



A Lean Office Eliminates Waste and Saves Time

Lean goes way beyond the shop floor.

Higher customer expectations, cost-cutting pressures, thinner margins, and shorter lead times are some of the daily challenges that organizations face. A management system built around lean processes enables companies to achieve operational excellence, while providing flexibility in the way processes are managed. Organizations need robust, waste-free, flexible office processes that meet their customer needs and help them survive in the global marketplace.

Considering that 60 to 80 percent of all costs related to meeting customer demand are administrative or office-related functions, it doesn't take rocket science to conclude that applying lean principles to streamline and eliminate waste from your office and administrative processes will result in bottom-line savings.

The benefits of a lean office

A lean office management system can affect administrative processes at all levels of your organization.

Enterprise-level processes—The processes that touch your external customers and suppliers: order entry, customer service, accounts payable, accounts receivables, marketing/sales, research and development, product development, and distribution. Lean management tools can streamline and speed up these processes.

Organizational-level processes—The key support processes in your organization: information technology, human resources, engineering, and purchasing. Lean will streamline these processes and improve process efficiency.

Department-level activities—Lean reduces activities that add time but little or no value.

It can help create flow at the pull of the customer, reduce hand-offs, and improve departmental quality.

Individual-level tasks—Lean can reduce the paperwork, manual entries, and errors within standardized work procedures; help improve workplace organization; and clarify individual roles and responsibilities.

Getting started

Before applying lean tools to the office environment, we must understand the flow of work. Just as we map the value stream and focus on reducing lead time and eliminating waste in manufacturing, we must map administrative processes to better understand them and eliminate waste.

Processes such as order entry, quoting, planning, purchasing, product development, and others are full of waste. As a matter of fact, 75 to 90 percent of the steps in service and administrative processes add no value—the lean definition of waste. These wasteful steps cause delays and customer dissatisfaction.

Because one of the key principles of lean thinking is to minimize the time between the receipt of a customer order and fulfillment of that order, it's crucial to look at the entire lead time. To see the waste in these processes, we must map them. After we identify the waste (nonvalue-added steps) and what needs to be worked on, we can apply the traditional lean tools such as pull systems, continuous flow, co-location, point-of-use storage, continuous flow, 5S, visual controls, and mistake proofing.

Second, you must collect data. If you are like most organizations, you collect very limited data on your administrative processes. Office lean is not like manufacturing lean—it is based on data-driven decision making. For office and administrative processes, determining what data to include depends on the questions about your value stream you want answered and how you define the product or service

produced by these processes. For example, if your objective is to reduce the number of engineering change orders (ECNs), it would be helpful to define ECNs as the product and identify the total number of ECNs issued, cycle time and queue time for processing, and total cycle time. From this information, you can determine where constraints most likely occur and can eliminate areas of waste in your “future state” process.

Strategies and Solutions for Solving Team Problems

Teams that run smoothly can concentrate on their primary goals

Teams are complicated, complex structures because they are comprised of individuals with different personalities, biases, strengths, and weaknesses. Before people can form into an effective team, they must first learn to work together. Participants must work through personal differences, find strengths to build on, and balance collective commitments against the demands of individual job requirements.

Leaders must deal with team needs that arise from the pressures of personal differences and the demands of the individual jobs apart from the team. Addressing these issues is as important as the team’s task of making organizational improvements. Often both leaders and team members underestimate the need to develop themselves into a cohesive group. Teams that run smoothly can concentrate on their primary goals. Conversely, teams that fail to build internal relationships waste time on internal control conflicts and unfocused efforts.

It is important for leaders to understand that the more they know what to expect as their teams progress, the better equipped they are to handle difficulties and problems as they arise. This knowledge enables leaders to recognize many problems and work through the ones that can’t be avoided. The most obvious team efforts are associated with the task of improving a process or solving a problem. This includes holding meetings, gathering and analyzing data, planning improvements, making changes, and writing reports. However, when individuals are formed into teams, the

complexity of group dynamics seems to inhibit their ability to work well together. The issues associated with group dynamics include hidden problems, concerns, and agendas that create specific undercurrents and distract the team from accomplishing its assigned responsibilities. Some of these undercurrents can be seen in a host of conflicting emotions: the excitement and anxiety of being a part of the team, an individual’s loyalty to his department or division, and a nervous anticipation regarding the team’s success. Left unaddressed, these conflicts can inhibit the team’s effectiveness.

There is a natural tendency to wonder how individuals will fit into a team. When individuals come together for the first time, there is apprehension, anticipation, and questions concerning the value of the team and everyone’s contribution to it. These feelings of uncertainty are greatly reduced for people who have worked together previously on other projects. The issues discussed here are closely associated with these feelings of personal identity.

Leaders must involve their teams in activities that are not directly related to the assigned task, but that build understanding and support within the team. Only in this manner can leaders resolve these internal issues and undercurrents. Some of the common issues encountered by leaders in these areas include:

Membership inclusion. There are basic psychological needs associated with membership inclusion. Individuals have a natural desire to be part of a group and are motivated by a sense of being part of something larger than themselves. Leaders must be concerned about membership inclusion as individuals who feel alienated from the team’s vision and purpose will represent sources of continual conflict until the issue is resolved. Leaders can enhance membership inclusion with the use of team-building activities and assignments that will quickly unify the team and instill a shared desire to work toward mutual goals.

Influence, control, and mutual trust. Much of the apprehension and anticipation of new team members arises from issues of influence, control, and mutual trust. Within new teams, these issues will not be resolved until individual members naturally establish themselves and emerge as leaders and

influencers. Mutual trust will not be obtained until individuals begin to work together and become familiar with each other's personality differences. Deadlines, team pressures, and external crises increase team members' reliance on each other, foster trust, and build team cohesiveness.

Mutual loyalty. This is built upon mutual trust, respect, and cohesiveness. Leaders can utilize these factors by developing and enforcing guidelines and boundaries that establish a foundation on which to operate. Without these guidelines, leaders will discover that individuals tend to dominate and intimidate other team members. Such domineering tendencies will destroy loyalty and trust, and greatly inhibit the team's ability to operate effectively.

Dr. Timothy F. Bednarz

The Incomplete Solution

Every problem model is a mental construct. Unfortunately, this means that the problem "reality" and the problem "model" are not identical. The mental construct of the problem model depends very much on the person constructing the model. This is affected by the person's mental models, heuristics, knowledge, wisdom, and biases. This leads to what is called "the incomplete solution."

The system model must be as close to the actual system as possible. The problem model must be as close to the actual problem as possible. However, this cannot be done. Thus, the problem model is an incomplete construct. Furthermore, the solution must match the problem construct; thus, the solution derived from the incomplete problem model is also incomplete.

The concept that a model of the system is required before regulating it comes from [Roger Conant and Ross Ashby](#), who said: "Every good regulator must be a model of that system."

They identified that "any regulator that is maximally both successful and simple must be isomorphic with the system being regulated. Making a model is thus necessary." [Daniel L. Scholten](#) has stated this in terms of problem and solution as, "Every good solution must be a model of the

problem it solves." And, "Every good key must be a model of the lock it opens." However, humans are terrible at creating accurate models of systems due to limitations of their mental capabilities. This idea was put forward by Herb Simon, the great American thinker who won a Nobel Prize for Economics in 1978, with the concept of "bounded rationality." Wikipedia currently defines [bounded rationality](#) as "the idea that when individuals make decisions, their rationality is limited by the tractability of the decision problem, the cognitive limitations of their minds, and the time available to make the decision." The complete knowledge of all the details, and the consequences of the actions, cannot be known. This indicates that a mental construct of a system is incomplete. This concept is further echoed by the American statistician George Box, who stated in the proceedings of a 1978 statistics workshop, "All models are wrong, but some are useful." And, "Remember that all models are wrong; the practical question is how wrong do they have to be to not be useful?"

The notion of cause-and-effect is paramount in the problem-solving process. However, this idea cannot be as simple as that. One can use the idea of cause and effect to determine the complexity of the system. In an ordered system, the cause-and-effect is direct, and thus a problem statement is very straightforward. For example, turning the switch does not turn the light on, because the bulb is burned out. Replacing the bulb thus solves the problem.

In a complicated system, there are more layers, and the cause-and-effect relationship is not straightforward. However, with the help of experts and solid problem-solving processes, a good solution can be found. There will be several solutions that can work. The ordered and complicated systems use the approach of hard systems. They are deterministic in nature. An example of a complicated system might be the entire electrical wiring in a house. The cause-and-effect relationship may not be direct for the inexperienced, but it can be established. In the manufacturing world, the processes can be ordered or complicated, and there is a desire for high predictability from their operations.

In a complex system, there are several interwoven parts that make the cause-and-effect relationships murky. There are

definitely no linear, cause-and-effect relationships. Here the hard-systems approach cannot be used. Moreover, the problems in a complex system might be messy. One problem is most likely linked to other problems. Russell Ackoff, the great American systems thinker, called this a mess. Ackoff said, "Managers are not confronted with problems that are independent of each other, but with dynamic situations that consist of complex systems of changing problems that interact with each other. I call such situations messes. Problems are abstractions extracted from messes by analysis; they are to messes as atoms are to tables and charts.... Managers do not solve problems; they manage messes."

Thus, focusing on one problem may not show the whole picture. There can be hidden portions not visible to the team.

In ordered and complicated systems, the incomplete solutions may be adequate. In complex systems, this can have unintended consequences. Hard systems are based on a paradigm for optimization, whereas soft systems embrace a paradigm of learning. A good reference quote for this concept is from Dwight D. Eisenhower, who said, "In preparing for battle, I have always found that plans are useless, but planning is indispensable."

Incomplete solutions may be adequate in systems where the cause-and-effect relationships are linear and direct. However, in systems where the cause-and-effect relationships are murky and nonlinear, incomplete solutions can have unintended consequences. Moreover, this detrimental impact may not be understood even in hindsight.

Some of the ways we can improve our system models are to:

- Involve the people close to the system
- Go to the *gemba*
- Encourage opposing and diverse worldviews and perspectives
- Understand that the solutions are incomplete, and thus never "done"
- Build in feedback systems
- Encourage diversity
- Understand long-term thinking
- Understand that the complexity of the solution must match the complexity of the problem. Using a simple checklist or more training as the solution for a complex

problem will not work.

- Not go for shortcuts and fast solutions (silver bullets). In some regards, this also explains why silver bullets do not exist. Simply copying and pasting methods (e.g., lean, Six Sigma) without understanding your systems and their problems do not work. It can actually cause more harm in the long run.
 - Understand the cause-and-effect relationships
 - Stay curious and always keep on learning
- The corollary to the incomplete solution is that there is almost always a better solution than the one on hand. Thus, there is always room for improvement.
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Lean Tips:

Allow employees to suggest better ways of getting their jobs done.

Ask for employee suggestions for other ways of getting the task or project accomplished. Listen and be willing to really hear the employees' comments. Employees hate to have no input and be told exactly how to perform their jobs, leaving no creativity.

Show you have trust in your employees.

Allow them to make mistakes as a form of learning. Show that it is really OK to make mistakes. Trust that people have the right intentions and will make the right decisions, even if they are different than your own. Let them know you really support their decisions.

Encourage and reward improvement and innovation.

Employees may be afraid to offer insight and new ways of doing things because the company culture doesn't support them. If you really want to empower employees, you'll need to create a company culture that encourages and rewards innovation. You may start by asking individuals to look for ways to improve efficiency, output, safety, etc. in the tasks they perform every day.

Design and Hold Informal Learning Opportunities

People are engaged less by formal training courses and more by experiences that enable them to grow. Setup a mentorship program or a formalized job rotation schedule to enable people to gain exposure, experiences and relationships outside their department.