

Building a Lean Enterprise Culture

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Abstract

A successful lean transformation involves much more than moving machines around on the shop floor and making technical changes necessary to reduce waste. Experienced lean manufacturing implementers understand that it is easier to initiate changes to reduce waste than to sustain them with continuous improvement. The major factor in sustaining a lean transformation is cultural: building the standards and norms that shape the way people think about their work, the way they identify and solve problems, the way they interact with others, the way performance is managed and measured, and the many other aspects of behavior that must be aligned for continuous improvement. Building a lean enterprise is more cultural than technical.

A lean enterprise culture is designed to harness and utilize the full brainpower of the organization for continuous improvement. This means getting everyone in the organization actively pursuing answers to the continuous improvement question: “How can we do a better job?” The next step is applying this question to all business activities. In a lean enterprise, managers and supervisors become facilitators. They communicate the vision, help teams find answers to the continuous improvement question, and find the resources necessary to succeed. Workers are organized into teams, each working on the continuous improvement question in a specific area.

The culture-change model presented here has been developed, tested, implemented and published by the Wisconsin Manufacturing Extension Partnership (WMEP). Historically, WMEP had worked with many companies to develop value added/lean manufacturing systems. Repeated experiences indicated a need for a process to help manufacturers sustain improvements. *Building a Lean Enterprise Culture* was developed to facilitate the cultural changes necessary for sustained improvements. Implementations in a variety of manufacturing settings have produced results in several areas: reduced worker turnover, increased value added per employee, improved leadership, and enhanced strategic thinking.

1. Introduction

The transition from a traditional manufacturing business to a lean enterprise involves many changes. Set-backs sometimes come with the technical changes implemented to eliminate waste in production processes and sometimes people think the changes will not last. Leaders of successful lean enterprises know that becoming a lean enterprise must be a long-term commitment to continuous improvement and achieving perfection. This commitment is expressed in the organizational culture — the policies, practices, and language that shape the behavior of workers at all levels. A lean culture addresses not only the seven manufacturing wastes of overproduction, excess inventory, defects, non value-added processing, waiting, excess motion, and transportation, it also addresses the critical eighth waste of underutilized people. This is the defining feature of a lean enterprise culture – manufacturing wastes are abridged through the collective expertise of everyone in the organization.

A lean enterprise culture is defined by the following qualities:

- Stays focused on the customer
- Is totally committed to continuous improvement
- Encourages all workers to contribute improvement ideas, often expecting each person to contribute at least one idea per week
- Quickly responds to all suggestions for improvement, implementing as many as possible, with participation by the person who suggested the idea. Suggestions that are not implemented are responded to quickly as well, along with information about why they are not implemented
- Encourages all members to be problem-solvers and experimenters, giving recognition for successes, realizing that not all experiments are successful, and much can be learned from failed experiments

- Communicates a vision for the company to all members, so that everyone is clear about where the company is going and how it will get there
- Enjoys the visible support of all leaders, especially managers and supervisors
- Makes sure that all members know their part in making the organization successful, with clear standards and expectations
- Works to help everyone keep learning and getting better, through training and coaching
- Uses work teams and project teams to search for and implement improvement ideas.
- Seeks perfection in its products, services, and processes

Through repeated experiences with manufacturers, we know that Lean transformations are not sustainable unless the new behaviors implemented are consistent with a new set of beliefs and assumptions. After the consultants are gone and different challenges arise, people in the transformed organization go unconsciously to their belief bin and sort around for tools they feel will solve problems. If we do not at least indirectly confront their prior beliefs, help them to conclude that the beliefs do not reflect current reality, and help them form a new set of more appropriate beliefs and assumptions, they will fall back on the old, failed beliefs and the linked dysfunctional behaviors with which they are familiar. People want to succeed and if there is risk, they are likely to use old approaches rather than someone else's great, new idea which does not flow out of their beliefs. This is not being obstinate; it is rather a sincere desire to be competent by using what they believe is most likely to have predictable results. It is akin to telling someone what not to eat and what new foods and smaller portions to use without first having them conclude that they really want and need to lose weight.

A lean enterprise culture embodies a learning organization – with the goal of continuous improvement. This requires a shared desire to constantly find ways to improve, along with enterprise-wide research skills that enable everyone to generate learnings from problems identified and solved. Lean culture also demands leaders that understand the benefits of challenging and empowering the entire workforce to participate in continuous improvement. Further, a lean culture organizes workers in teams of various types to find ways to constantly improve processes in every business activity.

2. A Learning Organization

In a learning organization, everything – successes as well as failures – is considered a learning opportunity. A lean organization is structured around this assumption, beginning with a strong commitment to training for people at all levels. A balanced training program includes skill development in manufacturing methods, in using tools for team effectiveness, and in empowering leadership.

The continuous improvement question: “How can we do a better job?” permeates the conversation in every business activity of a learning organization. It is best addressed following another question: “What are the signs of progress?” By first addressing our strengths, we put our problems in perspective, and we gain momentum for our successes, which often get overlooked when focusing on solving problems. A learning organization seeks to understand the root causes of successes as well as problems. This implies the need for well-developed learning methods, based on an understanding of adult learning principles.

To change corporate culture, the organization must commit to continuous focus on the three domains of learning: behavioral, cognitive, and affective. [1] In the behavioral domain, we develop team skills, leadership skills, and the ability to implement standardized work processes. These skills must be practiced and constantly reinforced until they become self-reinforcing. The cognitive domain covers the technical and knowledge-based skills that form the basis for achieving and sustaining measurable improvements, along with an understanding of the importance of working from root causes as the basis for improvements. The affective domain refers to the beliefs that underlie behaviors at all levels; many traditional beliefs and assumptions must be replaced with a belief system that supports the culture of a lean enterprise. (See section 4)

3. Indicators of Lean Culture

Behaviorally expressed indicators of culture are easily identifiable to the serious observer, and can be the subject of a beneficial discussion among members of any organization. A useful guide for such a discussion is the self-assessment instrument *How Lean is Your Culture?* Eight areas of individual and organizational behavior are used to explore, discuss, and assess the indicators of a lean culture: communication, problem solving/decision making, teams, vision/business strategy, performance measures, recognition, conflict, and alignment. Each area of behavior is driven by a set of assumptions and values, which provide the educational keys to organizational transformation.

3.1 Communication

Table 1. Communication

Our company only has crisis communication - Top down	People are informed about what management thinks they need to know	People are well informed and they freely inform others
Traditional Behaviors and Assumptions	Lean Culture Behaviors and Assumptions	
<ul style="list-style-type: none"> • Owner(s) are the only one who need to know • People are chastised • “Shut up and do it” • Workers role is to follow orders • Blame oriented • “Ready--fire--aim” • Information shared on a need-to-know basis only • Silo information mentality • People can't be trusted with information 	<ul style="list-style-type: none"> • Everyone has useful information • Easily accessible information • Everyone can question anything • People can be trusted with information • Information flow in omni-directional • Financial information is freely shared • Shared information from all levels produces better results and alignment • Mistakes are viewed as learning opportunities 	

3.2 Problem Solving And Decision Making

Table 2. Problem Solving and Decision Making

Managers identify problems and solutions	Everyone identifies problems; managers make decisions	Everyone identifies and solves problems
Traditional Behaviors and Assumptions	Lean Culture Behaviors and Assumptions	
<ul style="list-style-type: none"> • Managers/supervisors assume they know the whole “story” • No faith shown in the ability of others to make the right decisions • Input might be solicited but then is not used • Recognition not given for solutions coming up from lower levels of the organization • Ineffective process used in data gathering 	<ul style="list-style-type: none"> • Team approach used for problem-solving • Brainstorming used frequently in looking for possible solutions • Input solicited at all levels particularly from those in the affected areas • Recognition given to those contributing to the process • Cross-functional teams are involved in the policy-making process 	

3.3 Teams

Table 3. Teams

Managers assign individual jobs	Managers appoint teams for special projects	Cross-functional teams are empowered to identify problems and take action				
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3.4 Vision/Business Strategy

Table 4. Vision/Business Strategy

Our vision is known only by a select few leaders	Our vision is communicated, but isn't well understood or supported	Our people know how the business is performing in relation to the vision				
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3.5 Performance Measures

Table 5. Performance Measures

We measure individual efficiency	We measure individual performance and contributions to the organization	We measure team accomplishments				
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3.6 Recognition

Table 6. Recognition

Our people are paid for their work; that’s enough recognition	Our people are recognized for exceptional behaviors only	Our people are recognized and praised freely at all levels
Traditional Behaviors and Assumptions		Lean Culture Behaviors and Assumptions
<ul style="list-style-type: none"> • People receive only negative feedback • “No news is good news” (only problems/concerns are communicated) • Feedback/recognition are very infrequent 		<ul style="list-style-type: none"> • Teams and individuals are recognized for progress achieved toward organizational goals • Peer-to-peer recognition freely occurs • Recognition is timely and specific, delivered in positive manner • Recognition occurs on regular basis as daily situation warrants it

3.7 Conflict

Table 8. Conflict

We avoid or ignore conflict until it explodes	We usually focus on blaming the person instead of correcting the process	We welcome conflict as an opportunity for improvement, and use a process for resolution and prevention
Traditional Behaviors and Assumptions		Lean Culture Behaviors and Assumptions
<ul style="list-style-type: none"> • Conflict viewed as a negative occurrence, inhibiting open and honest communication • People do not understand value of differing points of view that lead to conflict • Lack of understanding of how to deal with conflict, so conflicts are avoided 		<ul style="list-style-type: none"> • Conflict viewed as an opportunity for improvement • People welcome the opportunity to discuss differing viewpoints and process differing ideas • People skilled at expressing differing viewpoints in constructive manner and processing them to achieve a win-win approach to situations

3.8 Alignment

Table 8. Alignment

Each person and unit in our company tries to succeed separately	We functional interdependently	Everyone’s priorities and actions are consistent with enterprise goals
Traditional Behaviors and Assumptions		Lean Culture Behaviors and Assumptions
<ul style="list-style-type: none"> • Each person operates individually • Lack of understanding of how individual efforts affect other areas and organizational performance • People are concerned about and focused on optimizing their “sphere of influence” • People are focused on “I” instead of “we” 		<ul style="list-style-type: none"> • Each person has a clear understanding of how they need to support the organization’s goals • Everyone has a clear understanding of results expected by internal and external customers to realize organizational goals • People operate effectively as members of a larger group as they understand results and behaviors needed to support larger organization goals • Team members’ priorities support achievement of organizational goals

4. Beliefs and Assumptions that Support Lean Culture

Culture is an expression of the beliefs and assumptions that drive behaviors. These beliefs are often implicit, and can be very different at the various organizational levels. Since they are often implicit, an important step in modifying beliefs is to identify those which underlie current behaviors. Organizational stakeholders can then critically and intentionally develop an alternative system of beliefs that support the lean transformation. Once articulated, these beliefs form the basis for training, measurements, organizational structure, and performance management.

4.1 Ownership Beliefs & Assumptions

Table 9. Ownership Beliefs and Assumptions

Traditional Culture	Lean Culture
<ul style="list-style-type: none"> • I should know how to manage people and I'm embarrassed to ask for help in improving • I have been successful in the past and therefore the methods I use should be retained • Our business and situation is unique so the methods used by others won't work here • Since I am in charge, it is my responsibility to tell everyone what they should do and how they should do it • Everyone in my company knows what I worry about and why I make the decisions I do • I should know how to plan, prioritize, and measure what is important in my business and would be embarrassed to ask for help in improving • I can ensure success by having separate, specific measures (or MBOs) for each unit to achieve accountability 	<ul style="list-style-type: none"> • Our success depends upon harnessing all the varied capabilities and experience of people who work here • Customer focus will show us the next improvements and changes we need to make to remain competitive • We can and should learn from the experiences of others, adapting their approaches to our needs and priorities • It is my responsibility to tell everyone what our customers value and where we are trying to go so they can help • One of my main responsibilities is to remove obstacles to our people being able to improve how we do things • Overall enterprise and customer-focused measures should be known and used to drive our behavior and improvement

4.2 Supervisors/Middle Management Beliefs & Assumptions

Table 10. Supervisors/Middle Management Beliefs and Assumptions

Traditional Culture	Lean Culture
<ul style="list-style-type: none"> • I should know how to manage people and am embarrassed to ask for help in improving • I have been successful in the past and therefore the methods I use should be retained • What I do is unique so the methods used by others won't work for me • Since I am in charge, it is my responsibility to tell those I supervise what they should do and how they should do it • My people know what I worry about and why I make the decisions I do • I should know how to plan, prioritize, and measure what is important in my unit and would be embarrassed to ask for help in improving • Our unit's welfare depends upon not appearing to be responsible for failures so we need to look after ourselves and other units will have to be on their own 	<ul style="list-style-type: none"> • My unit's success depends upon harnessing all the varied capabilities and experience of people who work in it • Internal and external customer focus will show us the next improvements and changes we need to make to remain competitive • We can and should learn from the experiences of others, adapting their approaches to our needs and priorities • It is my responsibility to tell everyone what the customers value and where we are trying to go so they can help • One of my main responsibilities is to remove obstacles to our people being able to improve how we do things • I need to help my people understand that we need to do what makes the whole business succeed, even if it means doing what seems inefficient in our unit

4.3 Workers (office & shop floor) Beliefs & Assumptions

Table 11. Workers (office & shop floor) Beliefs and Assumptions

Traditional Culture	Lean Culture
<ul style="list-style-type: none"> • I should know how to do my work and am embarrassed to ask for help in improving • I have been successful in the past and therefore the methods I use should be retained • What I do is unique so the methods used by others won't work for me • It is the boss's job to tell us what to do and my job is to just do it the best I can • The bosses don't care what I think and would feel threatened if I suggested a better way to do things • I am better off just struggling along with things that don't work than making waves by complaining • My value and job security lies in my skill and knowledge so I put myself at risk if I share that knowledge 	<ul style="list-style-type: none"> • My success and job security depends upon harnessing all the varied capabilities and experience of people who work here • Customer focus will show us the next improvements and changes we need to make to remain competitive • I can and should learn from the experiences of others, adapting their approaches to our needs and priorities • It is my responsibility to not only do the work but to also see the bigger picture and participate to help other units and the company succeed • We need to share knowledge and use the best available approach for everything if we are to succeed

5. Leadership for a Lean Culture

Leadership comes from many people in a lean enterprise, but it starts at the top. Owners and senior leaders are managers of the vision and values of the organization, setting the tone for employee involvement and empowerment. They understand that an empowered work force, in which employees and teams have the skills, knowledge, and authority to act on behalf of their customer, show increased productivity results. [2] This program uses the term *leadership* in lieu of *manager* and *supervisor* to express the different roles and functions of leaders in a lean culture. Since vision drives everything, senior managers need to articulate a vision for the future and communicate it throughout the organization in a way that everyone understands it in relation to their jobs. Just as lean manufacturing schedules use customers' pull, a well-communicated vision pulls the business culture into lean. The Lean enterprise is based on a vision for the business that describes where the organization is headed and what it intends to be. The vision is a statement of the future that would not happen by itself, and states the basic characteristics that shape the organization's future. The vision provides a basic answer to the question: "How are we growing the business?"

Once a vision is communicated, the company can build a consensus for ground rules that support the vision. The lean enterprise, like all organizations, operates according to *ground rules*, whether they are discussed or written. Part of learning how to work effectively in an organization is to learn what is expected: "What's cool and what's not!"

Ground rules, or organizational norms, are the standards of behavior that are *expected* from members. Ground rules enable the group to evaluate and influence member behavior. Highly effective teams make sure the ground rules are discussed and agreed upon, so members can contribute freely without having to spend time and energy trying to figure out what is expected. An effective way to foster a continuous improvement culture is to establish explicit ground rules that encourage behaviors to support the vision.

Alignment is another important function for senior leaders. When organizational structure, management systems, measurements, and incentives are aligned with the vision, the organization is focusing its resources in a synergistic way. This is true for a traditional culture as well as a lean one. When these functions are aligned for a lean culture, continuous improvement behaviors are supported.

Empowering leadership behaviors are essential to a successful lean transformation. At all levels leaders must learn to lead by facilitating, coaching, and educating; the goal is to respect and increase the collective expertise of everyone in the enterprise. Empowering leadership behaviors can be taught and reinforced in many ways. They can be measured at several levels.

5.1. Leadership Behaviors in the Lean Enterprise

- Establish clear standards and expectations
- Support continuous learning for everyone in the organization
- Actively seek continuous learning
- Respect and use the expertise of everyone
- Encourage risk-taking to test improvement ideas; recognize that failure is a part of the learning process
- Use Lean to improve the way people do their jobs not to reduce the number of jobs
- Recognize that continuous improvement is essential to preserving jobs
- Equitably share gains from Lean improvements
- Recognize that change provides opportunities for improvement
- Communications
- Use teams to implement all improvement ideas
- Recognize that every worker's input is critical to the success of the enterprise
- Create and support a problem-solving environment for all employees
- Assure that all decisions are driven by the vision of the organization

5.2. Key Performance Indicators for Senior Leaders

- Clearly communicating the vision
- Exhibit behavior consistently corresponding with the vision
- Actively lead the transition to lean and effectively deal with contradictions between the old and new ways (measures and assumptions)
- Express well-articulated strategies that support and define the next layer of detail of the vision
- Develop tactics and action plans layered and aligned with strategy, vision, and goals
- Evaluate leaders based on performance appraisal that are aligned with expected new behaviors
- Supplant old system with new and have measurement/evaluation/approval system to audit
- Show commitment to continuous learning within in their roles
- Clearly communicate that continuous improvement is as important as current production (shown by allocation of resources)
- Make all needed changes to align measures, incentives, organizational structure, and management behaviors
- Establish and support measures & new assumptions that are supportive of enterprise-wide performance

5.3. Key Performance Indicators for Supervisors/Work Team Leaders

- Number of employees cross-trained
- Number of continuous improvement (CI) projects completed
- Number of people involved in CI project activity
- Level of involvement of people from other areas when you are making changes that affect them
- Team members understand visual measures
- Translation of organizational goals for work team
- Improvement in measures
- Activities to support goals

Team Activities

- Removes of team-identified barriers to improvement
- Obtaining information and resources for the team
- Asks questions vs. providing solutions/directions
- Provides access to relevant data
- Makes sure action items are visible and monitored
- Enforces broad participation of team members in action items
- Rotates responsibilities among team members for team roles
- Provides timely and appropriate recognition for individual and teams
- Facilitates individuals and the team's ability to analyze, evaluate, and understand experiences
- Helps people understand the difference between a problem and a conundrum
- Keeps track of the number of hours people are in training

- Creates an environment that encourages participation and risk-taking (number of team-generated improvement activities – both successful and not)
- Keeps track of the number of recurring problems that are controllable within the team
- Creates a team plan for self-management
- Judges the ability of team to manage for daily results, allowing leader to take a proactive role in operational improvement
- Conveys clear, complete, & honest picture of the present & future of the enterprise

6. Teams – Organizing for a Lean Culture

The lean enterprise builds an empowered work force to create a high-performance organization in which employees and teams are given the skills, knowledge, and authority to act on behalf of their customer – both external and internal – without prior approval. The culture-change process is organized around teams of several types:

6.1. Core Leadership Team

The Core Leadership Team consists of leaders from all areas of the company, including union leaders in represented companies. The core team provides leadership to implement systems and practices that build an empowered workforce. Functions of the core team include:

- Articulates and communicates the vision to be sure everyone understands it
- Establishes a clear accountability for managers, supervisors, and other leaders to increase employee participation in improvement activities
- Establishes performance management systems to empower employees at all levels
- Aligns management style, organizational structure, measurements, and incentives with the vision
- Works with the steering team to quickly respond to improvement suggestions, connect teams to the management structure, and provide resources for team improvement projects.
- Removes roadblocks to employee involvement in improvement activities

6.2. Continuous Improvement Steering Team

The steering team builds active employee involvement in continuous improvement projects that consider every aspect of the business, with the goal of perfection. Members of the team represent the entire organization, across functions and levels; membership revolves on a regular basis. The Steering Team looks for opportunities to solicit ideas for improvement and charters short-term project teams to test new ideas and implement successful ones. The steering team has the goal of getting everyone in the enterprise involved in improvement activities.

6.3. Project Teams

Temporary project teams are formed to find solutions to specific problems, test improvement ideas, and implement improvement projects. Teams can be formed for a few days, several weeks, or longer, depending on the project. Each team is chartered for a focused, time-limited project, with specific expected results. A dynamic lean culture is characterized by forming numerous project teams, which are recognized and dismissed as their projects are completed.

6.4. Work Teams

Work teams are work units that accept responsibility for continuous improvement in their assigned work area – such as a manufacturing cell – and are actively responsible for producing results. As natural work units, these teams embody the learning organization, identifying improvement opportunities, testing ideas, implementing improvements, measuring and stabilizing results, and then improving again.

7. Conclusion

When a company commits the resources to building a culture that supports lean manufacturing improvements, there are many positive results. A culture transformation that is built on a learning organization, promotes empowering leadership behaviors, and uses empowered work teams to provide many tangible benefits to the organization, including:

- Retaining good employees
- Improving bottom-line results
- Making improvements sustainable
- Focusing on continuous improvement, with a goal of perfection.

References

1. Bloom, B.S., Hastings, J.T., Madans, G.F., Handbook of Formative and Summative Evaluation of Student Learning, McGraw-Hill, New York. 1971
2. Hernan, Patrick, "The Untrained, Unempowered Masses", *Industry Week*, Dec. 6, 1999

Biographical Sketches

Sam Miller is a Manufacturing Specialist with Wisconsin Manufacturing Extension Partnership. Prior to joining WMEP, for 25 years he was principal of Miller Consulting Group, with services in leadership development, culture change, production improvement, and team development. He has served on faculties at University of Minnesota, Metropolitan State University, Antioch University, Pepperdine University, College of the Sequoias, and Porterville College. He has published several books in areas of Team Effectiveness, Culture Change, and Leadership. He coordinated the development and implementation of WMEP products to facilitate culture change that supports lean production initiatives: Building a Lean Enterprise Culture and Building Teams for the Lean Enterprise.

Maureen Brom has over 24 years of diversified experience in manufacturing assembly, production control/procurement, and operations. Maureen has a Bachelor of Arts in Business Management from Alverno College. While at Eaton Corporation, she participated in the development and deployment of Empowerment Workshops and Continuous Flow Manufacturing Workshops for more than four hundred factory and office employees. During the last 3 years with WMEP, Maureen's work with manufacturers has focused greatly on the administration and follow up of employee feedback surveys, assistance in the establishment of team environments, and helping companies in the transformation to a culture that supports the Lean Enterprise.

Jim Houge has experience in the medical device and aerospace industries, doing extensive work in biomedical sensor systems and patient monitoring equipment. He worked in product and process development for mechanical and electronic systems and products. Jim has served as an expert witness and a consultant and member of the FDA standards committees in development of regulatory standards for cardiac pacemakers and electrosurgical units. Jim also served as director of the Instrumentation Systems Center at UW-Madison College of Engineering. The center did design/build work for one-of-a-kind research equipment and instrumentation systems, including an ultraviolet telescope, which flew successfully 3 times on the space shuttle. Jim has done manufacturing outreach work with the College of Engineering since 1994, working with more than 100 small & medium manufacturers, making both components and proprietary products. He holds a bachelor's degree in mechanical engineering and a master's degree in electrical engineering and has 25 years of experience as a project manager, staff engineer and chief engineer and is a Registered Professional Engineer in Wisconsin.