieving Goal is represented by the runner winning the race. You can expect to benefit from the many lessons learned over the years by the authors and Lean office “pioneers” who have shared their experiences within this pocket guide. At this point, you will have accomplished your goal and must now integrate and link what you have learned to other improvement initiatives within the organization.
The overall goal of *The Lean Office Pocket Guide* is to inform and educate how Lean tools and concepts can be adapted and used in office/administrative environments. The Lean Office Tool Usage Matrix on the next page was created to ensure you understand that these Lean office tools are part of a larger picture of People, Data, Process, and Visuals that are relevant to any type organization — from aerospace to zoo management. The importance of this is three-fold.

1. It ensures tools are utilized with the right intent (e.g., you would not want to create standard work without having people involved in the data collection of cycle times).

2. It raises awareness that many tools are utilized with People being very involved.

3. It communicates visual controls and process stability are central to many of the tools and concepts.

Use the matrix as a guide, checklist, or template for brainstorming. It will help you apply the right tool, at the right time, in the right way!

<table>
<thead>
<tr>
<th>Lean Tool</th>
<th>People Involvement</th>
<th>Data Capture</th>
<th>Process Stability</th>
<th>Visual Controls</th>
<th>General</th>
<th>Armored Services</th>
<th>Construction</th>
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Note: All tools have been successfully applied to administrative areas in manufacturing organizations.
Industries Served

Below are listed types of industries that could be improved by applying the Lean Office tools described in this pocket guide.

**Construction**
Processes such as project bids, project planning and on-site scheduling must use metrics of project lead time reduction, man-hour efficiency, and profitability to ensure competitive bids and support the infrastructure.

**Financial Services**
Processes such as mortgage applications, insurance claims, investment options must use metrics of customer retention, profitability, and value-added service opportunity to ensure these services are not outsourced.

**Healthcare**
Processes such as surgical services, outpatient services, clinical exams, insurance submittals, etc., must use metrics such as patient in/patient out, throughput times, nursing time efficiency, quality of care, patient satisfaction, and hospital system gain efficiency to control costs and continue to provide premium patient care.

**Manufacturing**
Processes such as customer service order entry, product development, quoting must use metrics such as order entry accuracy, quoted-to-order efficiency, and internal defects to keep work (and jobs) from being outsourced.

**National Defense, Federal, and Local Government Agencies**
Processes such as logistics, procurement, program management, system acquisition, engineering, and research and development all have large office work structures which can utilize the Lean tools to improve organizational process and flow, thus creating savings that can be better spent on serving the taxpayer more efficiently.

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**5S**

**Workplace Organization and Standardization**

*Why use it?*

5S is a process to ensure work areas are systematically kept clean and, thus organized, ensuring employee safety and providing the foundation on which to build the Lean Office. 5S is an improvement process to ensure everything has a place, and there is a place for everything.

The five steps in the process are:

1. **1S** - Sort through and sort out.
   *When in doubt, move it out!*

2. **2S** - Set things in order and set limits.
   *To ensure everything has a place and everything is in its place.*

3. **3S** - Shine and inspect through cleaning.
   *To be Lean, you must be clean!*

4. **4S** - Create and set standards.
   *Standardize to improve.*

5. **5S** - Educate and communicate.
   *Sustain for success!*
**Who does it?**

A temporary Lean team is normally established to initiate and monitor the 5S implementation. All employees will be responsible for contributing to the 5S process.

**How long will it take?**

Depending on the office area, each “S” should take only minutes to initiate. After the process is in place it should take mere minutes per day per employee to maintain.

**What does it do?**

5S provides a structured approach and easy-to-understand methodology (steps) for workplace organization, order, and cleanliness. This is accomplished by:

- Placing a team of workers in control of their own workplace
- Assisting a team and company focus on the causes of waste and its subsequent elimination
- Establishing standards for basic housekeeping and orderliness
- Demonstrating to customers and co-workers that a clean office environment is a foundation for good work flow
- Improving employee morale by ensuring the office area is safe, clean, and something to be proud of

**How do you do it?**

A cross-functional team is assembled and a target area is chosen. Workers from the area are key in making this project a success. Get involvement and buy-in from the departmental upper management for the project. Make sure to mention the potential savings in worker’s time and any other office efficiencies that will benefit the organization.

1st S  **Sort through and sort out.**
*When in doubt, move it out!*

This is a weeding out of items in the target area that haven’t been used for a period of time or are not expected to be used. The team and/or worker should follow these steps:

- a. Define the staging area for unnecessary items.
- b. Create guidelines for items not essential to the area. It is recommended that if an item has not been touched in 3 months, remove it from the area.
- c. Identify items not necessary in the area and red tag them.
- d. Locate tagged items to a staging area.
- e. Managers/Team Leaders determine disposition of tagged items. This may include: return to area, create common area, dispose of, or donate to charity.
- f. Post 5S visual circle in common area and place seal on the first S.
2nd S  Set things in order and set limits.  
*To ensure everything has a place and everything is in its place.*

This S establishes the locations where items belong, by either labeling or visual markings. The team and/or worker would accomplish this by:

a. Marking off common areas, labeling drawers and identifying everything within the area.

b. Create a standard for the target area, something to refer to if an item is out of place or not returned. It should be obvious something is missing and each item should be labeled to identify where it belongs.

c. Monitoring of the area to ensure this S is being completed.

d. After 1-2 weeks of monitoring this S, the seal should be placed on the 5S visual circle.

3rd S  Shine and inspect through cleaning.  
*To be Lean, you must be clean!*

This is basic cleaning of the area and establishing the sequence in which the area is kept up on a regular basis. This is from cleaning the keyboard to having the floor mats shampooed every month. The team should do the "spring cleaning" then create a Cleaning Plan. The team and/or worker would accomplish this by:

a. Setting time aside for the "spring-cleaning" activity.

b. Create the 5S Cleaning Plan for the area, which may be daily, weekly, etc.

c. Place the seal on the third part of the 5S visual circle.

The 5S is a team process, but it also involves the individual worker to commit to the process for his/her own area. The important point is to identify what needs to be cleaned, how it should be kept clean and by whom. Use a visual chart to ensure the process is followed.
4th S  Create and set standards for cleanliness.  
*Standardize to improve.*

Standardize involves creating guidelines for keeping an area organized, orderly, and clean. This also includes making those standards visual and obvious. It is accomplished in six steps:

a. Identify the target area.

b. Decide what the specific tasks are and where they should happen (location). List them on a sheet of paper.

c. Decide who will perform the tasks. List in column.

d. Decide frequency and supplies required. List in column.

e. Post in target area.

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<tr>
<th>5S Standards for Target Area</th>
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<tr>
<td><strong>Target Area</strong></td>
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<td>Task</td>
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f. Place the seal on the fourth part of the 5S visual circle. You may wish to rotate cleaning assignments weekly or monthly.

5th S  Educate and communicate to ensure everyone uses the 5S standards over time.  
*Sustain for success!*

The essence of Sustain is found in the saying, "Sustain all gains through self-discipline." This S will allow for all employees to be trained in the 5S methodology. A learning environment must be created to support those participants who have attending the training sessions. This is vital because the information presented in these sessions may be linked directly to employee’s jobs.

The following are the critical steps to perform in this S:

a. Create the 5S Training Matrix.

<table>
<thead>
<tr>
<th>5S Training Matrix</th>
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<tbody>
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<td>Name</td>
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b. Regularly conduct the 5S Office Audit.

Once an area has accomplished the 5th seal placement, brainstorm with the team to continue the 5S with additional visual, rewards, office competitions, showcases, etc., to maintain the momentum.
Offices are like living organisms in that they change and grow. 5S must be a process that adapts as employees come and go, as business conditions change, and as new technology develops. 5S is the foundation for a Lean Office.

The benefits of 5S are:

- Allows everyone to be involved in a simple Lean tool
- Provides the foundation for the Lean Office
- Assists in the elimination of waste
- Smoother work flow
- Reduced employee stress
- Provides a systematic process for continuous improvement
- Focus is on the process not the person

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**5S Office Audit**

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<th>Activity</th>
<th>Date</th>
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<td>1. Unneeded books, supplies, etc.</td>
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<td>2. Unneeded reference materials, etc.</td>
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<td>3. Items present in aisles, hallways, etc.</td>
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<td>4. Safety concerns</td>
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<td>Set In Order</td>
<td>5. Correct places for items</td>
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<td>6. Items are not put away</td>
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<td>7. Work areas properly defined</td>
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<td>8. Office equipment locations defined</td>
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<td>9. Desk surfaces, cabinets free of dust</td>
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<td>13. Labels, signs, etc. are clear to see</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standardize</td>
<td>14. Work information is visible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15. 5S Standards are posted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16. Everyone trained to standards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>17. Checklists exist for all areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18. Items in areas can be located quickly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustain</td>
<td>19. An audit sheet has been created</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20. Audits are conducted regularly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>21. Improvement ideas for 5S are used</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The 5S system can be immediately applied to an entire department allowing everyone to get involved in this Lean tool and activity. For detailed information, it is recommended you obtain the 5S for the Office - The Bridge That Links the Shop Floor to the Lean Office workbook (Productivity Press) or the 5S Lean Office User's Guide available at http://www.theleanstore.com.

Key Points for 5S in the Lean Office

- 5S must become part of everyone’s daily work.
- Make sure the first S “sort” is done well, as it will set the stage for the other S’s.
- Ensure before and after photos are taken and displayed.
- Obtain testimonials from workers during the process and submit to company newsletter.
- Be creative and adaptive to the changing office environments.
- Make reward and recognition part of the process.

Business Case for Lean

Why use it?

To create an understanding for the need to improve administrative areas. The organization can then be in a better position for growth and business success through the relentless pursuit of waste elimination. The Lean process must be part of everyday activities.

Who does it?

Everyone must adapt to the Lean Office for it to work. The Lean process must be embraced by the President or Owner, management, supervisors, and workers. When everyone is on board, contributing ideas for improvement the Lean system works every time.

How long will it take?

Approximately 1 hour to make the business case for the Lean Office.

What does it do?

It creates the “sense of urgency” within the organization to look at office waste and do something about it in a proactive way. It also:

- Communicates a common message to everyone
- Involves the top management immediately
- Creates the foundation for change
How do you do it?

1. Research how competition is forcing the organization to improve work flow, products and/or service to remain in business.
2. Prepare a presentation to all company employees on the market conditions and the organization's place in the market. Be as honest as you can without compromising confidential information.
3. Prepare information for potential questions that will arise.
4. Conduct a beta session to ensure timing, information and presentation style are appropriate.
5. Present the information at an employee meeting or at small gatherings (i.e., town hall meetings).

Meeting Information Form

<table>
<thead>
<tr>
<th>Logistics</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting Title: January Monthly Employee Meeting</td>
<td>Date: January 12th</td>
<td></td>
</tr>
<tr>
<td>Time: 1:00pm to 2:30pm</td>
<td>Place: Learning Center</td>
<td></td>
</tr>
<tr>
<td>Purpose: Review Monthly Measures and Introduce Lean Office plans.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Distribution & FYI Copies

<table>
<thead>
<tr>
<th>Participates</th>
<th>Roles</th>
<th>Participants</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Wells</td>
<td>President</td>
<td>All departmental heads - ensure all employees receive copy of agenda</td>
<td></td>
</tr>
<tr>
<td>Dave Bergman</td>
<td>Customer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Susan Turner</td>
<td>Marketing Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gerry Solomon</td>
<td>Training Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chris Perry</td>
<td>Customer Svc. Manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Item</th>
<th>Who</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00pm</td>
<td>Year end goals achievements, new goals, admin opportunities to excel</td>
<td>John</td>
<td>30m</td>
</tr>
<tr>
<td>1:30pm</td>
<td>Customer expectations, growth opportunities</td>
<td>Susan</td>
<td>20m</td>
</tr>
<tr>
<td>1:50pm</td>
<td>Newly formed partnership, opportunity for both</td>
<td>Dave</td>
<td>10m</td>
</tr>
<tr>
<td>2:00pm</td>
<td>Pilot project for Lean Office</td>
<td>Chris</td>
<td>10m</td>
</tr>
<tr>
<td>2:10pm</td>
<td>Lean Office training schedule, handout</td>
<td>Gerry</td>
<td>5m</td>
</tr>
<tr>
<td>2:15pm</td>
<td>The Goal Card example and questions</td>
<td>John</td>
<td>15m</td>
</tr>
</tbody>
</table>

**Company Confidential**
Continuous Flow

Why use it?
To move work or provide a service between processes with minimal or no queue time.

Who does it?
A Lean team will be established to review current work flow. The Lean team will brainstorm to see how office re-arrangement, cross-training, and eliminating other wastes can improve the movement of work.

How long will it take?
Days or hours to re-arrange office furniture or equipment. The planning can take up to a month. It should be noted office arrangement to improve work flow will be an ongoing activity.

What does it do?
Continuous work flow is many times synonymous with Just-In-Time (JIT). JIT ensures both internal and external customers receive the work unit or service when it is needed and in the exact amounts.

There are various degrees of continuous flow. True continuous flow in an office most likely will not be achieved, therefore, the tools of in-process supermarkets and FIFO (First In First Out) lanes can be utilized to assist work flow.

In-Process Supermarkets

It will be very unlikely work required by the customer (i.e., downstream process) will seamlessly flow throughout the organization and/or department moving from one process to another without some type of disruption. To minimize the disruption and maintain flow, in-process supermarkets can be utilized. These will assist in allowing transactions to occur from an upstream process only when it is needed by a downstream process.

The benefits of in-process supermarkets are:

- Reduction in overall lead times
- Reduction in queue times (those piles of paper on the desk)
- Easier identification and rectification of problems when they occur
- Reduction in the number of hand-offs
- Increased throughput
- Reduced stress
First In First Out Lanes (FIFO Lanes)

Another way to control the flow between processes in a method referred to as First In First Out (FIFO). FIFO is a work controlled method to ensure the oldest work upstream (first in) is the first to be processed downstream (first out).

In administrative areas each job, every order, quote, invoice, budget report is unique. Every engineer drawing is unique to that customer. Every diagnostic reading from the Radiology Department is unique to that patient. But what is interesting is each of those can be associated with a time element. It may be a rough estimate, but nonetheless, it is something.

The FIFO lane has the following attributes:

- Located between two processes, clearly identified as such
- A maximum number of work units to be placed in the FIFO lane must be made visible
- Is sequentially loaded and labeled
- Has a signal system to identify the upstream process when the lane is full
- Has visual rules and standards posted to ensure FIFO lane integrity
- Has a process in place for assisting the downstream process when lane is full and assistance is required

MAX = 4 WORK UNITS

The team can be creative in establishing the signal method within the FIFO system to indicate when the system is full. This could be a flag that is raised, a light, or an alert e-mail to the upstream process. The important point is to ensure a signal is established that will work effectively. When it is displayed, the upstream worker lends support to the downstream worker until the work is caught up. There is no point in continuing to produce upstream when the downstream process cannot do anything with it. When this happens, it becomes overproduction waste; that is considered the worst waste of all.

It must be acknowledged the office will always continue to have drop-ins, or immediate management requirements that will affect whatever system you implement to improve office work flow. Do not let that stop you. Continue to collect data on these drop-ins and work to eliminate them or schedule them with the manager.

The benefits of FIFO are:

- Reduction in overall lead times
- Reduction in queue times (those piles of paper on the desk)
- Easier identification and rectification of problems when they occur
- Reduction in the number of hand-offs
- Increased throughput
- Reduced stress

How do you do it?

There are seven steps in determining how to improve the office for continuous flow.

1. Review the current office arrangement and process tasks to determine what wastes are involved in terms of travel, motion, and lack of cross-training.
2. Brainstorm with the team to consolidate office arrangements to reduce or eliminate the wastes identified in (1). Processes may need to be modified or standardized. People may need to be trained to understand this new process. (See Office Layout)

3. Determine if an in-process supermarket or FIFO lane is required.

4. Prepare a plan to implement proposed changes with expected results. Make sure to obtain management approval.

5. Implement the new office layout and/or new process(es).

6. Balance the work loads amongst workers. (See Work Load Balancing)

7. Consider new technologies and software enhancements as you continue to improve.

**Key Points for Continuous Flow in the Lean Office**

- Both the in-process supermarket and FIFO lanes are compromises to pure continuous flow.
- In-process supermarkets are more commonly used for office supplies.
- FIFO lanes, as long as the system is in place for upstream notification that the lane is full, is the most common office tool to improve work flow.
- Continually work to reduce the queue time between processes.
- Intensive cross-training and work standardization are great tools to assist continuous flow.

---

**Cycle Time**

```
Why use it?
To establish the time elapsed from the beginning of a work process until it is completed. To be used with takt time in establishing the best combination of work load and task assignments.

Who does it?
Anyone familiar with the process or tasks. The times should be accurate.

How long will it take?
Administrative processes can take between 3 seconds (i.e., to a computer entry) to 1 week (i.e., to create a construction project proposal). Establishing accurate times for the process is critical for improvements to be sustained.

What does it do?
Cycle time is the amount of time for a task to be completed. Cycle time should not be confused with takt time. Cycle time is the rate of the process. Cycle time allows for a clear understanding of the number of workers required (if takt time is known). Cycle time (as well as Takt time) should be used with Standard Work.
```
There are three types of cycle times:

**Individual cycle time** is the rate of completion of an individual task or single operation of work. For example, obtaining a credit report for a mortgage application.

**Total cycle time** is the rate of completion of a process or group of tasks that have a common element. This is calculated by adding up the individual cycle times for that process or value stream.

**Group cycle time** is the rate of completing a group task or objective. This is the total individuals' times added together for a project. This can be accomplished by accurately tracking individual times within a project management system.

### How do you do it?

To determine how many workers are required for a task:

1. Individual cycle times are obtained by adding all tasks for an individual process.

<table>
<thead>
<tr>
<th>Worker 1</th>
<th>Worker 2</th>
<th>Worker 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work</strong></td>
<td><strong>Description</strong></td>
<td><strong>Cycle Time</strong></td>
</tr>
<tr>
<td>1</td>
<td>Internet Retrieval</td>
<td>1 m</td>
</tr>
<tr>
<td>2</td>
<td>Transfer</td>
<td>3 m</td>
</tr>
<tr>
<td>3</td>
<td>File Storage</td>
<td>2 m</td>
</tr>
<tr>
<td><strong>Total Time</strong></td>
<td><strong>6 m</strong></td>
<td><strong>18 m</strong></td>
</tr>
</tbody>
</table>

2. Add the individual cycle times to obtain the total cycle time for the process or value stream.

   Worker 1  Worker 2  Worker 3
   Cycle time = 6 m + 18 m + 3 m

   = 27 minutes total cycle time

3. Calculate takt time (See Takt Time). You calculate takt time by dividing the available work time for a day (minus meetings, breaks, etc.) by the total volume of work required for that day.

**Typical office day:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Available Work Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 – 8:10</td>
<td>morning meeting – not available work time</td>
<td>140 m</td>
</tr>
<tr>
<td>8:10 – 10:30</td>
<td>work available time</td>
<td></td>
</tr>
<tr>
<td>10:30 – 10:40</td>
<td>morning break – not available work time</td>
<td></td>
</tr>
<tr>
<td>10:40 – 12:00</td>
<td>work available time</td>
<td>80 m</td>
</tr>
<tr>
<td>12:00 – 1:00</td>
<td>lunch – not available work time</td>
<td></td>
</tr>
<tr>
<td>1:00 – 3:00</td>
<td>work available time</td>
<td>120 m</td>
</tr>
<tr>
<td>3:00 – 3:10</td>
<td>afternoon break – not available work time</td>
<td></td>
</tr>
<tr>
<td>3:10 – 3:40</td>
<td>meetings (average this for the week) – not available work time</td>
<td></td>
</tr>
<tr>
<td>3:40 – 5:00</td>
<td>work available time</td>
<td>80 m</td>
</tr>
</tbody>
</table>

**Total available work time is:**

140 m + 80 m + 120 m + 80 m = 420 minutes per day.

Let's say the volume of work is 20 customer orders per day.

420 **minutes per day**

20 customer order per day = 21 minute takt time
4. Dividing the total cycle time by the takt time will determine the total number of workers required for the tasks.

Optimal number of workers needed =

\[
\frac{27 \text{ minutes (total cycle time)}}{21 \text{ minute (takt time)}} = 1.3 \text{ workers}
\]

**Key Points for Cycle Time in the Lean Office**

- It will be a challenge to obtain cycle times, but do not let that stop you. Even though the times may not be as accurate as they should be, at least start to establish times. You will always be coming back to these times in kaizen activities.
- When determining the optimal number of workers needed:
  - if X.5 is greater, round up
  - if X.5 is less, round down
- Kaizen is used to eliminate, reduce and streamline the individual cycle times (the Standard Work Combination Table will assist in this process). Do not use this as a tool to reduce people in the organization.
- It is suggested multiple cycle times be collected to determine the most accurate number representing that particular process or task time.

**Data Collection Techniques**

**Why use it?**

To accurately and efficiently collect information relative to customer demand. This will allow the team and the manager to allocate the appropriate resources to ensure demand is met.

**Who does it?**

Everyone will need to collect relevant data as it pertains to the value stream project. This would include managers and supervisors.

**How long will it take?**

This will only take a few minutes per day to accomplish. If urgency is an issue, then a minimum three month historical trend can be utilized. This may take 2-3 hours.

**What does it do?**

Data will be required to calculate takt time for your organization. This can be collected by providing the worker with the Data Capture Form to identify the work they are currently doing. The team should create a standard form that lists the various common processes. The worker can then only tic-mark when the process is performed. (Cycle times will not be gathered at this time).
Good data collection techniques provide the following:

- Creates good baseline upon which to utilized Lean tools and concepts
- Creates an awareness of actually what is being done and by whom
- Documents the various known processes that are being work on as well as those “other” duties that occupy people’s time

**How do you do it?**

1. Brainstorm with the team to generate a list of common processes in the department or what has been determined to be the value stream.

2. Create a Data Capture Form that will list the processes from (1). Ensure the form has additional space to document additional processes not listed.

<table>
<thead>
<tr>
<th>Data Capture Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Department</td>
</tr>
<tr>
<td>Process Name</td>
</tr>
</tbody>
</table>

3. Utilize the form for a given period of time. It is important that the length of time used on this form not be less than a month. Consideration may be given to extending this time to cover seasonal variations if the organization is sensitive to that.

4. Consolidate the report.

5. Identify common processes that serve multiple value streams.

6. Calculate takt time. (See Takt Time)

7. Create a plan to ensure takt time is met using Lean tools.

8. Create a demand “Help” tool.

Takt time will be eventually become a common word within the Lean Office. Takt time should be made visible to workers. This can be accomplished by creating a small placard with the takt time displayed to be located at the point of use. This is called the demand “Help” tool. The benefits of this are:

- Creates awareness of the importance of takt time
- Compliments the efforts of the Lean Office visual tool
- Improves productivity by constant attention to customer demand

**Distribution Report**

Another option would be utilize historical data on customer demand if it is available. This should be at least 3 months worth of data. After the customer demand raw data for the processes within the value stream has been collected, a Distribution Report should be created.

<table>
<thead>
<tr>
<th>Data Collection Techniques</th>
<th>LEAN OFFICE POCKET GUIDE</th>
<th>25</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Distribution Report</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department</strong></td>
<td><strong>Date</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Value Streams</strong></td>
<td><strong>January</strong></td>
<td><strong>February</strong></td>
</tr>
<tr>
<td>Oil changes</td>
<td>550</td>
<td>400</td>
</tr>
<tr>
<td>Transmissions serv.</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Belt replacement</td>
<td>33</td>
<td>40</td>
</tr>
</tbody>
</table>
Key Points for Data Collection Techniques in the Lean Office

- Do not collect the micro details of the processes at this stage. Later, in Lean Office kaizen activities, those work elements will be analyzed.
- Focus on the processes the workers are doing, ensure they feel comfortable being honest in capturing the data. Many workers may be doing work outside of their sphere and have done so over the years.
- Make sure always to be supportive.
- Managers and supervisor set the example. Even though these processes are different, they should be included in as much as the data collection as possible.
- Ensure everyone understands the difference between processes, value streams and tasks (work elements).

Document Tagging

Why use it?
To accurately capture the work elements and steps for a process or value stream as it travels throughout the organization.

Who does it?
A core team will work to determine the process(es) or value stream to be tagged. Everyone connected to the process will contribute and document their time.

How long does it take?
Only seconds a day are needed to document work elements (tasks) for a process. Multiple document tags should be utilized to ensure overall process time accuracy.

What does it do?
This allows the Lean Office team to collect the necessary data on the various cycle times and value added work. Document tagging accomplishes the following:

- Continues to create awareness of organizational time
- Involves everyone connected to the process
- Once complete, analysis of the process will be based on actual times - not estimates
**How do you do it?**

1. Determine the process(es) or value stream on which the data will be collected.

2. Create the Document Tagging Worksheet in Word or Excel and label the various columns as shown in the following illustration:

   ![Document Tagging Worksheet](image)

<table>
<thead>
<tr>
<th>Process Name</th>
<th>Start Date In</th>
<th>Start Date Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tagging Log No.</td>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>Step</td>
<td>Name/Dept</td>
<td>Date</td>
</tr>
</tbody>
</table>

   **Notes:**
   - Delay/Queue Time is calculated from the Out Time of the previous step to the In Time of the current step. Day is 8 hours, 8:00a.m. - 5:00p.m. with 1 hr. Lunch.
   - Cycle Time is calculated by determining the total amount of time (in minutes) the work is being transformed into what is required by the downstream process. The rate of processing for work units.
   - Elapsed Time is the Delay/Queue Time plus the Cycle Time.
   - Value-Added Time is the Delay/Queue Time plus any Cycle Time that does not add value to the customer.
   - Non Value-Added Time will be the Delay/Queue Time plus any Cycle Time that does not add value to the customer.

3. Communicate to the group what information is required on the form (you may need to refresh the group with information from the Business Case for Lean section). Ensure the tasks are described as a verb-noun combination (e.g., match invoice to shipper, place folder in In Basket, etc.).

4. Distribute the form to the most upstream process in the value stream. This will be where the work originates. This is like placing a red dot or tag on a document and following it through the various processes until it reaches the most downstream process.

5. Collect all of the data. Do this for four or five times to ensure accuracy. The office workers are required to document the following columns:

   - **Step** – this should be sequential
   - **Name/Dept**
   - **Date**
   - **Time In**
   - **Date**
   - **Time Out**
   - **Task/Activity**
   - **Cycle Time**

6. Utilized data to establish best cycle time for the process(es). Once the document has reached the final process, then the following information should be analyzed:

   - **Delay/Queue Time**: In Time from previous Out Time
   - **Elapsed Time**: Delay/Queue Time from Previous Step + Cycle Time
   - **Value-Added Time**: Time to physically transform the work or document and provide value to the customer
   - **Non Value-Added Time**: Elapsed Time – Value-Added Time

7. Create Standard Work Chart. (See Standard Work)

8. Train to new standard and update any master process document. (See Office File System)
Document Tagging

**Key Points for Document Tagging in the Lean Office**

- Streams are being analyzed as once.
- Consider color coding documents or multiple values.
- Improvement.
- Improvements in a process utilize that as the foundation.
- Remember the 80/20 rule even though office.
- Stream map can be created with more accuracy.
- After tagging is completed, a process map or value
- thing is.
- Imposing a red dot or tag on a document as the document proceeds through the value stream.

---

**Process Name** Order Entry - Domestic Sales

**Start Date** 4/10

**Tagging Log No.** 1

<table>
<thead>
<tr>
<th>Step</th>
<th>Name/Number</th>
<th>Data Time</th>
<th>Date Time</th>
<th>In</th>
<th>Out</th>
<th>Delay/Qtr Time from Previous Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Judy/CIS</td>
<td>4/10 8:58a</td>
<td>4/10 10:10a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Judy/CIS</td>
<td>4/10 10:10a</td>
<td>4/10 10:16a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>John/CIS</td>
<td>4/10 10:16a</td>
<td>4/10 10:30a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>John/CIS</td>
<td>4/10 10:30a</td>
<td>4/10 10:35a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>John/CIS</td>
<td>4/10 10:35a</td>
<td>4/10 10:40a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>John/CIS</td>
<td>4/10 10:40a</td>
<td>4/10 10:46a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Judy/CIS</td>
<td>4/10 10:46a</td>
<td>4/10 10:52a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Judy/CIS</td>
<td>4/10 10:52a</td>
<td>4/10 10:58a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cycle Time** 10:50

**Elapsed Time** 10:50

**Value-Added Time** 10:50

**Non-Value Added Time** 10:50

---

**Diagram**

- Diagram showing process flow and time tracking.

---

**Notes**

- Details regarding process efficiency and improvement.

---

**Additional Information**

- References to further resources or guidelines for document tagging.

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Heijunka - Leveling

Why use it?
To balance the volume of work as well as the variety of work amongst the workers for a period of time. In a typically office, this process should take a day.

Who does it?
A cross-functional team is responsible for this task. The manager, supervisor or team/group leader will be responsible for loading the work in the heijunka box (leveling device).

How long does it take?
Once continuous flow has been achieved to the fullest extent possible, this system will tie all the work and processes together. Typically, small organizations with less than 500 employees can reach this point in less than a year. Larger organizations may take 1 to 2 years.

What does it do?
Heijunka or Leveling accomplishes the following:
- Balances work loads
- Provides a visual system for identifying if work is behind schedule
- Reduces queue times
- Assists to achieve continuous work flow
- Provides for a sophisticated paced withdrawal system

How do you do it?

1. Calculate takt time.

\[
\text{Takt time} = \frac{\text{Available daily work time}}{\text{Total daily volume require Unit}}
\]

2. Determine pitch for each value stream.

Pitch is a multiple of takt time that will allow you to create and maintain a consistent and practical work flow throughout the value stream. To calculate pitch, multiply the takt time by the number of work units to flow through the value stream in a manageable way.

\[
\text{Pitch} = \text{takt time} \times \text{practical number of work flow units (or documents)}
\]

Example 1:
Takt time: 20 minutes for customer order
Optimal number of customer orders to be moved throughout the value stream: 3

\[
\text{Pitch} = 20 \text{ minutes (takt time)} \times 3 \text{ work units (practical number of work flow units)} = 60 \text{ minute pitch.}
\]

This means every 60 minutes the group of 3 work units (customer orders) will be moved within the value stream.

Example 2:
Takt time: 30 minutes for quote response
Optimal number of quote responses to be moved throughout the value stream: 4

\[
\text{Pitch} = 30 \text{ minutes (takt time)} \times 4 \text{ quote response} = 120 \text{ minute pitch}
\]

The typical pitch increments for offices should be in multiples of 1 hour. (See Pitch)
Note: It is the goal of the Lean Office to move the smallest increment of work throughout the value stream. Research has shown that if the pitch increments are less than two hours, problems arise.

3. Create a work sequence.

The actual times must be established to move the work at the pitch increments. From the previous examples the pitch increment would be 2 hours.

8:00AM 10:00AM 1:00PM 3:00PM

4. Create a work sequence table.

A work sequence table is a matrix showing when value stream tasks are scheduled to be moved and the proper quantity. This table shows the whole story of the customer at a glance and should be posted at the heijunka box because it shows the sequence of the folders (or kanbans). This should be recalculated as customer requirements change.

5. Create a heijunka box.

The heijunka box or leveling device is utilized to level the work volumes by value streams (variety) over a specified period of time. The daily work is leveled with consideration of work load balancing, takt time and pitch with the most efficient use of people and resources. In the Lean Office, this is the only place to place the work units (or kanbans).

### Work Sequence Table

<table>
<thead>
<tr>
<th>Department</th>
<th>Sales - International</th>
<th>Date 10/15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8:00am</td>
<td>10:00am</td>
</tr>
<tr>
<td>Orders</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Quotes</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Credit Memos</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

6. Put the heijunka box into operation.

This will require a runner or someone responsible for picking up and delivering kanbans (i.e., work units) to the specified area(s) of the value stream.

### Key Points for Heijunka in the Lean Office

- Pitch increments for heijunka are recommended to be not less than 2 hours.
- The heijunka box or leveling device should be placed in a common area. The various value streams should be identified by color, location or by some other visual indicator.
- Each slot within the heijunka box should be labeled with the pitch times.
- The Work Sequence Table and Standard Work Chart should be posted at the heijunka location.
**Interruptions and Random Arrivals**

**Why use it?**

To diligently acknowledge when work interruptions occur and their reason.

**Who does it?**

All workers will document interruptions for up to 1 month.

**How long does it take?**

It will take only seconds per day to accomplish this task. Analysis of the interruptions would be done at the Lean Office project meeting.

**What does it do?**

Collecting the information regarding an interruption during the course of day brings attention to the actual value added time. Every time there is an interruption, it will cause some type of waste. An interruption is defined as a disruption to someone that is working on a task or an unscheduled event.

The documentation of these interruptions will accomplish the following:

- Create awareness of organizational time
- Improve productivity as workers may be reluctant to interrupt someone knowing it will be documented
- Identify how often interruptions occur, from both internal and external sources

**How do you do it?**

1. Communicate to the team that interruptions need to be documented.

   Explain the concept of Random Arrival. Interruptions are often referred to as “Random Arrivals” because you never know when an interruption will occur. This will initiate or cause a “Random Reaction” from the worker, once they have been interrupted. The employee will not have a process for this interruption, therefore, chaos will result. This chaos will result in waste of time and resources.

2. Create an Interruption and Random Arrival Log.

   The Interruption Log and Random Arrival Log will identify how much time is lost during the day. It will also identify the following:

   - How often interruptions stop work flow
   - How much time is consumed “or lost” when the interruption occurs
   - The worker who interrupted the work

**Interruption and Random Arrival Log**

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Start Time</th>
<th>End Time</th>
<th>Name</th>
<th>Discussion Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Random Arrival + Random Reaction = Chaos**

(External to Process) + (No Process) = Waste all around
Just-in-Time (JIT)

Why use it?
To establish a system of supplying work to the internal or external customer at precisely the right time, in the correct amounts and without error.

Who does it?
The Lean project team will determine the need for JIT. Additional Lean tools will be required to implement this concept. Eventually, everyone in the value stream will contribute to JIT.

How long does it take?
This is a long term philosophical and cultural change.

What does it do?
JIT will:
- Typically utilized new office layouts (U-shaped or some other) in support of the pull system
- Allow work to flow between processes with minimal or no queue time
- Improve communications between workers and processes
- Improve office productivity by reducing transport and motion wastes
- Improve quality at the source by identifying problems earlier

How do you do it?
1. Utilize Takt time to be used in conjunction with continuous flow tools.
2. Implement continuous flow tools to establish process links that will balance cycle times and work flow movement at a steady pace.
3. Utilize kanbans as part of the pull system and make everything visual.
4. Continue to monitor continuous flow tools and improve to JIT.

Key Points for JIT in the Lean Office
- This principle applies to internal as well as external customers.
- JIT is the over-riding theme for the Lean Office.
- JIT is the big picture and will not be attained overnight.
- JIT will assist in identifying problems early on.
- JIT will allow for a drastic reduction in queue times.
- Continue to tweak this system with improvement ideas from the workers.
- This principle applies to internal as well as external customers.
Kaizen Events

Why use it?
To learn and implement continuous improvement practices (i.e., Lean tools) to a targeted area within a specified time period.

Who does it?
The Lean project team will be responsible for planning and implementing the Lean tools. All employees should be doing their own kaizen daily.

How long does it take to do?
This is a long term philosophical and culture change. A Kaizen event may last 1-2 days, or may be broken up into manageable action items during a period of time.

What does it do?
"Kai" means to "take apart" and "zen" means to "make good". Kaizen is synonymous with continuous improvement.

"Take apart"  "Make good"

Kaizen events will accomplish the following:
- Quickly implement Lean tools to eliminate waste and non value-added work
- Train workers in Lean tools and applications
- Improve work flow
- Improve office productivity
- Reduce stress

How do you do it?
There are three phases to conducting a Kaizen Event:

Planning Phase
Workshop Phase
Follow-up Phase

<table>
<thead>
<tr>
<th>Phase</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning Phase</td>
<td>2 - 4 weeks</td>
</tr>
<tr>
<td>Kaizen Workshop</td>
<td>3 - 5 days</td>
</tr>
<tr>
<td>Follow-Up Phase</td>
<td>3 - 4 weeks</td>
</tr>
</tbody>
</table>

Planning Phase
1. Create a current and future state value stream or process map. Use this roadmap to identify problems or areas that waste can be eliminated. (See Value Stream Mapping)
2. Assemble the core Kaizen team. This should be made up by a cross-functional group of workers.
3. Complete a Team Charter with the Kaizen team. Ensure a project champion has been identified.

4. Obtain approval for the Team Charter from management. Solicit input and update Charter as necessary.

5. Communicate to all workers who will be affected by the event well before it begins. Make sure everyone understands how this kaizen activity will affect them and what may be expected from them. Post the Team Charter.

6. Create a Kaizen Milestone Worksheet to detail the improvement activities.

<table>
<thead>
<tr>
<th>Kaizen Milestone Worksheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Stream: Domestic Sales</td>
</tr>
<tr>
<td>Department: Customer Service</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific Event</th>
<th>Task</th>
<th>Duration</th>
<th>Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>5S</td>
<td>Sort</td>
<td>1 week</td>
<td>D.T.</td>
</tr>
</tbody>
</table>

Kaizen Workshop Phase

7. Train the team in Lean Office concepts.

8. Begin the workshop by applying 5S.

9. Observe the area and establish the current method of the ways things are being done. Gather accurate data on cycle times. Develop Standardized Work Combination Table and Chart. (See Standard Work)

10. Break the team into smaller groups to brainstorm ways to improve area(s) that are being worked on.

11. Implement immediate improvements and obtain results (or estimate results). Create action item list for tasks that could not be completed during the event.

Follow-up Phase

12. Report to management results obtained.

13. Continue to implement ideas. Create Standard Work once all processes have been improved.

14. Submit regular Status Reports to the champion to communicate project status.

15. Submit a final report when the Kaizen Event is completed.

Key Points for Kaizen Events in the Lean Office

- A proper Kaizen Event will have all three phases.
- The Planning Phase and Follow-Up Phase are just as important as the Workshop Phase.
- Kaizen Events can be focused on one area or process, or on multiple areas.
- Kaizen Events can be only successful if management is in support and there is cooperation from the workforce.
- Keep Kaizen Events manageable with focused projects. Expand as you experience success.
- Always keep 5S as an initial part of any Kaizen Event. Even if you plan to install an entire software program as a Kaizen Event, consider applying the 5S principles to everyone's desktop PC file system first.
Kanbans for Office Supplies

Why use it?
To create a pull system for office supplies that reduces waste of motion and transport. This will save the company money.

Who does it?
The Lean project team made up of representatives of the department or area served by the office supplies.

How long does it take?
Only a few hours for meetings and initial setup.

What does it do?
A kanban is a means of communicating via a signal to an upstream process precisely what is required at the time it is required. The Kanban System for Office Supplies will ensure the dollars allocated for supplies will be at the minimum required. This will help to eliminate the waste of inventory and transport. The kanban system is used to create a “pull” flow of material (in this case an office supply item) from an upstream process to a downstream process. The system utilizes a Lean tool known as a kanban to ensure a part, material, service or supply will be available when it is required, in the correct quantity.

How do you do it?
There are eight steps to creating and implementing the kanban system for supplies. They are:

1. Conduct the supplies survey.
2. Establish min/max levels.
3. Create the Supply Order Form.
4. Create the kanban cards.
5. Create standard work.
6. Conduct the training.
7. Implement the kanban system.
8. Maintain the standards.

1. Conduct the supplies survey.

The team or group will need to create a standard list of supplies from which to draw upon. Following is a sample Supply Survey Form.

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Quantity Used/Month</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper-Legal-white</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper-Legal-yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper-Mate-Flexgrip-Elite-blue</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Establish min/max levels.

Once the list and special requests have been collected, gain consensus on usage and establish min/max levels. Include the following:

- Type of standard supply (there are dozens of types of ball point pens, agree on a certain quantity - say 3 types)
- Weekly or monthly usage for the items
- Establish a minimum quantity to have on hand
- Establish a maximum quantity to have on hand

3. Create the Supply Order Form.

Once the team has established the type of supplies, min and max levels, then a Supply Order Form should be created. The quantity for each item to be ordered should be included because it will be the min/max difference.

4. Create the kanban cards.

There should be one kanban card identified as the Supply Reorder Kanban for each supply item. It should be laminated and color coded differentiating more than one supply ordering location (i.e. Staples, Office Depot, etc.). Kanban cards should be affixed to the minimum re-order quantity item.

The card should be an appropriate size to visually convey all the pertinent information such as:

- **Item Description**
- **Minimum Quantity on Hand**
- **Maximum Quantity on Hand**
- **Reorder Quantity (Max - Min)**
- **Supplier Name**
- **Item No**
- **Instructions** as to what to do with the kanban card.

The following is an example of a kanban card.

### Supply Reorder Kanban Card

<table>
<thead>
<tr>
<th>Item Description:</th>
<th>Name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reorder Quantity:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier Name:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Page No:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Place this card in the Kanban post**

5. Create standard work.

Once the system has been designed and the process for reordering determined, create a Standard Work Chart. This should be posted at the supply cabinet and used to train the workers. (See Standard Work)

6. Conduct the training.

The training for the department should be done prior to implementation to ensure integrity of the system. The training should include the following:

- A brief understanding on the purpose of kanbans
- Explanation on how the min/max levels were established and convey appreciation of everyone's input when the Supply Survey was conducted
- Explanation on how the system will work (distribute process flow charts)
- Explanation of the two types of kanbans, Supply Reorder and Special Order Kanbans
- A demonstration at the supply cabinet on where the kanbans are located and where they should be placed upon reaching the Reorder quantity
- Acknowledgment that this is in a trial and improvements ideas will be welcomed
- Acknowledge the key individuals within the team that contributed to this system
7. Implement the kanban system.

Once the training has been conducted, the Kanban System for Supplies will be ready for usage. This should occur simultaneously.

8. Maintain the standards.

After a month or two of usage, review the appropriate budget supply line item. Determine cost savings and congratulate the team and convey to management the success. Continue to take suggestions to how the process can be improved.

Include 5S as part of the process.

The benefits of kanbanning office supplies are:

- Ensure minimum inventory
- Create awareness on cost of suppliers
- Easy tool to implement and train
- Encourage teamwork
- Minimize transactions on ordering supplies
- Reduce stress

**Key Points for Kanbans for Office Supplies in the Lean Office**

- Ensure you have a process in place for special orders.
- Consider rotating responsibility for maintain system on a monthly or quarterly basis. This will allow more people to be involved in the process and contribute improvement ideas.
- Define a time to review min/max levels and adjust as necessary.
- Work with local vendors to keep on-site inventory at a minimum.
- Use this as a learning tool to further implement JIT techniques and kanbans for work documents.

**Why use it?**

To determine appropriate goals and measurements to verify the impact on improvement activities.

**Who does it?**

The Lean project team will establish goals and measurements consistent with strategic direction. Workers will contribute by working towards their individual and/or team goals.

**How long does it take?**

This task takes just a few minutes a day.

**What does it do?**

Lean Metrics will focus on measurements that will be the result of reducing and eliminating wastes. Metrics will also:

- Assess individual/team performance
- Establish a baseline metric on which to improve
- Allow targets to be established
- Improve office productivity by improving departmental or individual metric
How do you do it?

There are 7 steps in developing and implementing metrics for the Lean Office.

1. Review Team Charter for strategic direction.
2. Establish Lean metrics.
3. Obtain management buy-in for metrics.
4. Calculate baseline metrics.
5. Select targets.
6. Create visual aid(s).
7. Measure and post results.

1. Review Team Charter for strategic direction.

Review the Team Charter to ensure a thorough understanding of what needs to be measured in order to benefit the organization.

2. Establish Lean metrics.

Lean metrics are based on eliminating wastes. To find the metric that best fits your value stream, brainstorm with the team and gain consensus. Some examples of Lean Office metrics are:

- Reduction in invoicing errors (internal DPPMs)
- Reduction in customer complaints
- Increase in quote/order percentages
- Improvement in patient throughput times
- Improvement in project milestone completion percentages
- Improvement in customer retention rates
- Individual productivity improvements

Once established, Lean metrics must be something the group, department, or individual has control over.

3. Obtain management buy-in for metrics.

When the team has established the metrics, they should be reviewed by management. This is required because resources may need to be allocated if metrics are not currently good, or if there is a negative trend and problem solving must be used. Use the catchball process between the team and management to reach agreement on the metrics. In catchball, the team members and managers "toss" ideas and proposals back and forth refining them until consensus is reached.

4. Calculate baseline metrics.

Measure each metric to determine the starting point or baseline. Decide on the following:

- Who will be responsible for each metric
- How often measured
- The type of form it is to reported on; To whom the data will be reported
- The type of visual graph and where it will be displayed

The following worksheet can be utilized in organizing the proposed metrics.

**Metric Planning Worksheet**

1. Decide which metrics you will use, then enter them in the worksheet below.
2. Work from left to right for each metric. Do not skip any part!
3. Gain consensus on metrics from management.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Who is Responsible</th>
<th>How Often Measured</th>
<th>Form Used to Measure</th>
<th>To Whom to Report</th>
<th>Visual Display Location</th>
</tr>
</thead>
</table>


5. Select targets.

Don't forget to play catchball again to ensure targets are reasonable and attainable.

6. Create visual aid(s).

Measures that are not displayed visually will fail! Post measures where they can be easily viewed. Visually posting the metrics will create buy-in.

7. Measure and post results.

Create a schedule to ensure all departmental metrics are updated on a regular basis. Departmental metrics should be updated on a monthly, if not weekly basis. Individual or team metrics should be updated on a weekly, if not daily basis.

---

**Key Points for Lean Metrics in the Lean Office**

- Use catchball to ensure metrics and targets are in alignment with management.
- Metrics should be easily stratified, so that they provide a total measure for the entire value stream as well as specific measures for individual areas. The stratification will assist in driving continuous improvement efforts within the value stream.
- Create a process as part of the visual office for updating and reviewing the posted metrics.
- Consider using graphs, not just numbers. Graphs are easier to read and understand and communicates more effectively than words or numbers.
- Ensure recognition and rewards are in place for targets met.
- Remember, you can't manage what cannot be measured.
Lean Office Assessment

What does it do?

The Lean Office Assessment will accomplish the following:

- Gain a snapshot view of current office conditions that can be compared and monitored during the implementation of Lean practices
- Allow for an ability to prioritize Lean issues and provide a plan on which to base future resource allocation
- Provide a direction or Lean plan upon which to reduce costs

How do you do it?

The Lean Office Assessment involves three parts:

Part 1. Scoring
Part 2. Evaluation
Part 3. Planning and Executing

Part 1. Scoring

In this part of the Assessment, the scoring areas are used to allocate points for each of the 10 Lean building blocks being assessed. The scoring sheet uses a 0-4 point range to allocate up to four points for each guideline. The points are recorded in the appropriate box under the assessment guideline. General guidelines are:

- Under Comments/Suggestions define the parameters that are unique to your office arrangement, so they are documented when a follow-up assessment is conducted
- As a group, be honest with the score, as you are probably just beginning Lean Office Assessment
Areas referenced in this assessment can be an individual department, a specific value stream or the entire organization

People completing the scoring sheets will determine the appropriate points for each guideline that best describes the Lean Office practice being assessed.

The points are recorded in the appropriate box under the assessment guideline. The average points are computed for each Lean Office practice and recorded in the lower right corner of the score sheet.

If a concept or tool does not have relevancy to an area being scoring, then N/A (non-applicable) is written in the box.

Utilize the next 10 pages to conduct the Lean Office Assessment.

---

**Assessment Guidelines**

<table>
<thead>
<tr>
<th>Points</th>
<th>Goals and Measurements</th>
<th>Kaizen/Teaming</th>
<th>Systematic Improvement Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>100% of areas</td>
<td>Self-initiating</td>
<td>100% of areas</td>
</tr>
<tr>
<td>3</td>
<td>75% of areas</td>
<td>As needed</td>
<td>75% of areas</td>
</tr>
<tr>
<td>2</td>
<td>50% of areas</td>
<td>As required</td>
<td>50% of areas</td>
</tr>
<tr>
<td>1</td>
<td>25% of areas</td>
<td>A few tried</td>
<td>25% of areas</td>
</tr>
<tr>
<td>0</td>
<td>0% of areas</td>
<td>None tried</td>
<td>0% of areas</td>
</tr>
</tbody>
</table>

**Score**

Average Points (Total Points / Total # of Guidelines Scored): 6 / 3 = 2

---

**Assessment Guidelines for 5S**

**Points** | **Set in Order** | **Shine** | **Standardize** | **Sustain** | **Score** | **Average Points** (Total Points / Total # of Guidelines Scored)
---|-----------------|-----------|-----------------|-------------|-----------|------------------------|
4 | 100% of areas | 100% of areas | 100% of areas | 100% of areas | 0% of areas | 0% of areas |
3 | 75% of areas | 75% of areas | 75% of areas | 75% of areas | 0% of areas | 0% of areas |
2 | 50% of areas | 50% of areas | 50% of areas | 50% of areas | 0% of areas | 0% of areas |
1 | 25% of areas | 25% of areas | 25% of areas | 25% of areas | 0% of areas | 0% of areas |
0 | 0% of areas | 0% of areas | 0% of areas | 0% of areas | 0% of areas | 0% of areas |
### Assessment Guidelines for Quality

<table>
<thead>
<tr>
<th>Points</th>
<th>Internal DPPMs</th>
<th>Mistake Proofing</th>
<th>Formal Problem Solving</th>
<th>Internal Audits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0</td>
<td>100% of areas</td>
<td>100% of areas</td>
<td>100% of areas</td>
</tr>
<tr>
<td>3</td>
<td>&lt;50</td>
<td>75% of areas</td>
<td>75% of areas</td>
<td>75% of areas</td>
</tr>
<tr>
<td>2</td>
<td>&lt;50, but &lt;250</td>
<td>50% of areas</td>
<td>50% of areas</td>
<td>50% of areas</td>
</tr>
<tr>
<td>1</td>
<td>&gt;250, but &lt;1000</td>
<td>25% of areas</td>
<td>25% of areas</td>
<td>25% of areas</td>
</tr>
<tr>
<td>0</td>
<td>&gt;1000</td>
<td>0% of areas</td>
<td>0% of areas</td>
<td>0% of areas</td>
</tr>
</tbody>
</table>

**Average Points** (Total Points / Total # of Guidelines Scored): 

---

### World Class 4.0 Tips
- Internal errors are being measured and are posted in a common area.
- Mistake Proofing is understood as a viable process to prevent errors.
- Preventional tools such as problem-solving are a way of life.
- Internal audits are performed on critical processes on a regular basis.

### Assessment Guidelines for Work Areas

<table>
<thead>
<tr>
<th>Points</th>
<th>Well Defined Physical Area(s)</th>
<th>Defined Value Streams</th>
<th>Technology Utilized</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>100% of areas</td>
<td>100% of areas</td>
<td>100% of areas</td>
</tr>
<tr>
<td>3</td>
<td>75% of areas</td>
<td>75% of areas</td>
<td>75% of areas</td>
</tr>
<tr>
<td>2</td>
<td>50% of areas</td>
<td>50% of areas</td>
<td>50% of areas</td>
</tr>
<tr>
<td>1</td>
<td>25% of areas</td>
<td>25% of areas</td>
<td>25% of areas</td>
</tr>
<tr>
<td>0</td>
<td>0% of areas</td>
<td>0% of areas</td>
<td>0% of areas</td>
</tr>
</tbody>
</table>

**Average Points** (Total Points / Total # of Guidelines Scored): 

---

### World Class 4.0 Tips
- Physical work areas have been arranged to maximize people, equipment, and space efficiency.
- Value streams have been defined and are posted in the common area.
- Technology is continually reviewed and utilized to its fullest.
### Assessment Guidelines for Visual Controls

<table>
<thead>
<tr>
<th>Points</th>
<th>Signal Systems</th>
<th>Visual Displays</th>
<th>Clear Action Procedures</th>
<th>Up-to-Date Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>100% of areas</td>
<td>100% of areas</td>
<td>100% of areas</td>
<td>100% of areas</td>
</tr>
<tr>
<td>3</td>
<td>75% of areas</td>
<td>75% of areas</td>
<td>75% of areas</td>
<td>75% of areas</td>
</tr>
<tr>
<td>2</td>
<td>50% of areas</td>
<td>50% of areas</td>
<td>50% of areas</td>
<td>50% of areas</td>
</tr>
<tr>
<td>1</td>
<td>25% of areas</td>
<td>25% of areas</td>
<td>25% of areas</td>
<td>25% of areas</td>
</tr>
<tr>
<td>0</td>
<td>0% of areas</td>
<td>0% of areas</td>
<td>0% of areas</td>
<td>0% of areas</td>
</tr>
</tbody>
</table>

**Average Points (Total Points / Total # of Guidelines Scored):**

### Assessment Guidelines for Standard Work

<table>
<thead>
<tr>
<th>Points</th>
<th>Takt Time</th>
<th>Work Sequence Charts</th>
<th>Documented Work Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>100% of work</td>
<td>100% of areas</td>
<td>100% of areas</td>
</tr>
<tr>
<td>3</td>
<td>75% of work</td>
<td>75% of areas</td>
<td>75% of areas</td>
</tr>
<tr>
<td>2</td>
<td>50% of work</td>
<td>50% of areas</td>
<td>50% of areas</td>
</tr>
<tr>
<td>1</td>
<td>25% of work</td>
<td>25% of areas</td>
<td>25% of areas</td>
</tr>
<tr>
<td>0</td>
<td>0% of work</td>
<td>0% of areas</td>
<td>0% of areas</td>
</tr>
</tbody>
</table>

**Average Points (Total Points / Total # of Guidelines Scored):**

### World Class 4.0 Tips

**Utilization of lights, e-mail alerts, flags, etc., allow for immediate identification of problems**

**Color coding, markings, labels and signs are used for identifying working conditions**

**There are clear action procedures established**

**Metrics are posted and are up to date**

**Takt time is used to determine resource allocation to meet office work loads**

**Standard Work (or Sequence) Charts are used to ensure work critical processes are completed without variation**

**Additional work procedures are well-documented to ensure all processes are completed without variation**
### Assessment Guidelines for Continuous Flow

<table>
<thead>
<tr>
<th>Points</th>
<th>Processed Linked Through Value Stream Analysis</th>
<th>Optimal Work Flow</th>
<th>Time in Queue</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>100% of areas</td>
<td>100% of areas</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>75% of areas</td>
<td>75% of areas</td>
<td>Minutes</td>
</tr>
<tr>
<td>2</td>
<td>50% of areas</td>
<td>50% of areas</td>
<td>Hours</td>
</tr>
<tr>
<td>1</td>
<td>25% of areas</td>
<td>25% of areas</td>
<td>Days</td>
</tr>
<tr>
<td>0</td>
<td>0% of areas</td>
<td>0% of areas</td>
<td>Weeks</td>
</tr>
</tbody>
</table>

**Average Points** (Total Points / Total # of Guidelines Scored):

---

### Assessment Guidelines for Pull Systems

<table>
<thead>
<tr>
<th>Points</th>
<th>Kanbans for Office Supplies</th>
<th>FIFO Lanes</th>
<th>In-Process Supermarkets</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>100% of office supplies</td>
<td>100% of required areas</td>
<td>100% of required areas</td>
</tr>
<tr>
<td>3</td>
<td>75% of office supplies</td>
<td>75% of required areas</td>
<td>75% of required areas</td>
</tr>
<tr>
<td>2</td>
<td>50% of office supplies</td>
<td>50% of required areas</td>
<td>50% of required areas</td>
</tr>
<tr>
<td>1</td>
<td>25% of office supplies</td>
<td>25% of required areas</td>
<td>25% of required areas</td>
</tr>
<tr>
<td>0</td>
<td>0% of office supplies</td>
<td>0% of required areas</td>
<td>0% of required areas</td>
</tr>
</tbody>
</table>

**Average Points** (Total Points / Total # of Guidelines Scored):

---

**World Class 4.0 Tips**

**Continuous Flow**

- All critical processes are linked through value (or process) mapping to ensure waste is being eliminated.
- Work unit sizes have been defined and are being moved in a smooth and orderly fashion.
- Time in queue is continually being reduced between processes to ensure just-in-time work is achieved.

---

**Pull Systems**

- Office supplies are kanbanned to reduce transport and motion wastes, along with saving money for the organization.
- FIFO lanes are established to ensure an upstream process does not produce a work unit or service until the downstream process is ready.
- In-process supermarkets ensure the customer's request is met, each and every time, through use of kanbans.
### Assessment Guidelines for Leveling

<table>
<thead>
<tr>
<th>Points</th>
<th>Work Load Balancing</th>
<th>Visual Work Board</th>
<th>Flexible Work Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Scheduled by the hour</td>
<td>100% of areas</td>
<td>Full implemented</td>
</tr>
<tr>
<td>3</td>
<td>Scheduled by the day</td>
<td>75% of areas</td>
<td>All critical processes</td>
</tr>
<tr>
<td>2</td>
<td>Scheduled by the week</td>
<td>50% of areas</td>
<td>Most critical processes</td>
</tr>
<tr>
<td>1</td>
<td>Scheduled by the month</td>
<td>25% of areas</td>
<td>Some processes</td>
</tr>
<tr>
<td>0</td>
<td>No schedule</td>
<td>0% of areas</td>
<td>Few processes</td>
</tr>
</tbody>
</table>

**Average Points (Total Points / Total # of Guidelines Scored):**

---

### World Class 4.0 Tips

- **Work Load Balancing:**
  - Work loads have been analyzed and work elements re-distributed as appropriate to ensure smooth work flow throughout the day.

- **Visual Work Board:**
  - Visual work boards or a heijunka box is utilized to visually see the work loads and how it is being completed throughout the day and are utilized.

- **Cross-trained employees are key to leveling. Workers assist others when demand changes.**

---

### Assessment Guidelines for Continuous Improvement

<table>
<thead>
<tr>
<th>Points</th>
<th>Goals and Measurements</th>
<th>Kaizen/Teaming</th>
<th>Systematic Improvement Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>100% of areas</td>
<td>Self-initiating</td>
<td>100% of areas</td>
</tr>
<tr>
<td>3</td>
<td>75% of areas</td>
<td>As needed</td>
<td>75% of areas</td>
</tr>
<tr>
<td>2</td>
<td>50% of areas</td>
<td>As required</td>
<td>50% of areas</td>
</tr>
<tr>
<td>1</td>
<td>25% of areas</td>
<td>A few tried</td>
<td>25% of areas</td>
</tr>
<tr>
<td>0</td>
<td>0% of areas</td>
<td>None tried</td>
<td>0% of areas</td>
</tr>
</tbody>
</table>

**Average Points (Total Points / Total # of Guidelines Scored):**

---

### World Class 4.0 Tips

- **Metrics have been established and employees contribute new ideas regularly.**

- **Kaizen/Teaming is originating from all levels.**

- **Cross-functional teaming is used often.**

- **A systematic improvement process exists to ensure all ideas are channeled correctly.**
Part 2. Evaluation

There are three steps to this part:

Step 1. Complete a Lean Office Assessment Summary Form.

Once you have completed all scoring, you should have an average number of points for each of the Lean Office guideline categories.

Transfer the Average Point Score to the Summary Score Sheet. If you have completed a previous assessment, you will have your previous score as a benchmark when the current score is recorded.

<table>
<thead>
<tr>
<th>Lean Office Category</th>
<th>Previous Score</th>
<th>Current Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SS</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>2 Quality</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>3 Work Areas</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>4 Visual Controls</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>5 Standard Work</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>6 Continuous Flow</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>7 Pull Systems</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>8 Leveling</td>
<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>9 Continuous Improve</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>10 Training</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Total Points</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>Assessment Score</td>
<td>1.7</td>
<td>2.3</td>
</tr>
<tr>
<td>(total points / 10)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Step 2. Plot scores on the Lean Office Radar Chart.

Lean Office Radar Chart

<table>
<thead>
<tr>
<th>Department/Unit</th>
<th>Date</th>
<th>Assessor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continuous Improvement

Training

Pull Systems

Quality

Work Areas

Visual Controls

Continuous Flow

Standard Work

5S

Draw line connecting the point values for each Lean value on the chart for a visual representation of the organization's overall Lean Office profile.

Step 3. Find your place in the Lean Office Rating Scale.

Use the assessment average score and identify the ranking in the Lean Office Rating Scale.

Lean Office Rating Scale

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
</table>
| 3.6 - 4.0 | World-class status
Results are being achieved at all levels.
Remember, competition is not stagnant, there is a need to drive continuous improvement efforts. |
| 2.6 - 3.5 | Results being felt at all levels
The Lean office is now becoming part of the administrative culture. World-class performance is within sight. |
| 1.6 - 2.5 | Change is becoming visible
There is a need to leverage momentum to risk the sliding back of old habits. |
| 0.6 - 1.5 | Beginning the Lean office journey
Accelerating a Lean focus will drive change. |
| 0.0 - 0.5 | No Lean commitment
Adoption and commitment are necessary to remain competitive and stay in business! |
Part 3. Planning and Executing

Now that you know how the organization compares to Lean Office World Class, utilize the Lean Office Guide to improve.

### Lean Office Guide to Improve

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6 - 4.0</td>
<td>World-class status</td>
<td>Continue to benchmark. Host Lean Office events. Speak and share results. Ensure audits are performed.</td>
</tr>
<tr>
<td>2.6 - 3.5</td>
<td>Results being felt at all levels</td>
<td>Continue to benchmark. Ensure reward and recognition are appropriate. Continue to focus on cross-training. Work on the visual office. Ensure standard work is a priority.</td>
</tr>
<tr>
<td>1.6 - 2.5</td>
<td>Change is becoming visible</td>
<td>Continue to benchmark. Attend seminars and workshops - preferably those that offer Lean Office tours. Read articles, obtain videos, read books on how Lean can be further advanced into the organization.</td>
</tr>
<tr>
<td>0.6 - 1.5</td>
<td>Beginning the Lean Office journey</td>
<td>Benchmark immediately. Ensure teams go out and see other world-class office practices. Read Lean Office books and articles - in all industry types. 5S must be a major thrust. Ensure teams are chartered. Get employees involved.</td>
</tr>
<tr>
<td>0.0 - 0.5</td>
<td>No Lean commitment</td>
<td>Do something! Benchmark, read, attend workshops. Initiate a plan to do 5S today! Create the business case for the Lean Office. Do something!</td>
</tr>
</tbody>
</table>

### Key Points for Lean Office Assessment in the Lean Office

- Use the assessment as a benchmark to be compared against as Lean tools are implemented.
- Do not get caught up on the score as much as which Lean Office tools can be utilized to improve the organization.
- Gain consensus on the assessment as a team, for it will be the team effort that will allow change to occur.
- Post the assessment score in a common area, along with the plan for improvement and any value stream maps that have been created.
- Create a timeline to conduct the assessment every 6 months.
Lean Reporting and Communications

Why use it?
To ensure teams utilize effective planning and reporting tools to adequately utilize resources. The main focus is people’s time.

Who does it?
1. The team leader is responsible for distribution of the various transportation tools.

2. The Lean Office project team is responsible for contributing and following the meeting procedures.

How long will it take?
The Team Charter takes about 1-2 hours to prepare. The Meeting Information Form takes about 15 minutes to prepare. The Status Report takes about 5 minutes to prepare.

What does it do?
Lean Reporting:
- Standardizes communications
- Ensures strategic alignment
- Ensures team discipline
- Reduces team meetings
- Reduces stress

How do you do it?
There are three forms required to effectively communicate in the Lean Office environment.

They are:
1. the Team Charter
2. the Meeting Information Form
3. the Status Report

1. Team Charter
   a. The Team Charter is to be completed by the core Lean Office project team assigned to the area requiring improvement. It must be approved by the team champion.

   b. Completing the Team Charter is the first most important step in any Lean Office project. Ensure everyone is on the same page in reference to the team’s mission and deliverable.

   c. It is a living document and will require updating as conditions change. It should be posted in a common area.

   d. The Team Charter will list specific deliverables.

   e. The Lean Office project team should gain consensus on the team charter and be aware of “scope creep.”

   f. The champion must ensure proper resources are committed. The champion usually does not attend the meetings, other than the kick-off, but is available to remove roadblocks, break down departmental barriers, and provide any other administrative support.

   g. The team leader is responsible for the day-to-day or week-to-week activities. He or she will schedule meetings and inform the champion of progress via Status Reports.
2. Meeting Information Form

The Meeting Information Form provides the team with a structured approach to effective meetings, including detailed agendas and action items. The importance of this cannot be underestimated.

a. Everyone at the meeting is aware of the agenda, times, and topics.

b. Action times/due dates are assigned and reviewed. Every attempt is made to adhere to these.

c. Project milestones are met to ensure Lean Office completion.

### Logistics
Meeting Title: January Monthly Employee Meeting  
Date: January 12th  
Time: 1:00pm to 2:30pm  
Place: Learning Center  
Purpose: Review Monthly Measures and Introduce Lean Office plans

### Distribution
<table>
<thead>
<tr>
<th>Participants</th>
<th>Roles</th>
<th>FYI Copies</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Wells</td>
<td>President</td>
<td>All departmental heads - ensure all employees receive copy of agenda</td>
<td>Distribute information</td>
</tr>
<tr>
<td>Dave Bergman</td>
<td>Customer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Susan Turner</td>
<td>Marketing Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gerry Solaman</td>
<td>Training Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chris Perry</td>
<td>Customer Svc. Manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Item</th>
<th>Who</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00pm</td>
<td>Year end goals achievements, new goals, admin opportunities to excel</td>
<td>John</td>
<td>30m</td>
</tr>
<tr>
<td>1:30pm</td>
<td>Customer expectations, growth opportunities</td>
<td>Susan</td>
<td>20m</td>
</tr>
<tr>
<td>1:50pm</td>
<td>Newly formed partnership; opportunity for both</td>
<td>Dave</td>
<td>10m</td>
</tr>
<tr>
<td>2:00pm</td>
<td>Pilot project for Lean Office</td>
<td>Chris</td>
<td>10m</td>
</tr>
<tr>
<td>2:10pm</td>
<td>Lean Office training schedule, handout</td>
<td>Gerry</td>
<td>5m</td>
</tr>
<tr>
<td>2:15pm</td>
<td>The Goal Card example and questions</td>
<td>John</td>
<td>15m</td>
</tr>
</tbody>
</table>

LAN Location/Revision #: **Company Confidential**
3. Status Report

The Status Report is directed to the champion to communicate the progress to date.

a. The Status Report should be created and forwarded by the team leader to the champion either every week or every other week.

b. The Status Report must include potential resolutions for any problems or concerns.

c. The Status Report should not take the place of one-on-one communications when the team champion must intervene on behalf of the team.

---

**Status Report**

<table>
<thead>
<tr>
<th>Team Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
</tr>
<tr>
<td>Status</td>
</tr>
<tr>
<td>Are you on schedule?</td>
</tr>
<tr>
<td>Accomplishments</td>
</tr>
<tr>
<td>What has the team accomplished to date?</td>
</tr>
<tr>
<td>Concerns (Issues)</td>
</tr>
<tr>
<td>What are the problems that have arisen that has made the timeline change?</td>
</tr>
<tr>
<td>Plans (How to Resolve Issues)</td>
</tr>
<tr>
<td>The plan the team has to address the issues that cause the timeline to change and also the team's approach to get back on schedule.</td>
</tr>
</tbody>
</table>

---

**Key Points for Lean Reporting and Communications in the Lean Office**

- It is often proved helpful to have the Team Charter semi-completed prior to the first Lean Office team meeting. This may save some time in presenting the core information.
- The charter is a living document and should reflect the teams input as it is periodically reviewed and updated.
- The team leader should always prepare an agenda for a meeting. If a kaizen event is going to consume more than a few hours, then the team should detail the specific activities as much as possible.
- The Meeting Information Form can be quickly completed and distributed to all appropriate people. It is a clear and concise document that communicates what is going on and the individual assignments of the team members.
- As action items are reviewed, and if some have not been completed on schedule, determine the reason and work with the team to assist with the particular item.
- Keep all Lean Office projects initially to less than 90 days. Reward the team to further promote Lean Office initiatives.
Office File System

Why use it?

To ensure work is organized and processed correctly with no, or minimal queue time; thus becoming a basis for improvement activities.

Who does it?

The Lean project team will work to create the file system with input from all employees. Everyone will eventually be required to follow the new office file system standards.

How long will it take?

This will require regular 1 hour meetings a week for 1-2 months, then on-going for maintenance.

What does it do?

The file or kanban system will consist of the creation and the maintaining three types of folders, the system folder, the process folder, and the reference folder. Each of these folders will contain the actual process work or reference required to complete a customer demand.

How do you do it?

There is a 3 step procedure for this section. The steps are:

1. Create the system folder.
2. Create the process folder or kanban.
3. Establish a holding point.

This is the most time consuming section in entire Lean Office Pocket Guide.

1. Create the system folder.

The system folder will be the “keeper” of all pertinent information about the processes or value streams. It is the organized listing (i.e., processes) of the work for the entire Lean Office system. The system folder will:

- Centralize all process information
- Create a visual aid for document control
- Assist in obtaining predictable output
- Support continuous improvement
- Allow for process knowledge to be further “owned” by the organization
A. Outside of system folder

The outside of the system folder will have the folder priority rating displayed and the status of the folder.

The folder priority rating will communicate the color codes for each type of the processes, from the Critical 1,2,3 through the Non-Critical to Reference.

**Critical** is defined as those processes that directly impact the customer and/or have a direct financial impact on the organization (e.g., entering customer order, invoicing, providing service at point of sale, etc.).

**Non-critical** is defined as those processes that are necessary but do not have an immediate impact on the customer or financial impact on the organization (e.g., filling out a performance appraisal, conducting an interview, etc.).

**Reference** information is defined as information required on an as-needed basis (e.g., auditing manuals, standard operating procedures, environmental regulations, etc.)

B. Inside of system folder

Inside of the system folder will be the “brains” of the entire Lean Office. It will contain the Process Master Document, the Process Review Schedule, the Process Training Matrix, and the Process Flow Validation Skills Assessment - in that order. Other documents may be included to support the overall concept of the system folder.

![System Folder with Priority Codes]

**Priority Codes**
- Red: daily (critical process)
- Blue: daily (non-critical process)
- White: system folder
- Green: reference

**Process Master Document**

Just as with the office supply order form (listing all the various supplies in section Kanbans for Office Supplies) the various processes (i.e., supplies) need to be identified before the kanban card or process folder for each is created. This will be accomplished by the creation of the Process Master Document. The Process Master Document contains a listing of all various processes required to meet a customer demand.

The Process Master Document should be maintained and secured by the departmental manager.
There are six parts to the Process Master Document:

a. Prioritization and classification of processes
b. Identification of process owners
c. Determination of color codes
d. Creation of process flow charts
e. Validation of the processes
f. Training schedule to the processes

2. Create the process folder or kanban.

All data collected from Step 1, Creating the system folder, will be placed in separate folders - one for each process. These will be referred to as process folders or work kanban or simply kanban. There are 3 parts to the process folder:

a. Flowchart or Standard Work Chart
b. Training required
c. Volume capture is to identify the cycle time that process requires (See following Value-Added Time Reporting Log)

The process folder is located at point-of-use. It is the working documentation required to ensure the process steps are done in a consistent manner, to the standards set forth by the owner of that process. The information contained in the folder will, in and of itself, contribute dramatically to reducing work variation, thereby improving work quality.

The process folder will be the "keeper" of all working knowledge required to complete that process. It will also contain the actual work required by the customer. Each process listed in the Process Master Document must have a process folder identified with it.

The process folder will:

- Detail all tasks necessary to complete the process
- Make the process a visual tool to ensure consistent work is done
- Support continuous improvement
- Allow process knowledge to be further 'owned' by the organization

A. Outside of process folder

The outside of the process folder will be labeled in two locations. A label placed on the front of the folder and the other on the tab location identifying the process.

This will be used as a visual for quick retrieval of the folder and contribute towards eliminating the waste of waiting.

A legend representing the status of the process folder should also be displayed on the outside of the folder as a visual aid. A process folder can be in an active or passive state.
A active state folder would contain work that needs to be completed and should reside in a horizontal position.

**Active State**

A passive state folder would contain work that has already been completed and should reside in a vertical position.

**Passive State**

The following additional information should be standard on every folder:

- **Process Name:** the name of the process as it is listed on the Process Master Document.
- **Supplier:** the most upstream process supplying work requirements for the department or value stream.
- **Customer:** the most downstream name of the department, process or company requesting work to be completed.
- **Frequency:** the average number of times the process will need to be completed each day, week or month. This will be preliminary and flexible to change.
- **Value Added Time:** the total cycle time to complete the process.
- **Owner:** the name of the individual to whom ownership was established.
- **Review Date:** the review date of the process.

This information should be affixed to each folder. Again, the suggestion will be to create the first few Critical processes and get them started, and then gradually add more as experience is gained.

**B. Inside of process folder**

The process folder will contain the Value Added Time Reporting Log, the Process Flowchart, and the work that must be completed. Remember, the folder is a 'kanban'. It is a signal to do work. Later in this chapter you will determine how much work should be placed in each folder.

The Process Flowchart should be placed as the first document within the process folder. It is recommended the flowchart be resided in a flimsy for ease of retrieval so improvement ideas can be documented.
C. Value Added Time Reporting Log

The Value Added Time Reporting log will be utilized to track the process cycle times. This will be ongoing through the Lean Office. The log will be forwarded to the manager monthly for further analysis and record keeping. It will provide:

- An accurate, data driven departmental performance indicator
- An up-to-date work load analysis
- A way to look for continuous improvements ideas
- Data to justify assistance when work volume increases

The Log should be filled out every time that process is started and ended, along with who completed the work. The Log should be placed on the inside front of the process folder.

Note: As you begin to create and collect information about the processes, immediately begin to place the process folders in this common device at a specific location. All the processes cannot be done at once, but whatever ones are initially targeted, ensure they are placed in a common area.

D. Process Flowchart

A process flowchart is a visual representation of a sequence of activities or tasks to complete a process. It can be represented by using icons. (See Problem Solving)

Note: Detailed work instructions can also suffice for this step.

3. Establish a holding point.

It is important to create a physical device and place the organizational knowledge in a common location.
Once the Office File System has been initiated, then Standard Work, along with Work Load Balancing should be utilized to level the work through Heijunka. (See Standard Work and Work Load Balancing)

Key Points for Office File System in the Lean Office

- Start with a good representation of the processes; you will not be able to work on all of them at once.
- Gain consensus on the critical processes, as they should be the first process folders created.
- Keep the color-code simple at first. Do not try to complicate this initially or you can lose enthusiasm.
- Always work to communicate the need in how this system will assist in reducing stress in the office by documenting good work procedures.
- Continue to recognize the team in their efforts.
- The folder system (and leveling) is critical in obtaining continuous flow; take it one step at a time.

Office Layout: U-shaped

Why use it?

To create a self-contained, well-occupied space that optimizes the flow of work and data.

Who does it?

The Lean project team will work with everyone involved to gather information that will be utilized in any office rearrangement.

How long will it take?

This should take 2-4 hours to plan. Depending on the degree of rearrangement, it can take an hour to a few days for the physical re-arrangement. Try to be flexible. Conditions may change and the arrangement may need to be modified after a trial period.

What does it do?

A new office layout can accomplish many things, such as:

- Ensures the most efficient layout for the worker and work flow
- Ensures reduction or elimination of excess travel and motion wastes
- Allows for work force flexibility via sharing of work when necessary
- Provides for the foundation on small lot work flow
Can be U-shaped, S-shaped, or L-shaped, depending on each administrative area
Reinforces team work
Reduces stress
Increases organizational process knowledge, versus individual process knowledge

How do you do it?

1. Draw a layout of current office furniture (i.e., desks, cabinets, common areas such as faxes, printers, mail rooms, etc.).

2. Review the value stream to determine where queues reside.

3. Brainstorm with the team and apply Lean tools. Determine more efficient office layout.

4. Create Standard Work Chart(s) for new arrangement. Cycle times for the processes must be analyzed to assure proper work load balancing within the newly defined area.

5. Plan how non valued-added functions can be delivered and pulled from the work area. For example, if someone is constantly leaving the area to fax a quote which prevents him or her from entering a customer order, then consideration should be to allocating a resource to completing the fax. (See Runner)

6. Plan to review new cell arrangement within 2 weeks after the initial move. Be open to suggestions and be flexible enough to make changes. Update Standard Work Chart.

Note: When creating the new office layout remember to keep in mind various takt times and value stream requirements. Do not create an office layout that does not accommodate these.

Key Points for Office Layout: U-shaped in the Lean Office

- Acknowledge to the workers, that even though they may be giving up some privacy, they are gaining ease and efficiency.
- Use cross-training immediately to further assist the new office layout.
- Keep continuous flow concept as a focus when designing a new office layout.
- Utilize FIFO lanes and In-process supermarkets to assist in the layout.
- Do not create a layout that cannot be changed initially. If after six months it is working, then permanent resources can be allocated.
- Continually focus to eliminate waste of travel and motion.
- Address employees concerns privately when new arrangements (change) may be difficult for them.
- Establish before and after metrics to document work flow improvements.
Pitch

Why use it?
To create a time element allowing a consistent and smooth flow of work throughout the value stream. It can be a multiple of takt time.

Who does it?
The Lean project team will collect data (see Data Collection Techniques) to obtain takt times and work to determine reasonable pitch.

How long will it take?
Plan on spending 1-2 hours to plan and 4 - 8 hours to create the physical device to hold the work.

What does it do?
Takt time for offices typically will be too small of a unit of time to flow the work; therefore, pitch needs to be established to determine the optimal work flow through the value stream. Pitch is the adjusted takt time (or multiple of) when takt time is too short. Pitch will:

- Set the optimal work flow size and frequency of delivery
- Set the pace for movement of work and assist continuous flow concepts
- Allow for immediate attention to problems
- Reduce queue times

Note: Each value stream will require its separate pitch. When multiple pitches and value streams are integrated into the department, Leveling should be used with a Heijunka box. (See Leveling)

Pitch increments must be monitored to ensure they are being met. If a problem arises a system should be in place to address why the work is behind schedule.
2. Optimal number of customer orders to be moved = 20.

3. Pitch = 6 minutes x 20 units = 120 minute pitch.

This means every 2 hours (120 minutes) the packet of 20 units (orders) will be moved to the next process within the value stream.

---

**Key Points for Pitch in the Lean Office**

- Pitch increments should be created with a strong visual aid to assist in identifying problems immediately (or within 1 pitch increment).
- Keep pitch increments to not less than 2 hours.
- Make pitch visible to all value stream workers.
- Identify problem resolution procedures if pitch increments cannot be met.
- Adjust pitch increments as customer demand changes or other business issues are prevalent.
- Create a Standard Work Chart for the pitch process.

---

**Predictable Output**

**Why use it?**

To create the expectation of a process to produce a good or service with no variation (waste).

**Who does it?**

The Lean Office project team will create an awareness on the importance of predictable output. It will be for everyone to work with the Lean tools to obtain predictable output.

**How long will it take?**

This will take 1-2 hours to plan and approximately 10-15 minutes to explain to everyone.

**What does it do?**

Work with repeatable results, based on a consistent process, yields customer satisfaction. That is what predictable output is about. Stated simply, this is the ability to complete work in a way that ensures you satisfy customer's needs each and every time without variation. This may be either an internal customer (the next person or department in the office that work is passed on to) or the external customer (the customer who ultimately pays for the product or service). Promotions, transfers, vacation and retirement can compromise predictable output if work standards are not utilized properly.
Predictable output is in our daily lives. The following are processes in society we expect predictable output:

- A 911 call
- Traffic lights
- Computer usage
- Turning on the television
- Turning on the lights
- The car starting

**How do you do it?**

1. Create examples of predictable output all employees can relate to.

2. Determine internal errors or occurrences when predictable outcome was not achieved.

3. Communicate to employees (1) and (2). Continually reinforce the concepts of predictable output by:
   - Continually providing relevant examples everyone can relate to
   - Provide work related examples as often as possible
   - Utilize Standard Work to reinforce predictable output


The Predictable Output Survey will provide further understanding why the Lean Office is needed. This can be completed by the manager and shared with the team, or it can be completed as a team exercise for all to understand this basic premise of Lean, predictable output.

If you answer "NO" to any of these, then the Lean Office is needed. Use the Predictable Output Survey as confirmation for Lean Office initiatives.

Predictable output cannot be achieved without standardizing processes. Each employee must learn to follow a standardized process that results in predictable output to ensure the quality of work is consistent among employees, each and every time without variation. Allowing several different approaches to getting the job done will only create chaos and unpredictability. By developing a best practice for each activity, it will be easier to replicate good performance and build upon those with continuous improvement initiatives.
Key Points for Predictable Output in the Lean Office

- Predictable output cannot be achieved without a thorough understanding of its importance to all workers.
- Predictable output is the foundation for the Lean Office.
- Create visual aides to relate predictable output to office work.
- Remember to utilize Standard Work in establishing predictable output for processes and value stream requirements.
- Continually focus on the predictable output for the process, and not on the person.
- Use the survey as another tool to communicate the need for Lean in the office, similar to the Business Case for Lean.

Problem Solving

Why use it?
To create a common language and methodology as a systematic approach to correcting a deviation from a norm.

Who does it?
All levels of the organization should participate.

How long will it take?
One hour to several weeks with multiple sessions - depending on complexity of the problem.

What does it do?
- Gives the Lean team an approach to defining the reason(s) for the problem
- Prevents problems from returning
- Creates better standards
- Encourages team work
- Allows for solving problems permanently
**How do you do it?**

The problem-solving methodology involves a 6-step method. It has several advantages:

- It is simple
- Both groups and individuals can use it
- It can be used at all levels of the organization
- It can focus teams on the issue at hand with minimal training

The six steps are:

1. Describe the problem.
2. Implement the containment.
3. Analyze and determine solutions.
4. Determine root cause(s).
5. Implement solution(s).
6. Verify effectiveness of solution(s).

1. **Describe the problem.**

   This is the crucial step! Approach it as follows:

   a. Write a statement describing the problem. A good problem statement describes the situation both in terms of your own experience and in measurable terms.

   b. The statement should be:
      - Specific - what it is, what it is not? How big the problem is? Is it increasing, decreasing or unchanging?
      - Time bound - when did it first appear? How was it first identified? Are there other events happening at the same time?
      - Current - what is the present trend? Is it increasing, decreasing or unchanging?

   The following Is/Is Not form can be utilized to guide the team in problem identification.

2. **Implement the containment.**

   This step is about taking the necessary actions to ensure the customer does not experience any of the effects. It is often a band-aid until a permanent solution can be applied.

   The containment may or may not be part of the permanent solution (Step 5).
3. Analyze and determine solutions.

Once the problem has been identified, and temporary containment is in place, it is time to analyze the problem carefully.

a. Gather data on the problem.

b. Use the following analysis tools to assist in this process.

5-Why's

Most often you will observe a symptom of the problem rather than the problem itself. Always ask "Why?" while arriving at the answer with data.

Statement of the Problem: too many customers are not receiving exactly what they had ordered.

Why?
Because customer service does not know the exact inventory level.

Why?
The logistics system is 2-3 days behind the actual.

Why?
The information being entered is not entered daily.

Why?
It is always batched to be done twice a week.

Why?
No one has notified the logistics department to request daily or hourly entries.

Flowcharts or process maps

Creating a flow chart or process map allows for a visual representation of a sequence of operations (tasks) consisting of people, work duties, and transactions that occur for the design and delivery of a product or service. It is one of the most effective methods to document a process.
Frequency Charts and Check Sheets

Frequency Charts and Check Sheets are used to collect, organize, prioritize, and analyze data. They can be used to answer the question, "How often is an event occurring?" They help you "see" the variation in the process.

<table>
<thead>
<tr>
<th>#</th>
<th>Orders/department</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>domestic - fax</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>international - fax</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>domestic - internet</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>international - internal</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>domestic - phone</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>international - phone</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>internal org</td>
<td></td>
</tr>
</tbody>
</table>
Histograms

Histograms utilize measurement data and display the spread and shape of the distribution. They are a simple graphical representation of the dimensional performance for a sample of data. It is a 'picture' of the sample data. Histograms only provide a clue to how the process is running.

Control Charts

Control Charts are basically line graphs taken over time. The vertical axis contains dimensions and specification limits, while the horizontal axis is based on a time interval. There are many variations of control charts. Control Charts are very useful for tracking progress over time.

Scatter and Concentration Plots

Scatter and Concentration Plots are used to study the possible relationship between one variable and another. Through visual examination and additional mathematical analysis, problem solvers can determine relationships between variables.

Brainstorming and Storyboards

Brainstorming is to capture people's ideas and organize those thoughts around common themes. Begin with a topic, then get as many ideas listed as you can in 10-15 minutes. Do not criticize during the session!

Storyboarding is similar, except you have participants write down their ideas on the problem by explaining it as a visual story. The information is then displayed on a format that is graphically rich and engaging.
4. Determine root cause(s).

Many of the tools explained in the previous section can also be used to assist in determining the root cause. Each potential root cause must be tested to ensure the correct permanent solution is implemented.

Clarify what constraints might apply to a proposed solution (approvals required, timing, impact on other departments, etc.). The following questions may be useful in determining root cause:

- Is there a better way to do things?
- Can you eliminate the root cause entirely?
- Can you minimize negative forces?
- Can you strengthen positive forces?
- Have you explored all possible scenarios?

5. Implement solution(s).

Gain consensus of the action plan for the implementation of the solution(s) the team has determined to be the root cause(s). Ensure key decision makers approve the course of action. Plan the implementation, when it will start, who will do doing what, and what type of measurements will be utilized.

6. Verify effectiveness of the solution(s).

Once implementation has begun, ensure the correct measurements are in place tracking each solution relative to the problem description. If the problem has been eliminated, update the work standards or documentation.

If the problem has not satisfactorily improved, return to Step 1. Learn from what you have done as to not go down that same path. (Additional data would most likely be available to be further analyzed by the team).

Utilize the Problem Solving Storyboard form as a visual aid to complete each step.
The following chart is a summary of the various problem-solving tools. This is by no means exclusive, but will serve as a catalyst on the initial problem-solving teams.

<table>
<thead>
<tr>
<th>Tools</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 5-Why's</td>
<td>Defining the problem - finding the root cause</td>
</tr>
<tr>
<td>2. Flow Charts</td>
<td>Establishing control - finding deviations</td>
</tr>
<tr>
<td>3. Frequency Charts and Check Sheets</td>
<td>Gathering data - establishing control</td>
</tr>
<tr>
<td>4. Cause &amp; Effect</td>
<td>Developing root cause - gaining consensus</td>
</tr>
<tr>
<td>5. Histograms</td>
<td>Identifying the problem - gathering data</td>
</tr>
<tr>
<td>6. Control Charts</td>
<td>Gathering data - holding the gains</td>
</tr>
<tr>
<td>7. Pareto Charts</td>
<td>Identifying the problem - finding root cause</td>
</tr>
<tr>
<td>8. Scatter Diagrams</td>
<td>Identifying the problem - developing solutions</td>
</tr>
<tr>
<td>10. Is/Is Not Analysis</td>
<td>Defining the problem</td>
</tr>
</tbody>
</table>

Key Points for Problem Solving in the Lean Office

- Use the quick-fixes (band-aids) for containing the problem and then continue with all steps.
- Step 1 is the most important step in the process and will provide the most information when root cause is targeted.
- Most failures in problem-solving result in jumping to a conclusion. Use the various problem solving tools as the team deems appropriate.
- Problem solving teams can benefit from having a facilitator conduct the meetings.

Pull Systems

Why use it?

To create a system in which nothing is produced by an upstream (supplier process) until the downstream (customer process) signals the need for it. This enables work to flow without detailed schedules. The opposite of Push, where work in completed and passed downstream regardless of need or request.

Who does it?

The Lean project team will utilize the Lean tools and create the pull system. Everyone in the value stream will contribute to improving the system once it is in place.

How long will it take?

This will depend on the complexity of the value stream, number of processes connected and the variety of work being completed. The Lean project must spend 2-4 hours on each value stream to determine how a pull system can be implemented. Implementation may take 1-2 weeks to complete. On-going improvements are implemented as required.

What does it do?

To create a pull system there needs to be a very good (data rich) understanding of the downstream process(es).
The pull system is based on a signal (i.e., kanban) to inform an upstream process that work is required. This signal will prevent the overproduction of work (waste) and ensure only what is required downstream will be produced. A true pull system is a challenge in administrative areas, so the tools of FIFO and In-process supermarkets are utilized. (See Continuous Flow)

There are two types of kanbans:

The withdrawal kanban is a printed card or folder indicating the quantity of work to be removed from the in-process supermarket. (See Office File System)

A production kanban is a printer card or folder indicating the quantity of work to be processed from what was requested downstream. (See Office File System)

How do you do it?

1. Learn the tools of kanbans, FIFO, and In-process supermarkets.

2. Gather appropriate downstream data from process(es). Include cycle times, number of interruptions, volume of work for a specified value stream.

3. Brainstorm with the team to see how a Pull system can be utilized.

4. Create the appropriate visual aids; either kanban cards or another type visual control to signal work request or to indicate not to overproduce more work.

5. Create a Standard Work Chart for system.

6. Train employees to the new system.

7. Implement system and work toward improvements.

Note: It is recommended the a pilot project be initiated to better understand the pull system by implementing the kanban system for office supplies. (See Kanbans for Office Supplies)

Key Points for Pull Systems in the Lean Office

- The total number of kanbans or folders containing the work must cover the process lead time.
- When creating the kanbans and work quantity create a safety margin.
- Kanbans are the heart of the pull system.
- Kanbans should be a standard card or folder, labeled appropriately.
- No upstream process should release the kanban unless it is error-free.
- Kanbans always travel with the work to ensure just-in-time information and providing a visual control.
Resistance to Change

The 80/20 Rule

Why use it?
To understand the opposition in how improvements will impact an individual's work.

Who does it?
The manager or supervisor must take the lead in understanding the types of resistance. The Lean project team can address this through good communication and co-worker support.

How long will it take?
This should take 2-4 hours to understand. Usually the first couple of meetings will determine the resistance needed to be addressed. Manager/supervisor to talk to the more difficult resistors privately.

What does it do?
Understanding the resistance to change will allow for clearer communications to the Lean project team, in that, change is inevitable. Most resistance is due to the lack of communications, therefore, the worker does not know how the change (or improvements) will affect him or her. Use the Business Case for Lean and Predictable Output sections of this Lean Office Pocket Guide to address the overall need for change.

1. Understand the 4 S's of resistance.
   - Resistance to Skills
   - Resistance to Support
   - Resistance to Society
   - Resistance to Stress

Resistance to Skills is due to the increases in anxieties due to new work requirements that appear too technical, too complicated, or required skills someone is not comfortable doing. The easiest and most effective way to address this fear is to provide employees with information, training, and education that will prepare them to master the skills required to implement the changes. This will be true of Lean Office tools and techniques, as they will require a different more challenging way of working.

Resistance to Support is due to people understanding that as new processes are streamlined their jobs may be at risk. In some cases this may be a justifiable fear. Some job functions will change, and some departments consolidated. But as companies deploy the Lean tools, they will be in a better position for growth and will then have the ability to shift people to other administrative functions. Acknowledge the difficulty this presents to the employee and organization. Empathize with the changes that affect them. Point out the benefits of Lean as a long term solution for job security, advancement and organizational growth.
Resistance to Society is due to people that are resistance to any ideas that do not originate with them. Their pride and ego won't let them accept any idea that does not have their stamp on it. Fortunately, implementing Lean Office tools and practices is a team effort, with many opportunities for people to provide input into how these new systems and procedures are developed and deployed.

Resistance to Stress is due the variety of difficult challenges the worker may be facing, not only in the office, but in their personal lives. If an employee is not making the transition well, the manager/supervisor should find out quickly. It may be related to outside stresses not controlled by the organization. In these situations, it's important to understand the personal situation affecting the work. Emphasize, and create realistic expectations for the workers acceptance to change in the Lean Office.

2. Analyze quick adapters.

Recognizing employees who are leaders and can be the day-to-day champion will make the Lean Office journey easier. They are there in the workplace, managers/supervisor must be on the look-out for them and when found; used wisely. Remember, no change can be effective and sustained without employees who have a passion to keep it in place.

There are five levels of support usually found within an organization going through change. They are:

- People who will make it happen
- People who will help it happen
- People who will let it happen
- People who are mildly against it
- People who will actively sabotage it

3. Apply the 80/20 rule to (2).

No more than 20% of the employees will fall into the last two categories. Of that 20%, 80% of those people can be converted into supporters, while 20% will never accept any change. Mathematically, .8 + (.8 x .2) = .96 or 96% will be in support. Focus on the 96%!

4. Conduct a meeting.

Conduct a meeting with the group of employees to address the changes and any fears they may have.

5. Continue to monitor progress and acceptance to change.

Key Points for Resistance to Change in the Lean Office

- Continue to assure employees the organization's need to improve administrative areas. In that, the benefits of a profitable company will be positioning it for growth while providing job security.
- Continually look for ways to involve employees in the change process.
- Find those informal, day-to-day champions and use them wisely.
- Ensure reward and recognition are used for team and individual contributions.
- Create visual aids about the changes well in advance.
- Communicate to everyone impacted by the proposed changes ahead of time.
Runners

Why use it?
To ensure takt time or pitch is maintained while the focus is on value-added activities.

Who does it?
The dedicated function or person is assigned to distribute work to designated areas, comprising of value-added activities, within the value stream.

How long will it take?
It will take about 1 hour to brainstorm initially with the team to determine the runner's role.

What does it do?
The runner allows the organization:

- Designated workers to focus on value-added activities or critical processes only
- A pace of work to be established throughout the day
- Shared support services between departments to improve work flow
- Improved office productivity

How do you do it?

1. Study the future state process or value stream map.
2. Determine the runner's route with the established pitch time to eliminate waste of transport and motion.

### Standard Work Chart

<table>
<thead>
<tr>
<th>Takt Time</th>
<th>Upstream Process Name</th>
<th>Downstream Process Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 minutes/line item</td>
<td>Sales</td>
<td>Distributor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard Work Sequence for: Runner (Admin Support)</th>
<th>Pitch Increment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Runner picks up work units from heijunka box at two hour increments, starting at 8:00am.</td>
<td>2 hours</td>
</tr>
<tr>
<td>2. Runner delivers work units (kanbans) to customer service in international and domestic work cells.</td>
<td></td>
</tr>
<tr>
<td>3. Runner picks up work orders from each work area.</td>
<td></td>
</tr>
<tr>
<td>4. Runner delivers work orders as mail units to mail room.</td>
<td></td>
</tr>
<tr>
<td>5. Runner continues to Admin cell to fax orders.</td>
<td></td>
</tr>
<tr>
<td>6. Runner completes any outstanding request from work cells and awaits next pitch increment.</td>
<td></td>
</tr>
</tbody>
</table>

### Diagram:

- [Diagram showing workflow and work cells]

**RUNNERS**
4. Determine who should be the runner. The following are attributes of a good runner:

- Trained well in value stream requirements
- Good communicator
- Understands Lean concepts
- Understands the importance of takt time and pitch
- Is efficient and effective in work duties
- Has a good attitude about change

5. Create a runners cart or carry-all for the work to be held. Make it as small and versatile as possible.

6. Train the runner, and backup.

7. Monitor the route, update Standard Work as improvements are suggested.

Key Points for Runners in the Lean Office

- A runner must:
  - communicate well
  - see and report problems as they occur
  - understand Lean concepts
  - strive to maintain pitch
  - look for ways to improve route

- Runners are critical in providing communication to assure small problems throughout the day do not become larger ones.

- Runners should have procedures for communicating problems when pitch cannot be maintained (i.e., supervisor’s cell phone, managers or directors electronic schedule, etc.).

- Remember, the runners function for administrative value streams will most likely be an additional duty for someone. This person should have the work capacity (time) and a willingness.

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Six Sigma

Why use it?

Six Sigma is an sophisticated problem solving approach for improving business performance. Six Sigma is "management driven by data." It is based upon improving processes by controlling and understanding variation, thus improving predictability of business processes. It is a disciplined, data-driven, decision-making method.

In its purest form Six Sigma is a term used to describe a measure of quality control that is near perfection. The Six Sigma Process uses data and rigorous statistical analysis to identify "defects" in a process, service, or product, reduce variability, and achieve as close to zero defects as possible.

Less than Six Sigma is not good enough because we would have to accept the following:

- 16,000 pieces of mail lost by the U.S.P.S. every hour
- Two unsafe plan landings per day at O'Hara International Airport in Chicago, Illinois
- 32,000 missed heartbeats per person per year
- 20,000 incorrect drug prescriptions per year
- 22,000 checks deducted from the wrong bank accounts every hour
- 50 new born babies dropped at birth per day
Who does it?

The Six Sigma process usually is facilitated by a Black Belt trained staff member. Achieving Black Belt certification signifies that the individual has successfully completed an improvement activity with a defined cost savings.

How long will it take?

Six Sigma team projects typically will take 1 to 3 months (or longer) depending of the complexity of the problem.

What does it do?

Six Sigma provides the organization with the following:

- Improved internal and external customer satisfaction
- Improved productivity of employees
- Improved problem solving skills
- Reduced costs
- Reduced number of errors or mistakes
- Standard continuous improvement methodology
- Fact based decision making process
- Common language throughout the organization

Six Sigma can be effective when used as part of a business improvement strategy. When combined with the philosophy and methods of Lean it becomes a powerful method for continuous improvement.

Six Sigma is a reference to the goal of reducing defects or mistakes to zero. Sigma is the Greek letter mathematicians use to represent the "standard deviation of a population." The standard deviation from a population represents the variability there is within a group of items, i.e., the population.

Six Sigma is a measure of variation that achieves 3.4 defects per million opportunities or 99.99966 percent acceptable. It is represented by the following bell shape curve. The higher the sigma value, the better.

---

**How do you do it?**

Six Sigma uses a five-step problem solving tool called D-M-A-I-C:

1. Define
2. Measure
3. Analyze
4. Improve
5. Control

1. Define

Define the customers, their requirements, the team charter, and the key process that affects the customer. The following tools can be utilized:

- Team Charter
- Process Mapping
- Cause and Effect Diagram
- Affinity Diagram
- Voice of the Customer (VOC) Table

(See Problem Solving for many of these tools)
2. Measure

Identify the key measures, the data collection plan for the process in question. Execute the plan for data collection. The following tools can be utilized:

- Document Tagging
- Data Collection and Check Sheet

(See Data Collection and Document Tagging)

3. Analyze

Analyze the data collected as well as the process to determine the root cause(s) for why the process is not performing as desired. The following tools can be utilized:

- Histogram
- Pareto
- Scatter Diagram
- Control or Run Chart
- Design of Experiments (DOE)

(See Problem Solving for many of these tools)

4. Improve

Generate and determine potential solutions and plot them on a small scale to determine if they positively improve process performance. The following tools can be utilized:

- Process Mapping or Flowcharting
- Paynter Chart

(See Problem Solving for many of these tools)

5. Control

Develop, document, and implement a plan to ensure performance improvement remains at the desired level. The following tools can be utilized:

- Control or Run Charts
- Paynter Chart
- Standard Work

(See Problem Solving and Standard Work)

The following is an example on how to calculate the Six Sigma capability for one of your processes:

### Six Sigma Calculation Worksheet

<table>
<thead>
<tr>
<th>Process Name</th>
<th>Order Entry</th>
<th>Date</th>
<th>Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
<th>Equations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1. What process do you want to consider?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2. How many units were put through the process?</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3. Of those that went through, how many passed?</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4. Compute the yield for the process</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5. Compute the defect rate based on Step 4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6. Determine the number of potential things that could create a defect (note: use N + 10 as a conservative number of potential defects)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7. Compute the defect rate per CTQ characteristic</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8. Compute the defects per million opportunities (DPMO)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>9. Convert the DPMO (Step 8) into a sigma value, using a Six Sigma Conversion Chart (go to six sigma conversion table)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10. Draw conclusions</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Your Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Entry</td>
</tr>
<tr>
<td>1,283</td>
</tr>
<tr>
<td>1,138</td>
</tr>
<tr>
<td>.887</td>
</tr>
<tr>
<td>.113</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>.0113</td>
</tr>
<tr>
<td>11,100</td>
</tr>
<tr>
<td>Includes a 1.5 sigma shift for all listed values at Z.</td>
</tr>
<tr>
<td>3.8</td>
</tr>
<tr>
<td>Opportunity for Improvement</td>
</tr>
</tbody>
</table>
Key Points for Six Sigma in the Lean Office

- Train employees in the various problem solving tools through using actual examples as much as possible.
- The team should utilize a Black Belt for guidance in all phases.
- Compliment Six Sigma projects using Lean tools and practices.
- Six Sigma is one tool to be used in an overall business improvement strategy.
- Continue to recognize and reward staff as Six Sigma projects are completed.
- It should be emphasized that to be most effective Six Sigma should be used as part of an overall business improvement strategy, not by itself. When used in this way Six Sigma will become an important and compatible method in your improvement toolbox.

Standard Work

Why use it?

Work must be standardized before it can be improved. This should be the basis for all continuous improvement activities.

Who does it?

The Lean project team will determine best practices, document them, train everyone to those practices, and provide a system to improve. Everyone eventually will contribute to improvements for standard work.

How long will it take?

Most administrative best practices for an department or value stream can be identified in a 1-2 hour meeting. Subsequent documentation may take up to 4 hours or longer depending on the complexity of the process(es).

What does it do?

Standard Work establishes the best practice or best sequence of tasks to minimize waste. Standard work consists of a set of procedures that control tasks so they are always executed consistently with no variation. Standard work is a major component of kaizen activities because it sets the standard upon which to improve.
Standard work utilizes two main tools: the Standard Work Combination Table and the Standard Work Chart.

The Standard Work Combination Table:

- Indicates the flow of all work with an area or process
- Documents the exact time requirement for each work element or task within a process or area
- Displays the work design sequence based on takt time (ideally)
- Demonstrates the time relationship between physical work (computer entries, phone calling, etc.), movement of work (through walking or database sending of documents), queue times and computer processing time

The Standard Work Chart:

- Displays the work sequence, process layout and work-in-process
- Displays the worker movement for each activity, task or operation
- Identifies quality standards, safety concerns or critical opportunity for errors

How do you do it?

Standard Work Combination Table

The Standard Work Combination Table is an important tool to assist management in determining work load requirements, who requires training, and what may be some process problems. The table clearly shows the flow of human work and all the various steps required to complete a process. It further will:

- Break the task into separate elements
- Allow for timing each element
- Allow for a good visual of the work
- Be a training and visual aid for the area
Standard Work Chart

The Standard Work Chart illustrates the sequence of work being performed. This is very useful for training to a standard.

<table>
<thead>
<tr>
<th>Standard Work Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Order Entry</strong></td>
</tr>
<tr>
<td><strong>Process Name</strong></td>
</tr>
<tr>
<td>Customer Service</td>
</tr>
<tr>
<td><strong>Department</strong></td>
</tr>
<tr>
<td><strong>Takt Time</strong></td>
</tr>
<tr>
<td>3 minutes/line item</td>
</tr>
<tr>
<td><strong>Standard Work Sequence for:</strong></td>
</tr>
<tr>
<td>Runner (Admin Support)</td>
</tr>
</tbody>
</table>

1. Runner picks up work units from heijunka box at two hour increments, starting at 8:00am.
2. Runner delivers work units (kanbans) to customer service in international and domestic work cells.
3. Runner picks up work orders from each work area.
4. Runner delivers work orders as mail units to mail room.
5. Runner continues to Admin cell to fax orders.
6. Runner completes any outstanding request from work cells and awaits next pitch increment.

Key Points for Standard Work in the Lean Office

- Videotaping can be used to accurately document a current process. Further analysis with the Lean project team require reviewing the video footage and documenting the various steps on the Standard Work Combination Table form. If videotaping is utilized, notify the person who will be videotaped prior to the activity. That person should be included on the team.
- The Standard Work Combination Table and Standard Work Chart should be updated through kaizen events.
- Both documents should be posted at the work area.
- Both documents are excellent training aids.
Takt Time

Why use it?
To determine how fast work must proceed through the value stream to meet customer demand. Also known as ‘the pace of customer demand’.

Who does it?
The Lean project team must collect real time data or utilized historical data. (See Data Collection Techniques)

How long will it take?
This should take only a few seconds to calculate. If you need to collect historical data, this may take a few hours. If you need to collect real time data for a period of time, it will depend on that time period.

What does it do?
Establishing takt time for an organization will accomplish the following:
- Align work efforts to actual customer demand
- Focus workers awareness on what is expected
- Set a standard rate for a process (as long as other Lean tools are utilized)

How do you do it?
1. Gather appropriate data on customer demand.

<table>
<thead>
<tr>
<th>Takt Time Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
</tr>
<tr>
<td>Oil changes</td>
</tr>
<tr>
<td>Transmissions serv.</td>
</tr>
<tr>
<td>Belt replacement</td>
</tr>
</tbody>
</table>

2. Determine internal resource allocation in terms of available work time.

Available hours of operation: Total Hours Open:
- M-F 8a – 8p = 12 hours/day
- S-S 8a – 6p = 10 hours/day

Total hours for one week = 80 hours.
Four weeks per month (average) x 80 hours week = 320 available hours per month period. 320 hours per month x 3 months = 1280 total hours available to work on all three value streams.

3. Utilize the formula to calculate takt time.

Example for oil change value stream:
Takt time = \( \frac{\text{Available daily work time}}{\text{Total daily volume required}} = \frac{\text{Time (T)}}{\text{Volume (V)}} \)

\[
\text{Takt time} = \frac{960 \text{ hours or 57600 minutes}}{3840 \text{ oil changes}} = 15 \text{ minute takt time}
\]
This 15 minutes represents the time the organization must have capacity to service a customer oil change. Takt time for this value stream must be balanced with the requirements of the other value streams to ensure people, equipment and resources are scheduled.

Once takt time has been established, then all efforts will be required to meet customer demand. This is accomplished by continuing to apply Lean tools. It is rare that the takt time available be the total time the worker has during the day to meet just that customer demand.

Note: Administrative area takt times are used to calculate Pitch, which is a more reasonable period of time to move work or provide a service throughout the value stream.

Key Points for Takt Time in the Lean Office

- Takt time is the rate an organization must provide a service or produce a unit of work to meet customer demand.
- The Lean Office is based on establishing accurate takt times (and pitch determinations).
- Takt time (and pitch) will set the pace of work for the office.
- Takt time must be calculated before Standard Work can be completed.
- As work volume increase and decrease, takt time must be adjusted so that worker capacity is synchronized with customer demand.
- Make takt time visible to the work group.

The Goal Card

Why use it?

To ensure the strategic direction of the organization is embraced by all employees. This is accomplished by creating a visual office contract defining the department and individual goals in support.

Who does it?

Top management will create the strategic direction. Managers, supervisors and all workers will contribute to what their support will be in terms of measurable activities.

How long will it take?

The strategic direction or plan usually takes 1-2 days with an off-site meeting. The roll out to the entire organization, along with creating the Goal Cards, usually takes 1-2 months.

What does it do?

The Goal Card is the product of a process that unites the company’s goals (strategic direction) with department and individual goals. It is the first step in total employee involvement. Only by involving everyone – those who know their job best – can an organization achieve its Lean and business goals. It will be each individual who will make the difference.
Overall Design

The typical design for a Goal Card measures 8 ½" x 11" and is made of card stock. It is folded into three sections, giving a company six panels to provide information.

The company prepares the three exterior panels. Panel A is the front of the card when folded and acts as the title page. Panel B is the back page. Panel C introduces the process of the Goal Card and is usually written by the senior manager in the organization.

The interior panels contain the company's strategy and Lean goals, the business unit goals [division or department], and a place where each individual can list their own personal or team goals.

The creation of a Goal Card includes seven steps:

1. Articulate a Lean strategy.
2. Identify Lean goals.
3. Create a Company Goal Card.
4. Present the process to the organization.
5. Integrate personal and/or team goals.
6. Post the Goal Card.
7. Continue to monitor and review goals.

1. Articulate a Lean strategy.

Strategic planning has been in existence for many, many years, and only in the past 10 years or so, the Strategic Plan for an organization was deemed a value to share with all employees. The Goal Card focuses explicitly on all the business processes that will allow the organization to achieve success. Lean is one of those systems allowing this to occur.

2. Identify Lean goals.

A Strategy is useless without direction. This direction is provided by a few solid goals that lend themselves to measurement. Many organizations have had the most success with four types of goals, usually defined as:

- Improved customer satisfaction
- Financial (business) growth
- Process improvement
- Development of organizational learning
Some organizations find it useful to divide process improvement into three goals that include quality improvement, productivity improvement, and customer satisfaction.

Goals provide an outline for a corporate strategy. They must be specific, measurable, and attainable. For example, a goal might be, "To improve customer satisfaction." But everyone wants to do that. So a Lean Goal should give direction to the organization. For example, if the goal category is customer satisfaction then some goals might be:

- Improve patient wait time by 10%
- Improve on-time deliveries by 15%
- Improve the defect rate for invoicing to < 200
- Improve time-to-quote to less than one day

3. Create a company Goal Card.

The following should be considered when developing a company Goal Card:

- Include the senior manager's introduction to all employees
- Write a presentation of Lean Strategy and Goals
- Create a Panel for Team and/or Individual goals
- Print the Goal Card for company-wide distribution

Now the Goal Card process is ready for company-wide implementation.

4. Present process to the organization.

5. Integrate personal and team goals.

Depending on the size and structure of the company this step may involve identifying department or team goals before individuals articulate their personal goals. Whatever the situation, the principles of effective goal setting are the same.

The following guidelines will help keep personal and team goals understandable and useful:

- Goals should be attainable
- Goals should be challenging
- Goals should be meaningful to the individual or team
- Goals should be based on company and/or department objectives
- Goals should be stated simply and clearly
- Goals should be as specific as possible

The following provides a number of examples of personal and team goals.

Goals should always include the following:

- An action verb [to reduce]
- Measurable output [internal errors at XX process]
- Quantity Improvement [by 50%]
- Time frame [by December 22]

6. Post the Goal Card.

7. Continue to monitor and review goals.

Don't underestimate the power of recognition. A little recognition helps break many barriers within an organization. In addition, people need to feel responsible to peers as well as leaders. So monitoring and visually reporting progress creates a culture of sharing, recognition, and responsibility.
Key Points for The Goal Card in the Lean Office

- Create a timeline for developing Goal Cards and implementing company wide.
- Goals Cards should be completed yearly.
- Keep goals realistic and obtainable.
- Management should continually reinforce Goal Cards by giving recognition to the department and individuals when visiting the area.
- Goal Cards should be posted in work areas.
- Goal Cards are a critical element to the Lean Office.

Value Stream Mapping

Why use it?
To allow a team to easily "see" the work flow and information required for a specified set of processes linked by a common theme (or customer).

Who does it?
The cross-functional team made up of representatives of the value stream (it may also include the most downstream customer).

How long will it take?
This should take 1 to 2 days for creating the current state map and a first pass of the future state value stream map.

What does it do?
Value stream mapping accomplishes the following:
- Creates a common vision for everyone connected to the targeted value stream, of both current and future states
- Provides the visual office roadmap for the team to allocate the appropriate resources to wastes that are identified
- Provides the foundation in which to build a Lean Office based on the customer perspective
A value stream map is very useful if it is used within a systematic approach to Lean implementation. Do not use this tool strictly for management, get all the people involved in the exercise – and share the maps by posting in appropriate areas.

**How do you do it?**

Value stream maps are of two types (or phases): the creation of the current state map and creation of the future state map.

**The current state map**

Value stream mapping begins with the current state and proceeds according to the following steps:

1. Utilize icons to draw a "shell" of your current state listing the main processes, customers, suppliers - internal or external.

   - Dedicated Process Box - the main process or area where value-added and/or non-value-added work occur (order processing, order quoting, title search, customer credit history, sub-contractors agreements, etc.)
   - Shared Process Box - location where multiple value streams share resources (Mail Rooms, Human Resources, Banks, etc.)
   - Attribute Area - features, characteristics of the process (cycle times of individual tasks within the process, number of workers within the process(es), internal defects, etc.)
   - Customer or Supplier - the upstream and downstream customer or supplier, with their respective attributes
   - Truck Shipment - denotes the physical arrival or departure of work related to the value stream
   - Plane Shipment - denotes the physical arrival or departure of work related to the value stream
   - Inventory/Queue Time - is the amount of time work or information resides between two processes
   - Database Interaction - is the time for computer processing
   - Manual Information Flow - physical conveyance of work between two processes within the value stream (hand carrying work to another area or person, runner delivering work to another process, etc.)
   - Electronic Information Flow - the electronic signal that communicates information from database to process or from database to database
   - Mail - the arrival or sending of metered mail
   - Folder - a single unit of work
Folders - multiple units of work group through a common process

Exceptions or disruptions - any major obstacle that prevents flow from occurring throughout the value stream

Go-see Scheduling - the physical viewing and collecting of information of the various processes within the value stream to determine work loads

Push - the movement of work or information downstream regardless of need

Worker - the worker(s) assigned to the particular process

2. Go to the various areas, beginning with the most downstream process and collect the various attributes related to the value stream. Get actual data, take a stop watch and clearly communicate to the person what you are doing and why.

3. Determine the amount of time work resides between processes.

4. Determine the amount of work that arrives at each process.

5. Determine what is done with the work after the process has completed its part.

6. Convey all the attributes on the current state map.

7. Draw all forms of communication, electronic and/or manual.

8. Create a step graph displaying cycle times and queue times. This is typically the value-added time.

9. Calculate total queue times and cycle times to arrive at total lead time. Display total queue time, along with total lead time within a box on the current state map.

Once the map has been created, ensure a consensus is reached with the entire team of exactly what is currently happening within this value stream. If additional data is required, collect it now. The basis for creating a doable future state has a lot to do with the accuracy of information obtain from the current state. Do not rush this step!

Note: When creating the current state value stream map, utilize these icons as a representative sample. The team may create their own icons as appropriate.
The future state map

The future state map is the roadmap for the Lean initiatives. It is created with a team consensus, brainstorming, and simple problem solving so Lean tools are properly utilized. Additional icons that may be used are:

- **Buffer Resources** - temporary resources to assist workflow when there is an influx of customer demand (temp workers, retiree's, cross-training, overtime, etc.)
- **Safety Resources** - temporary resources to assist workflow when there are internal issues such as turnover, illnesses, vacation, etc., (temp workers, retirees, cross-training, overtime, etc.)
- **Kaizen Focus** (improvement activity) - a focused group to improve an areas within a specified time period
- **Cart** - a device to distribute work units throughout the value stream
- **Kanban** - work units for delivery to a process
- **Supermarket** - an in-process location to hold work until it is required downstream
- **U-shaped Work Area (cell)** - the arrangement of equipment and people to accommodate efficient work flow

**Pull** - the representation of work being requested from a downstream process

**FIFO** - a physical location to hold work sequentially for the downstream process

**Heijunka Box** - a physical location to hold work based on volume and variety

**Runner Route** - the route the runner will use to deliver and pick-up work throughout the value stream

**Pitch Board** - a physical device to hold work based on volume
Remember, the overall goal of creating a value stream map is for clear identification of where waste lies and to obtain an accurate portrayal of current work conditions. Many times there will be some basic issues arising once this current value stream map has been created. Also, there may be times, for a variety of reasons, the current state mapping may need to be postponed due to an issue or problem identified. If that is the case, address the issue or problem utilizing a problem solving methodology. (See Problem Solving)

Key Points for Value Stream Mapping in the Lean Office

- Value stream mapping is a valuable part of a systematic approach to Lean implementation.
- It is a great visual aid in identifying wastes.
- You can create great maps, but the follow-through is most important. Use the other Lean Office tools in this pocket guide to do that.
- Always draw the customer first and think of improvements from that perspective.
- Future state maps will have many iterations, update as necessary.
- Ensure key people are involved in creating the maps.

Why use it?

To establish a visual communication system ensuring adherence to standards so work is completed on schedule, without errors.

Who does it?

The Lean project team will be chartered to ensure visual controls are part of any continuous improvement activity.

How long will it take?

It should take approximately six months to 1 year for a mid-size organization of 500 employees.

What does it do?

Visual controls in the office will accomplish the following:

- Allow 5S to be Standardized and Sustained
- Ensure metrics are posted and continuous improvement efforts are directed toward negative trends
- Establish the need of visual aides (displays) to have people involved
- Improve productivity
- Reduce internal errors
- Reduce stress
**How do you do it?**

To create a visual language throughout the organization, the following steps can be used:

1. Form and train the visual office team.
2. Create an implementation plan.
4. Ensure 5S system implementation.
5. Standardize visual metrics.
6. Standardize visual displays.
7. Standardize visual controls.

1. Form and train the visual office team.

This may be a subset of the Lean project team. Creating this part of the Lean Office can be fun to do, but also it will require additional time. Many Lean Office project teams do not give this the appropriate time. It will be team’s direction to:

- Create the locations where visual displays and standards will be posted
- Establish visual metrics (VM), visual displays (VD) and visual controls (VC)
- Create standards for all visuals (location, updates, themes, etc.)

2. Create an implementation plan.

The core team must designate target areas with a timeline for the training and implementation. Each target area may require a champion. The following Visual Office Worksheet can be utilized for the planning.


4. Ensure 5S system implementation.

5. Standardize visual metrics. The Lean projects should have identified appropriate metrics (See The Goal Card) or other performance measurements critical to the organization. Standardize this in terms of:

   - Data collected is easy to understand and interpret
   - Relevancy to what is measured
   - Allowing for everyone to contribute

Visual metrics must have the following attributes:

- Directly related to strategy
- Be non-financial
- Be location-specific
- Change over time
- Be easy to collect and post
- Provide for fast feedback
- Foster improvement initiatives
6. Standardize visual displays.

Visual displays communicate important information about the work in terms of safety, environment or business related activities. Signboards are often used as a visual display.

7. Standardize visual controls.

The standard created is to integrate visual metrics, visual displays and visual controls. The following illustrations explain the levels of visual control. At this step, there should be processes, tasks, checklists, computer programs, to ensure what has been created in the visual control system is sustained (i.e., mistake-proofing).

The mistake proofing or error proofing is the designing of a process to ensure no error can occur.

For example: Within a standard process, there may be a call out for a specific form to a customer requiring a discount on his or her order. In the efforts to ensure the discount is not missed, the date field on the form is “set” or a computer entry only can be made, for that particular field.
The following is a list of the various types of visual tools and their general purpose.

<table>
<thead>
<tr>
<th>Type</th>
<th>General Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storyboards</td>
<td>Share information about projects or improvements</td>
</tr>
<tr>
<td></td>
<td>To educate and motivate</td>
</tr>
<tr>
<td>Signboards</td>
<td>Share vital information at point-of-use</td>
</tr>
<tr>
<td>Maps</td>
<td>Share actual processes, standard operating procedures, directions, etc.</td>
</tr>
<tr>
<td>Kanbans</td>
<td>Control the withdrawal of work (or supplies) in and out of supermarkets, work areas, etc.</td>
</tr>
<tr>
<td></td>
<td>Can be used to regulate work in FIFO lanes</td>
</tr>
<tr>
<td>Checklists</td>
<td>Provide an operational tool that facilitates adherence to standards, procedures, etc.</td>
</tr>
<tr>
<td>Indicators, Color Codes</td>
<td>Show correct location, item types, amount, or direction of work flow</td>
</tr>
<tr>
<td>Alarms</td>
<td>Provide a strong unavoidable sign or signal when action needs to be taken</td>
</tr>
<tr>
<td></td>
<td>(e-mail alert, pager code, etc.)</td>
</tr>
</tbody>
</table>

Key Points for Visual Controls in the Lean Office

- One picture is worth a thousand words. That is what the visual control is about. If a picture, diagram, or digital photo is exactly where you need it, when you need it to ensure a standard is met, then it is well worth the time and effort.
- Visual displays and controls should be part of all Lean tool applications.
- Visuals should begin with the first Lean project team meeting, by posting the Team Charter and Meeting Information form. (See Lean Reporting and Communications)
- Visual controls are Just-In-Time information.
- Ensure visual controls are updated regularly and part of the Lean Office audit process.

Why use it?

To identify, analyze and eliminate all non-value added activities utilizing Lean tools and practices.

Who does it?

Everyone in the organization must be involved in the identification and elimination of waste.

How long will it take?

The process is never-ending. The elimination of waste and variation is the foundation for the Lean Office.

What does it do?

Anything that adds cost or time without adding value is waste. Eliminating wastes will accomplish the following:

- Reduce cost to the organization
- Reduce queue time between processes
- Improve office productivity
- Improve quality
- Make the organization more competitive
- Encourage teamwork and employee involvement
How do you do it?

The process of waste elimination can be applied to any process or value stream. The following areas of waste will be explained with reference to the various Lean tools and practices that can be used in its identification and elimination.


This waste is producing work or providing a service prior to it being required or requested. That is the greatest of all the wastes. In that, if you overproduce some type of work or service, it encompasses many of the other wastes. For example, if you are preparing a quote for a customer without a request, and it is never requested, you most likely have waste in: excessive processing, transport, motion, etc., not to mention wastes from others that you may have acquired information from for that proposed quote.

Understanding what you are producing and in conjunction with what your customer is using will help you understand what is needed and what can be eliminated. If you don’t ask the question, you may be sending information to someone only to find out that they are not using it. The need for that information has gone away, however, you are still processing.

Examples of overproduction wastes are:

- Producing reports no one reads or needs
- Making extra copies
- Printing, e-mailing, sending, faxing the same document
- Entering repetitive information on multiple work documents or forms

To eliminate this type of waste, you would use Lean Office tools of:

- Takt Time
- Data Collection Techniques
- Pitch
- Standard Work
- Leveling or Heijunka
- Predictable Output
- Continuous Flow
- Pull Systems
- Others as appropriate

2. The Waste of Waiting (Time In Queue).

Waiting for anything be it people, signatures, or information is waste. This waste of waiting is “low hanging fruit” and easy to identify and ripe for the picking. We often don’t think of paper sitting in an In basket as waste. However, when looking for an item, how many times do we mull through the In basket to find it and this is also identified as a time waster. How many times do you actually touch something before you complete it? It’s the finish it, file it, or throw it away system, that can help with eliminating this waste.
Examples of waiting wastes are:

- Excessive signatures or approvals
- Dependency on others to complete task
- Delays in receiving information
- Computer program version problems
- Cross-departmental resource commitments

To eliminate this type of waste, you would use:

- Value Stream Mapping
- 5S
- Data Collection Techniques
- Lean Reporting and Communications
- Pitch
- Work Load Balancing
- Runner
- Kaizen Events
- Office File System
- Others as appropriate

4. The Waste of Transport (or conveyance).

Transport is an important and ubiquitous element. It affects the delivery of any work within the office. It is the movement of work that does not add value.

Examples of transport wastes are:

- Delivering documents that are not required
- Excessive filing of work documents
- E-mail distribution lists that are not up-to-date

To eliminate this type of waste, you would use:

- Standard Work
- 5S
- Office Layout
- Document Tagging
- Work Load Balancing
- Runners
- Office File System
- Continuos Flow
- Work Load Balancing
- Kaizen events
- Others as appropriate

5. The Waste of Overprocessing.

Putting more work or effort into work required by the internal or external customer is waste. This excessive processing does not add value for the customer, and the customer will not pay for it.
Examples of overprocessing wastes are:

- Duplicating reports or information
- Repetitive data entry
- Changing how information is conveyed between processes or departments
- Constantly revising documents

To eliminate this type of waste, you would use:

- Value Stream Mapping
- Standard Work
- Document Tagging
- Lean Reporting and Communications
- Work Load Balancing
- Data Collection Techniques
- Kaizen Events
- Data Collection Techniques
- Visual Controls
- Others as appropriate

6. The Waste of Inventory.

Stock, work piles, and excess supplies are waste. They all take up space, and may become obsolete if customer requirements change. Time is considered inventory.

Examples of inventory wastes are:

- Files awaiting signatures or approvals
- Files awaiting task completion by others
- Purchasing excessive office supplies
- Obsolete files
- Obsolete office equipment
- Not sufficient cross-training

To eliminate this type of waste, you would use:

- 5S
- Value Stream Mapping
- Standard Work
- Visual Controls
- Pull Systems
- Kanbans for Office Supplies
- Heijunka - Leveling
- Cycle Time
- Others as appropriate


This category of waste refers to all processing required to correct a defect. Defects (either internal or external) result in additional administrative processes that will add no value to the product or service. The idea is that it takes a shorter time to do it correctly the first time instead of doing it over to correct a problem or defect. Rework is waste and adds more cost, which reduces any profit to the bottom line.

Examples of defect wastes are:

- Data entry errors
- Pricing and quoting errors
- Forwarding partial documentation to next process
- Lost files or records
- Incorrect information on document

To eliminate this type of waste, you would use:

- Standard Work
- Predictable Output
- Visual Controls
- Office File System
- Interruptions and Random Arrivals
- Others as appropriate
(8.) The Waste of People’s Skills (People Utilization).

Also you will find at times an eighth waste of people utilization. This waste does not use people’s skills to their fullest.

This was a quick review of the wastes, with some office references for consideration, and suggested Lean Office tools that can be utilized for their elimination. Consider the following questions:

1. How can I start to communicate about these wastes throughout the organization?
2. What are some low-hanging fruit?
3. What can be done immediately to improve customer satisfaction?

These types of question should stimulate similar questions and allow more open communications regarding waste.

Key Points for Waste in the Lean Office

- Waste is anything that does not add value in your customer’s eyes and for which they are unwilling to pay for. Waste must be viewed from “fresh” eyes. Benchmarking other companies or inviting other departments to meetings to help brainstorm may assist in waste identification and elimination.
- Waste should be looked at both the macro (organizational or value stream) level and the micro (work unit or task/activity) level.
- The root of all waste is process variation from a standard or best practice.
- Waste identification and elimination must be a daily activity throughout the organization. And when this occurs, then and only then will a continuous improvement culture emerge.

Work Load Balancing

Why use it?

To determine how to distribute work units (or elements) across the value stream to meet takt time or pitch.

Who does it?

The Lean project team with representation from the area being improved.

How long will it take?

It should take approximately 4-8 hours to analyze current work assignments and brainstorm for improvements. 1 - 2 weeks to plan, create standards, and train.

What does it do?

Work load balancing will accomplish the following:

- Evenly distribute work elements
- Obtain accurate cycle times for each process
- Define order in which process steps are completed to assist in standard work
- Define the number of workers required for a given customer demand
- Assist in creating the future state map
- Improve office productivity
- Encourage team work through cross-training
How do you do it?

Work load balancing begins with an analysis of your current state. The best tool to perform this is a Worker Balance Chart.

Worker Balance Chart

The Worker Balance Chart is a visual representation of the work elements as a bar chart. It can then be used to determine how to balance the work within the value stream. There are seven steps to creating the Worker Balance Chart. The 7 steps are:

1. Chose a process within the value stream.
2. Obtain individual cycle times for the various tasks.
3. Add the individual cycle times to obtain total cycle time.
4. Create a worker balance chart of the current state.
5. Determine the ideal number of workers.
6. Create a worker balance chart of the future state.
7. Re-allocate work elements, document, and train.

1. Chose a process within the value stream.

Be very clear about identifying the process, its beginning and end. Be explicit to what the parameters of the process are. The team should have a good handle of the processes from creating the value stream map.

2. Obtain individual cycle times for the various tasks.

These cycle times should be derived from the current state value stream map. Re-visit these times to ensure accuracy. Some members of the team may want to take a stop watch and time the various tasks within the process.

3. Add individual cycle times to obtain the total cycle time.

4. Create a worker balance chart of the current state.

Make a bar chart identifying each process or worker, along with the various individual cycle times. It is recommended you visually display the chart on a flip chart so the team can review it as a group and comment. Use post-it notes to represent the tasks associated with the processes. Make the post-it notes proportionally to the time element for each individual task. Draw a horizontal line to represent takt time.

![Worker Balance Chart - Current State](chart)

![Worker Balance Chart - Current State](chart)

Notice that each task is further broken down into segments representing activities to completing that task. For example, Creating Quote has five sub-elements to complete that activity.
5. Determine the ideal number of workers.

To determine the ideal number of workers needed to meet the requirements of the value stream, you divide the total process cycle time by the takt time. (See Cycle Time)

6. Create a worker balance chart of the future state.

Work with team and move the post-its around to balance the various work elements. Attempt to have each worker balanced to takt time, while maintaining the flow of work. The ideal situation is to have everyone working at takt time.

7. Re-allocate work elements, document, and train.

Once consensus has been obtained on balancing the work elements, create Standard Work, train employees and implement.

In summary Work Load Balancing will:

- Evenly distribute work elements to the workers to improve flow
- Define the order in which work elements should be done within a process
- Define the number of workers required
- Assist in the creation of the work area design portion of the future state map

**Key Points for Work Load Balancing in the Lean Office**

- Involve workers in the activity.
- Ensure accurate cycle times are established for the current state.
- Do not eliminate people, utilize them in other value stream areas.
- Utilize visual controls when training.
- Utilize new office layout to improve work flow.
- Establish best practice upon which to conduct the activity, and improve from there.
Glossary of Lean Office Terms

5S - A process to ensure work areas are systematically kept clean and organized, ensuring employee safety and providing the foundation on which to build a Lean Office.

Active state - The horizontal position of a file folder indicating work needs to be completed.

Activity - The single or multiple act on taking a course of action.

Assessment - A structured form upon which to analyze a department or area relative to a particular topic.

Benchmarking - A structured approach to identify, visit and adapt world-class practices to an organization.

Brainstorming - The process of capturing people’s ideas and organize those thoughts around common themes.

Catchball - The back and forth communication between levels within an organization to ensure team alignment.

Cause and effect diagram - The visual representation to clearly display the various factors affecting a process.

Continuous flow - A processes ability to replenish a single work unit or service that has been requested or “pulled” from a downstream process. It is synonymous with just-in-time (JIT), which ensures both internal and external customers receive the work unit or service when it is needed, in the exact amounts.

Check sheet - The visual representation of the number of times an activity, event or process occurred for a specified time period.

Control chart - The visual representation of tracking progress over time. Similar to line graphs.

Control point - A physical element of work within a process that has clear set limits. For example, the minimum and maximum levels for the office supplies would be control points.

Cycle time - The time elapsed from the beginning of a work process request until it is completed.

Customer demand - The quantity of product or service required by the customer. Also referred to as takt time.

Data - Factual information used as a basis for further analysis.

Document tagging - The physical attachment of a form to a process work unit to document dates and times.

First In First Out - (FIFO) - Is the work controlled method to ensure the oldest work upstream (first in) is the first to be processed downstream (first out). This could be a raised flag or an e-mail alert.

Fishbone diagram - see Cause and Effect Diagram.

Flow - The movement of material or information.

Frequency chart - The visual representation of the number of times an activity, event or process occurred for a specified time period.

Goal Card - The document displaying the strategic mission of the organization, along with departmental, team and/or individual goals.

Group cycle time - The rate of completing a group task or objective. It is the total individual’s cycle times added together for a project.

Heijunka (same as Leveling) - The balancing of work amongst the workers during a period of time both by volume and variety.
Heijunka box - A physical device to hold the work units arranged by value streams. Similar to a group of mail boxes.

Histogram - The visual representation that displays the spread and shape of the data distribution.

Individual cycle time - The rate of completion of an individual task or single operation of work; for example, obtaining a credit report for a mortgage application.

In-process supermarket - The control of work units in and out of an area residing between two processes to improve work flow.

Interruption - The stop of a process without notice.

Leveling (same as Heijunka) - The balancing of work amongst the workers during a period of time both by volume and variety.

Just-in-time (JIT) - Synonymous with continuous flow. It is the provision that the process or customer is supplied with the exact product or service with the right amount at the right time.

Kaizen - “Kai” means to "take apart" and "zen" means to “make good”. Kaizen is synonymous with continuous improvement.

Kaizen event - A focused group of individuals dedicated to applying Lean tools to a specific area within a certain time period.

Kanban - A card or visual indicator that serves as a means to communicating to an upstream process precisely what is required at the specified time.

Lean office - The administrative area working systematically to identify and eliminate all waste.

Metric - A specific number (data) that is utilized to measure before and after improvement initiatives.

Meeting information form - The document to effectively manage meetings, detail agendas, and list action items.

Office file system - The arrangement of administrative work such that it is organized and processed quickly.

Office layout - A self-contained, well-occupied space that improves the flow of work and data transactions. This would include software requirements.

Pareto chart - The visual representation in a bar chart format listing issues in descending order of importance.

Passive state - The vertical position of a file folder indicating work has been completed.

Pitch - The adjusted takt time to move work units throughout the value stream.

Predictable output - The assurance that a work unit or service will be exactly what is expected.

Problem solving - A team working together, following a structured process, to remedy a situation that caused a deviation from a norm.

Process - A sequence of tasks (or activities) to deliver a product or service.

Process folder - The specific information and detailed flow for a particular process.

Process mapping - Visual representation of a sequence of operations (tasks) consisting of people, work duties, and transactions that occur for the design and delivery of a product or service.

Process master document - The listing of all processes within a department or value stream.
**Pull** - A system in which nothing is produced by an upstream (supplier process) until the downstream (customer process) signals the need for it. This enables work to flow without detailed schedules.

**Push** - Work is pushed along regardless of need or request.

**Queue times** - The amount of time a work unit or service request must wait until it is released.

**Random arrival** - The interruption of a process by another process or person.

**Red tag** - A label used in the 5S process to identify items that are not needed or are placed in the wrong area.

**Resistance** - The opposition of an idea or concept.

**Root cause** - The origin or source of the problem.

**Runner** - Is a designated function for someone to maintain value stream pitch integrity.

**Scatter and concentration plots** - The visual representation of data to study the possible relationship between one variable and another.

**Set in order** - The second activity in the 5S system. This will ensure items are properly stored and placed in the correct location.

**Shine** - The third activity in the 5S system. This involves cleaning everything thoroughly and ensuring cleaning is part of the audit process.

**Sort** - The first activity in the 5S system. This involves the weeding out of items within the target area that have not been used for a period of time or are not expected to be used.

**Simplified folder system** - A process to ensure work is organized, processed correctly and become a basis for improvement activities.

**Standardize** - The fourth activity in the 5S system. This involves the creation of documents/rules to ensure the first 3S’s will be done regularly (and made visible).

**Standard work** - This is a process to gather the relevant information to document the best practice of producing a work unit or providing for a service. It should be the basis for all continuous improvement activities.

**Standard work combination table** - The visual representation displaying the flow of human work and all the various steps required to complete a process.

**Standard work chart** - The visual representation displaying the sequence, process layout and work units for a process.

**Status report** - The document to detail the team’s progress to date, as well as issues and plan(s) to keep on track.

**Storyboard** - A graphically rich, visual representation of a Lean or problem solving project that displays critical information. Storyboards can be 8.5” x 11” or can be poster size.

**Supermarket** - The system to store a certain level of in-process work or service capacity to be pulled by the downstream customer when there is a difference in the cycle times of the process(es).

**Sustain** - The fifth activity in the 5S system. This involves the process to monitor and ensure adherence to the first 4Ss. Many times this will be a regular audit.

**System folder** - The ‘keeper’ of all pertinent information about the processes within a department or value stream.
Takt time - The pace of customer demand. Takt time determines how fast a process must run to meet customer demand.

Task - A single event within a process.

Team charter - A document detailing the team's mission and deliverable to ensure strategic alignment.

Total cycle time - The rate of completion of a process or group of tasks that have a common element. It is calculated by adding up the individual cycle times for that process or value stream.

Value added reporting log - The document to track the process cycle times.

Value stream - A sequence of processes that are connected by a common customer, product, or service request.

Value stream mapping - The visual representation of the processes (work units and information required) to meet a customer demand.

Visual control - The visual indicators used to ensure a process produces what is expected, and if not, what must happen.

Visual metric - The display of measurements.

Visual office - The ability to convey all relevant information about a product or service by the means of signs, posters, anything that appears to the eye.

Waste - Anything that adds cost or time without adding value. The seven most common wastes are: 1) Overproducing, 2) Waiting, 3) Transport, 4) Overprocessing, 5) Inventory, 6) Motion, and 7) Defects. Many times you will see an eighth waste added, that being 8) People Utilization.

Work load balancing - The distribution of work units across the value stream to meet takt time or pitch.

Work unit - A specific, measurable amount of work that can be segmented and treated as a whole. Examples of work units are: customer order, a report, an e-mail request, or a bank deposit.
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### Instant Suggestion Form

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Contact Name: ______________________________________________

Supervisor Approval: _________________________________________

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LOPG Page Reference: _________________________________________

Anticipated Results: __________________________________________

Improvement Impact on Work Environment: _______________________

180

LEAN OFFICE POCKET GUIDE

INSTANT SUGGESTION FORM

181
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Instant Suggestion Form

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Improvement Impact on Work Environment: ________________________

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Contact Name: _____________________________

Supervisor Approval: _______________________

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INSTANT SUGGESTION FORM

LEAN OFFICE POCKET GUIDE
Instant Suggestion Form
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Supervisor Approval: ________________________

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**Don Tapping, President**  
MCS Media, Inc.  
888 Ridge Road  
Chelsea, MI 48118  
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