



Lean Learning Center

*Developing leaders and learners
for lean transformation*

CONNECTING LEAN AND ORGANIZATIONAL LEARNING

...and its impact on the transformation of Ross Controls

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Ideas and movements aimed at changing the business world come and go faster than magazines can report them and companies can adopt them. There have only been a few that have lasted more than a few years. What is it about movements and initiatives that determine whether they last or they just fade away?

There are probably many reasons worth exploring, but I will only say that while some movements are depleted as soon as they are implemented, others create a reinforcing pattern that builds on itself, becoming stronger and more ingrained . . . a pattern that is unaffected by changing desires in the marketplace; instead helping people deal with this change.

WHERE LEAN AND ORGANIZATIONAL LEARNING MEET

Two movements that have lasted over time are lean, or lean manufacturing, and organizational learning. Lean, although it has continued to shift and morph, began as a concept that migrated from company to company in the 1950s, with historical roots well before that. Organizational learning was born in the 1950s, began to get organized in the 1980s, and became the language of every businessperson after the 1990 release of “The Fifth Discipline” by Peter Senge.

What is most interesting about these two movements is their point of intersection. There are many, many companies that adhere to both lean and organizational learning, but view them as distinct, disconnected initiatives. Some companies link them together, but only in terms of their

respective resource pools and budgets. Looking at the intersection of both movements, I believe there are ways to unlock the potential in both. Lean has, in general, been misunderstood, narrowly focused and unsustainable. Organizational learning has often been limited to changed behavior only during facilitation, meeting resistance to becoming part of the everyday corporation. The excitement about both movements comes from their tremendous potential. The frustration comes from that potential remaining unrealized.

In order to explore their intersection, we must return to one of the fundamental frameworks of organizational learning. Vision drives mental models, affects systemic structures, and determines patterns of behavior which result in the events that we see. This framework presents a hypothesis that there is greater leverage for change to closer to vision, and the further from reacting to events. Despite the lessons of this framework, there is still a dominant behavior of reacting to events and living primarily at that level.

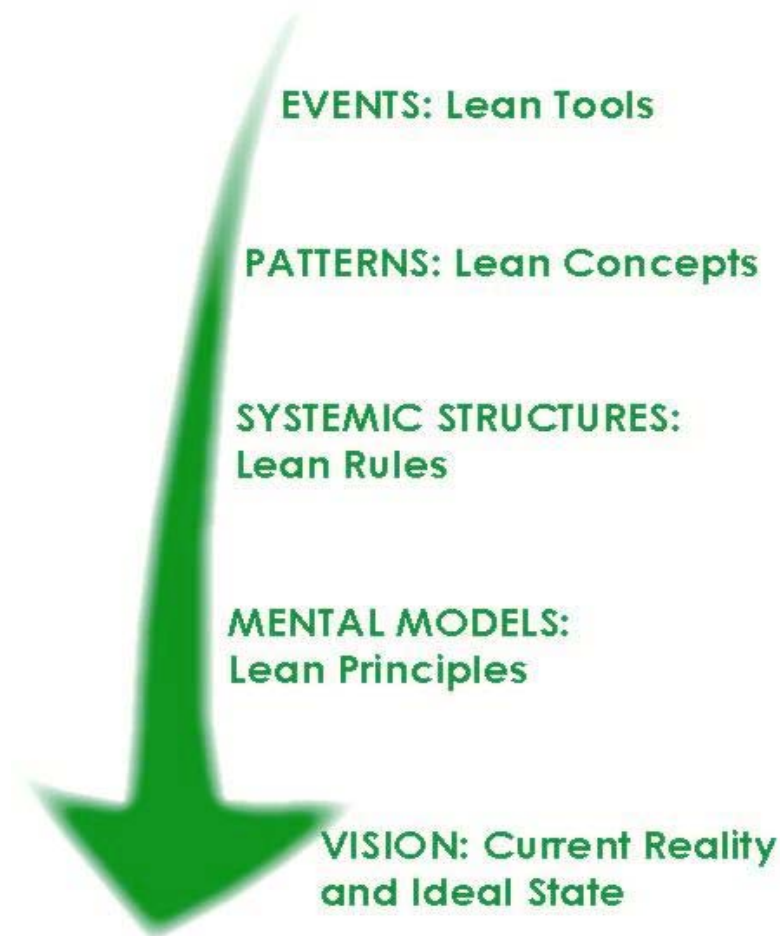
Many organizational learning change efforts reveal this framework in the spirit of creating "systems thinkers." Upon examination, however, this is done without specific methods, tools or rules of HOW. The result is that people simply claim their own "good idea" in the name of systems thinking lending it false credibility. Therefore, while peoples' eyes are opened to the possibility demonstrated within this framework, the change in performance or behavior is often in word only.

Turning quickly to the realm of lean, lean transformation, lean manufacturing or whatever other derivative phrase you may use, most every effort and almost all articles and teaching limit lean to

a set of patterns and events. Events come mostly in the form of solutions such as andon systems, work cells, error-proofing or kanban. These solutions fit certain problems or needs, but only affect the events level of the company. By moving one step up in leverage, we can see patterns of behavior that are expected through lean such as continuous flow, just-in-time and continuous improvement. Lean improvement efforts across companies and industries begin and end at this level of the framework. This is so common across companies because events such as the application of a lean tool are so visible, it is hard not to focus your attention there.

For years, companies like Chrysler and General Motors would visit the birthplace of lean – Toyota - and walk through their plants looking for the answer to why Toyota was beating them in every category. They may see something like the andon cord, a simple cable strung overhead of the workers. When a worker had a problem, they would pull the cord, triggering music and an indicator light. A team leader would immediately show up to support the worker in resolving the problem. Seeing this tool and knowing it was vastly different from how their plants operated drew the attention of automotive executives, leading to a strong push to install the same andon cord in their plants. The effort failed, not because they misunderstood the tool, not because their workers were union members, not because their factories were older, but because the tool was out of place. There was something missing, and it wasn't just other lean tools. The effort at transformation was missing an intangible element– if we're to fix the problem we must make the intangible tangible.

THE NEXT LEVEL



If we make the leap suggested by the organizational learning framework, in the figure to the left, we start examining lean through the lens of systemic structures, mental models and vision. If we climb one rung in leverage into systemic structures, we should ask "what do lean systemic structures look like?" This answer comes from research by Harvard Professors H. Kent Bowen and Steven Spears.

Through "in the trenches" research at Toyota and other companies, the professors were able to codify the "rules" that true Toyota Production System-thinkers use when designing, operating or improving their systems. These four rules are shown here, although they have been modified for ease of understanding and memorization:

1. Structure every ACTIVITY
2. Clearly CONNECT every customer - supplier
3. Specify and simplify every FLOW path.
4. IMPROVE through experimentation at the lowest level possible towards the ideal state.

These rules have many purposes, but most simply, they provide the organization guidance when designing or improving systems. For some this helps explain the "why" behind the tools. For others the rules help create new tools or solutions. And still for others it is the litmus test to evaluate and judge certain improvement ideas. These rules are a major contribution to the understanding of lean and help us move up one more step in the leverage hierarchy into systemic structures.

MENTAL MODELS OF LEAN

The next rung on the hierarchy of leverage is mental models. Put most simply, mental models are the principles or beliefs upon which we think, make decisions and view the world. While the rules help us design better business systems, we also need mental models to help us with the people systems. In regards to lean, this is defined by five principles:

1. Directly observe work as activities, connections and flows.

This principle affects how we see the world. Do we seek to understand our current reality by looking at results and measures or do we seek a peek at the actual systems that drove that performance? We see the car in front of us but do not recognize the flow of traffic. We pay our bill without attention to the flow of information of which we are just one piece. The ability to see the systems behind the events is not a natural ability, but lean leaders must think in these terms and see the world through a different lens.

2. Systematic waste elimination.

We must view value through the customers' eyes and recognize everything else as waste. The ability and relentless drive to eliminate waste on a daily basis is what sets lean systems thinkers

apart. Combined with the first principles, this means digging below the surface to find the causes of waste and working to eliminate them. Recognizing that waste will continue to reenter our processes and organizations is important as waste elimination must be a constant effort.

3. *Establish high agreement of both what and how.*

Every company seeks high agreement of the “whats” (goals, objectives, measures, strategies), but only the best focus most their energies at every level on defining a clear and common “how” to execute these objectives. Having this mental model means that people value having a common process more than they value doing things whichever way they like. Without a common process, there is no platform on which to build continuous improvement and leverage the collective creativity of the organization.

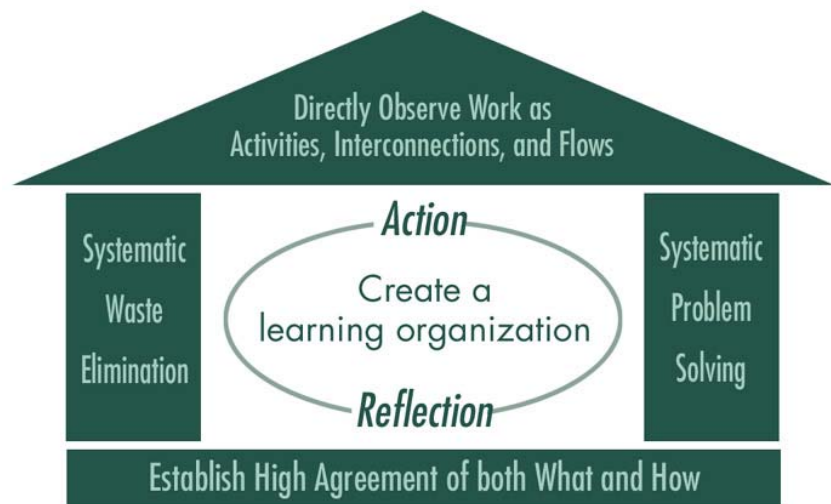
4. *Systematic problem solving.*

Every individual needs to be engaged in structured problem solving by viewing problems as opportunities for improvement and by examining the root cause through systemic solutions, leveraging the four rules. Problems exist – it is our view of their importance and how we react to them that will make a difference. By redefining problems as gaps from our ideal state and high agreement, we seek to solve problems sooner and more frequently rather than battle with them when they become large, looming and institutionalized.

5. *Create a learning organization.*

This is an obvious link to organizational learning, but it does not represent everything that organizational learning is known to be. It is focused on building *reflection* into everything that is done. Reflection does not have to be complex, but requires at least pausing long enough to ask “is our current thinking and systems getting to where we want to go?” This requires daily effort and frequent use of the question “why.”

Making the leap to lean mental models requires a very different kind of leadership and different approach to implementation than if you were just implementing tools. The



importance of changing principles is under appreciated. The reason is that we can all live the principles we are told to live or want to live when times are good and challenges are few. It is only when a crisis or challenge hits that our true internal principles are surfaced.

Regardless of how strong a lean tool box is or how effective systems are, any one with a set of mismatching principles can overcome them. Consider the scenario where you are in your car. You have all of the tools at your disposal - a working, easy-to-read speedometer, a clear windshield with an accurate view of the speed limit sign, a smooth accelerator pedal and even cruise control. Yet, despite all of these tools and a system which includes heavy penalties for not using the tools to your full advantage, if the principles of the driver are inconsistent with the correct use of those tools, there is very little chance we will find that individual on the low side of the speed limit.

In a lean transformation, this surfaces in two ways. First, there are some lean tools that support the pattern of “pull” which simply means that activities, production or otherwise, are completed

based on clear signals from the immediate customer and their needs, instead of trigger by a schedule, a forecast or someone driving local efficiencies. As a simple example, if an area manager doesn't internalize the principles of high agreement and systematic waste elimination, she is not likely to adhere to those tools and will overproduce when faced with meeting a monthly target. Second, the manager, without internalizing the new principles, will not build on the tools already in place to take them to the next level, and she will continually need guidance and incentive to move the organization forward.

A lean transformation that does not seek to develop a new set of principles in the organization will suffer only temporary gains, and sometimes none at all. By internalizing the principles, an organization can cut its own swath and not be dependent upon following others.

THE IDEAL STATE

The last connection to the framework is the vision. Vision in a truly lean company is driven, on a daily basis, by the pursuit of the ideal state. You may use different words for your particular organization or industry, but a generic ideal state is "delivering what the customer wants, when they want it, at the price they want, with zero waste and where everyone is safe." The pursuit of the ideal state is a common trait among the most consistently successful companies. This means that even when you have met your goal or even become best-in-class, you do not stop because you are driven by the never-ending quest for perfection. World-class is a common goal or vision for many companies, but often comes with the mistaken idea that the second you become #1 you can stop, or even let off the throttle.

At companies driven by the search for an ideal state, you don't measure yourself against your competition, but against your ideal state which is a target that never moves and which everyone can align themselves around.

PUTTING THE PIECES TOGETHER

By combining the framework from organizational learning with the understanding of what lean is really about allows both initiatives to live in the organization in a sustainable and effective manner and, more importantly, provides leaders in the organization a road map for how to transform their companies. This includes connecting tools that previously would not have been considered lean by linking them to vision, principles and systems.

Consider the example of Ross Controls, a company founded in 1921 as an international supplier of premium pneumatic valves and hydraulic controls. It started its lean efforts in its two plants (Michigan and Georgia) in a traditional manner -- teaching and applying tools, implementing solutions as events and looking for patterns of how all the efforts fit together. Some things stuck and others did not. Progress was both painful and unfulfilling. Their start was learning tools such as the 5S's, which stand for Sift, Sweep, Sort, Sanitize and Sustain. 5S's was used for cleaning up the place, which was not the primary purpose of 5S. Ross Controls was struggling, regardless of the tool or practice, with applying those tools on a consistent basis. Progress would come in a spurt, then fizzle out, or revert back to before the improvement ever happened. What would work in one area wouldn't in another. John Smith, Ross Controls' COO, reflects on that stage: "It's funny, at first, much of what we learned seemed like simple common sense. But we realized that implementing a common sense approach company-wide could be quite

complicated.” As Smith realized, one person’s common sense is another person’s impracticality, and the challenge of transformation became very, very real.

Without learning a single new tool, Ross Controls embarked on a formal learning process to incorporate the principles, or mental models, and the system rules into its lean transformation efforts. “This is where we learned how to pass along to others what we had learned and how we thought” comments Plant Manager Sue Reicher. With the right thinking in place, predetermined tools were not the only method of improvement. Employees could use that thinking to find new creative ways to improve their operations and work environment. Reicher continues “The majority of employees have bought into it. We’ve been able to instill the feeling that everyone is empowered to make changes and get things done without incorporating red tape. This is a major change for us. Before, required supervisory permission or change was dictated from upstream. Now we use the 60 percent rule – if you’re 60 percent confident something will work, try it.”

On top of adopting principles and system rules, COO Smith established a vision of progress towards the ideal state regardless of what was happening with the customer, the competition or the economy. As a result of this vision, efforts were not determined by how good or bad things were in the economy, and the company continued to make progress in light of very tough times. Today, Ross Controls' enthusiasm and drive is infectious, and one walk through the factory will tell you that this place truly is different.

It took some work, but soon, the tools that were already in place started to work, grow and produce results. Inventory came down by millions of dollars including finished goods down by

80 percent, floor space was freed up by over 20 percent, lead times cut in half and customer service rates rose. This affected more than the organization's performance, however, it also affected the people. Steve Littleton, Ross Controls' UAW Chief Steward at the time of this lean transformation, comments on the value to the people: "It made a big difference to realize that management wants to know what we know on the floor. It's great to see all these continuous improvements. We've moved areas for accessibility, eliminated waste, and lean has saved some jobs here. And since lean, we've added two new product lines. So, we've saved 20 percent of space and added 20 percent work to the product line. That's significant."

This is just the beginning for Ross Controls, and COO Smith knows this: "Lean is a journey, not an end. We've accomplished a lot through lean, but we've discovered that because everything and everyone is connected, one action precipitates another. We've increased morale tremendously and opened the lines of communication. But there's always room for improvement."

Ross Controls, like many other companies, struggled significantly when only working at one or two levels of the organizational learning hierarchy (vision, mental models, systemic structures, patterns and events). They learned that integrating all levels when dealing with any transformation, particularly lean, is mandatory in order to succeed.

CONCLUSION

Lean is more than just tools. Organizational learning is more than just frameworks and concept.

Putting either of these efforts into practice takes a long-term and integrated view. Regardless of



the depth or breadth of our understanding, it is *how* we apply these ideas that really counts. Instead of searching for the next big idea, the next big fad, let's make work what we already know is effective.

Then, when the next big idea does come along, we'll know how to adopt it and integrate it within our existing environment, using it to move us and our organizations forward, not backward.

Not many movements or ideas last more than a few years. Those ideas that do last longer likely have something more to them than first meets the eye. Organizational learning and lean both fall into this category. Instead of people inside organizations fighting about which idea is bigger and better, perhaps we should refocus that energy on integrating these concepts. Then, instead of diverting energy away from the organization we can put energy into building the organization, and that energy can build great and sustainable companies.

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