An Approach to Lean Transformation

By Rogério Bañolas

Overview

Those who try to make changes in management ask themselves why it is so difficult to sustain the changes. Why is it so difficult and slow to enhance business performance and why does performance plunge quickly? Why do few companies succeed?

These questions don't apply only to lean transformations, they are suitable to other organizational shifts. Most challenging, though, is the case of lean practices, where results are validated and known. Toyota, which first nurtured the lean approach, perfected its lean system for more than 25 years, becoming the biggest and most profitable automobile assembler in the world. Hundreds of technical tours to companies in Japan witnessed the benefits of lean management. Even though, most companies are not able to perform a lean transformation.

Topics related to lean transformation:
- Organizational changes
- Leadership
- System Dynamics

The following text analyzes the hurdles to a lean transformation and suggests an approach for success[1].

When Can an Organization Be Considered Lean?

A lean organization has already eliminated the wastes eligible to be swept from its processes, practices kaizen companywide, and improved value flow to customers above the performance levels of traditional companies. And it is profitable due to lean practices. Lean organization is in a stage where continuous improvement management is so embedded into daily activities that it is quite difficult to return to the previous performance levels. Regardless what the

[1] Knowledge gap will not be detailed here although it is one of the biggest hurdles to lean transformation.

management system is called, it makes complete use of kaizen[2], mainly observing the following characteristics: 1) improvements happen in both directions (horizontal and vertical) simultaneously; 2) managers support improvements (effective leadership); 3) people are truly considered as the source of organizational capabilities and 4) kaizen thinking replaces formal (management) and informal organization, at casual relationships and at the individual level.

Each company has its own lean journey, which can be different from the following three stages. In the first stage, the organization sees waste and works continuously to eliminate it. A company in the second stage has spread kaizen management (all people are involved), knows all types of waste as defined by lean and everybody helps to eliminate it. There is alignment and commitment (by most of managers) to the lean organizational goal. At the third stage, lean practices are embedded into the organization. Planning processes deploy lean to every organizational level of the company and to autonomous improvement groups. Planning and execution do not disregard long term success in favor of short-term goals. To reach the higher level of organiztional maturity, the lean organization puts a lot of effort into improvements and jumps over many hurdles.

General Barriers to a Lean Transformation

There are four basic reasons preventing lean transformations: 1) misalignment of leaders (in both formal and informal networks); 2) gap of lean knowlegde; 3) change approach is insufficient; 4) it is too late to implement changes.

Leaders with diverse interests and vision try to drive the company to different and often conflicting goals. Usually some managers perceive improvement group autonomy as loss of power and prestige. Low performance is a sign of a knowledge gap, or an unconscious barrier exists. Argyris (2005) calls unconscious incompetence the unconscious mechanisms that become barriers to change. The person may be in two different leves of unconscious incompetence: 1) he **knows** that he doesn't know (recognizes his knowledege gap and, therefore, is more likely to change; 2) he **does not know** that he doesn't know (unlikely to change). Yet in Argyris's viewpoint, unconscious incompetence comes along with skilled incompetence which means, as the expression says, is the involuntary ability to be unable.

There is bad skilled competence related to consciousness: one **knows, but doesn't tell** what he or she knows. This is the situation when a management consultancy chooses not to criticize the client to not jeopardize the contract. Another example is when followers realize that the leader made a mistake, but overlooks it to protect his or her job. Or, when the leader does not tell the follower about mistakes to preserve the relationship or to take advantage of the mistake.

[2] Kaizen is much broader and structured than Continuous Improvement. Therefore, it is not strictly correct to use interchangeably "Kaizen" and "Continuous Improvement".

Skilled incompetence results from lack of a capability to make oneself better, under a couple of subtle strategies, socially accepted but that keep organizations poorly performing. [3]

Perhaps, the most common skilled unconsciousness is to attribute transformation difficulties to so called "change resistance." The "change resistance" mantra suggests that leaders want to make changes, but the followers resist fiercely.

Belief in "change resistance" unburdens responsibility for transformation. Under the speech on "change resistance" no mention about knowledge gap, poor management approach to informal networks, or inconsistent[4] leader behavior is made.

It is imperative to recognize that skilled unconsciousness and incompetence hit all of us, in some degree.

Lean transformation complexity shows that, usually, without external support changes are difficult to make. An approach unable to change the organizational structures is insufficient to make the transformation.

Moreover, improvements take time to be implemented. If an organization is not capable of improving itself, it might be too late to sustain itself.

Naturally, a crisis is likely to engage people to do what should have been done before. But, it might be insufficient time for the changes to have a positive effect.

Specific Barriers to Lean Transformations

When there is still chance to increase competitiveness before competitors or other externalities become irreversible, a set of specific barriers prevents the transformation towards lean organization.

Knowledge

The following specific barriers are developments from knowledge gaps, mental models, organizational structure, and leadership style:

- Inadequate productivity vision: "machine must not stop"; "men must not stop"; produce large quantities to share indirect costs;
- Lot-and-queue thinking (bigger lots are seen as source of economy of scale and productivity);
- Management is understood as fashion (new ideas are explored and superficially tested);
- Lean and kaizen are misunderstood (unaware of "why's" although lean tools and methods are known);

[3] When an organization renounces conscious or unconsciously a superior performance level.

[4] For instance, spouse one way and act the opposite way: "people are the most important resource to the company", but "they demand a lot. Machines demand nothing".

Thinking

- Problems are seen as a menace (lean sees them as opportunities);
- "New is good" mentality; "old is bad";
- Short term thinking;
- Rejection to theory: "this is theoretical, does not work in real life"; but a proved theory, indeed, is science, and science has the ability to predict real events;

Management behaviour

- Purely directive management (commanding; not supportive);
- Lower ranks are blamed for existing problems (defensive standing);
- Managing from the desk (go to see *in loco* is not part of manager's habit);
- Lack of change agents (leadership);
- Efforts are not rewarded (only results are rewarded -- for instance, costs reduced -- instead of rewarding improvements efforts **and** results (improvement itself);
- Don't know how to recognize the improvements (lean frees manpower due to process enhancements). It's a mistake to fire people that made the improvements);

Insecurities / skilled unconsciousness

- Changes uncover inefficiencies from the past (managers that try to change face declared or tacit opposition from directors/managers that did not succeed in the past, who feel embarrassed about these new improvements: "someone is going to realize that I was not able to do it when I ran the operation";
- "Must-know" mentality: one says "this I already know" in order to not feel embarrassed, even though they do not understand the matter;
- Accountability is perceived as source of power (the more workers who report to me, the stronger I am);
- Action mismatches the speech (espoused theories are different from practice);

Structure / incentive

- Tension is not enough to make the change (if there is no crisis or a strong stimulus to make improvements, people may be not willing to do it): there are few goals or they are not truly accepted by the organization;
- Strong hierarchical sense (decisions are mostly top-down);

- Cost accounting penalizes margins on short term when inventory is reduced: balance sheet shows decreased profit, although company has improved noticeably;
- High manager turnover due to external appeal (promising carriers outside) and high employee turnover due to lack of incentive to growth (for employees, **to do** is considered by managers more important than **thinking before doing**).

Usually, the existing mentality in an organization determines the structure and leadership style. These set the actual learning limit and knowledge collection. Explaining these factors and their interrelations misses the scope of this text. Let us then take some factors that are of little attention and partially explain the barriers to lean transformation.

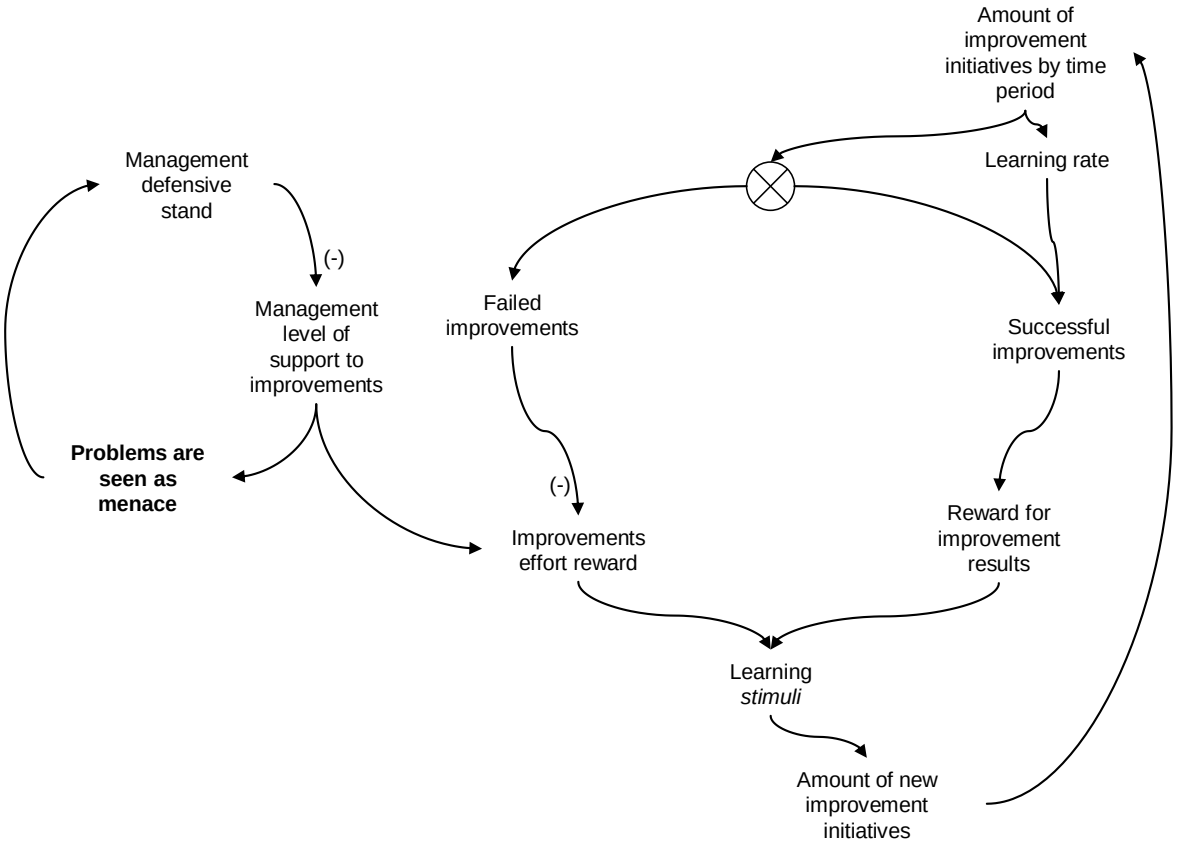


Figure 1: Map of barriers to lean transformation.

Obs.: The minus (-) sign in the map means an inverse relation (when one factor increase the other decrease and *vice versa*) to the factor linked through the arrow. This map suggests that it could be completed up to desired complexity level.

When problems are seen as a menace (Figure 1), managers usually become defensive, which makes managers give less support to those who want to make improvements. In hostile environments, people become more defensive and improvements are downgraded or sabotaged. In this case, is not to be expected that people are rewarded by their effort when improvements don't reach the expected level. Effort is worthless in environments where only results matter. The lesser the learning *stimuli*, the lesser are the improvement initiatives and, consequently, less improvements will be made.

Some improvement initiatives succeed, others fail. In a defensive environment, the last ones diminish even more the improvement effort reward. *Stimuli* are, then, restricted to successful improvements. Complex problems and aggressive goals tend to be avoided. Learning *stimulus* is less than if efforts were rewarded as well. A lower rate of learning leads to mediocrity and standard solutions are chosen for those bigger and more complex problems. A small amount of improvement initiatives does not contribute to lesser learning and a far less amount of improvements. Certainly this is not a favorable environment to continuous improvement.

Leverage to Lean Transformation

In contrast, when problems are seen as opportunities (Figure 2), management supports the improvement effort. The results as well as the efforts are rewarded. The improvements initiative is bigger. Thus, more improvements succeed and the learning level is higher.

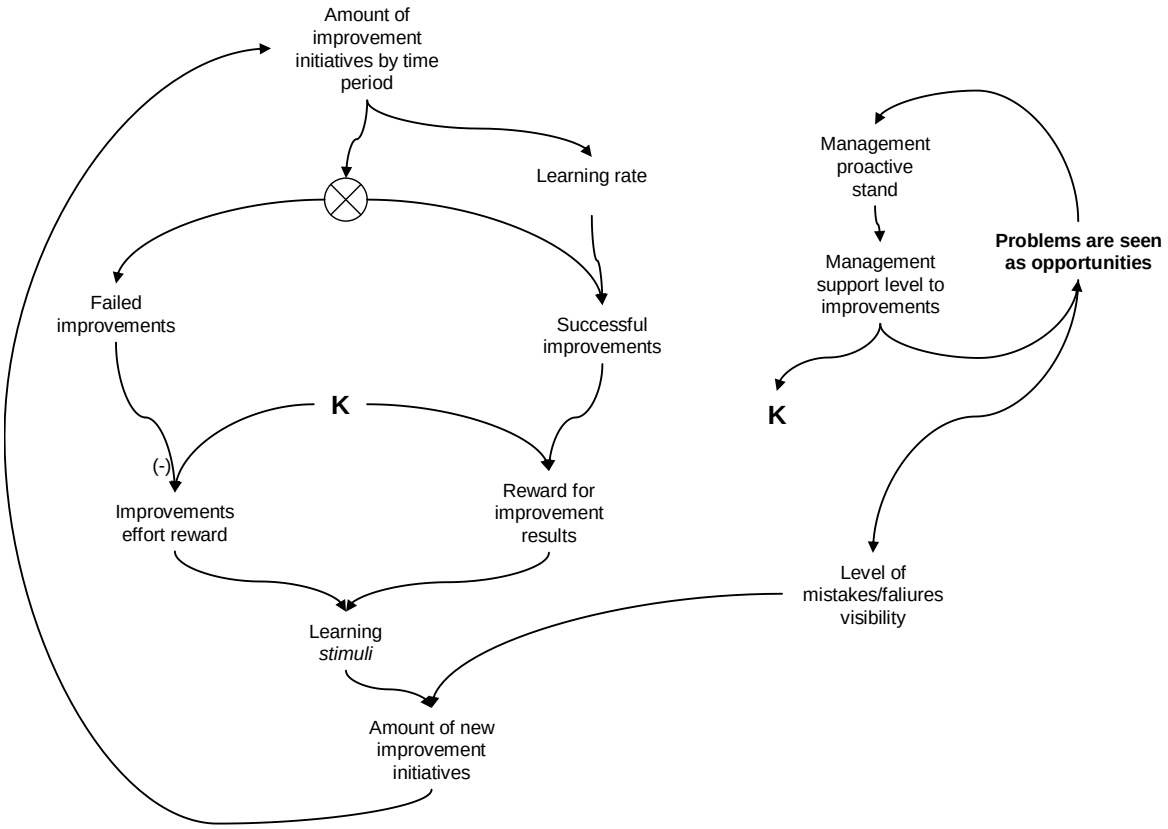


Figure 2: Lean transformation approach map.
Obs.: The K letter links the two map portions (management support level to improvements and rewards).

Leverage to lean transformation, for sure, is not restricted to a few linked factors. Neither is it effective to try to convince managers to be proactive. If this were the case, some hundreds of training hours would be enough to begin and sustain the changes. The true question is building an approach that deals with the dynamic complexities of transformation.

An effective change approach should deal with fundamental barriers to a lean transformation, explore specific barriers, and go to the root level of values and principles that is the foundation of a lean system.

Besides, each organization has its own set of barriers, facilitating and leveraging factors to change. This means that a successful menu is not transferable from one company to another. There can be two lean organizations, but there would not be two Toyota's. There can be many lean systems, but each one will be different from others. Two companies with very different cultures, say Brazilian and Japanese, would have different lean systems.

There is no evidence, for instance, that a generic lean model could not be as good as a Japanese model. In Brazil, for example, while discipline and other principles would be restrictions, motivation for improvements and attitude towards solving problems would be leverage points. Thus, each organization should build its own lean management model.

Each organization should understand its specific barriers to lean transformation, which is not restricted to the list above, uncovering which are its skilled incompetences, core abilities, driving factors and leverage points. It should also discuss internally what are the organizational values (not to be confused with sayings on posters). And, finally, it should check if existing values and principles support the lean system.

From Barriers to Lean Transformation Approach

Organizational barriers to the change come from mental models that rule the organization. For example, when a company has many experts who think they are wise, then the "not to know is weakness" mental model is in effect. Such thinking prevents leaning processes and the experimentation of new alternatives. In such cases, superficial understanding and low learning levels are expected.

Moreover, there are other mental models acting upon the organization, each, supporting its related behavior. To make change it is necessary to map mental models and find out how they rule the organization.

Pascal Dennis [2007], lists a simple set of mental models that are opposite to lean and that may be interpreted as follows:

- Manager demands, employee obeys;
- Shop floor is for workers, not for managers;
- There are some standards, but we don't know if they are followed;
- Don't ever stop the machine. Produce the planned quantities;
- Large quantities mean productivity;
- Hide problems;
- Only experts are able to solve problems, using complex methods;
- Maintain inventory, just in case.

The opposite of this list suggests a menu for lean transformation. But menus don't work for complex situations. Moreover, there is a set of principles and values that need to be in place to have a lean management system.

An approach that explains principles/values, mental models, barriers and leveraging factors in the same scenario is not simple to execute. It's not common to see companies evaluating all these factors, as part of the same system, in a dynamic and strategic manner.

Then, it is at least advisable to do a systemic approach to deal with lean transformation: bringing together all important factors to the same picture and to try to understand the interrelations based on lean principles.

An Approach to Lean Transformation

The fifth lean principle set by Womack [2003] is perfection. Truly engaged people, that adopt continuous improvement as way of life, are rare. So are those who don't give up when failing during a journey.

Leaders with these qualities should be retained by the organization. Companies that let them realize their potential are equally rare. So, few companies convert to lean and few stand out competitively -- whatever lean system chosen.

One of the first tasks suggested by Womack is to find a change agent. This leader must have profound knowledge about lean practice. As it is difficult to find all these characteristics in the same person, it would be advisable to bring in a sensei (a teacher and master in lean) from outside, maybe a consultant or a hired executive. Either way, change can't be accelerated only with some experts in production and logistics. A broader set of knowledge is needed to realize a transformation. From that point on, lean knowledge must be spread through organization.

This advice (change agent + lean knowledge = lean transformation) seems so simple to be put into practice. But simple solutions don't work for complex problems. There are a collection of variables interacting within organizations that makes the change complex and, in most cases, a failure.

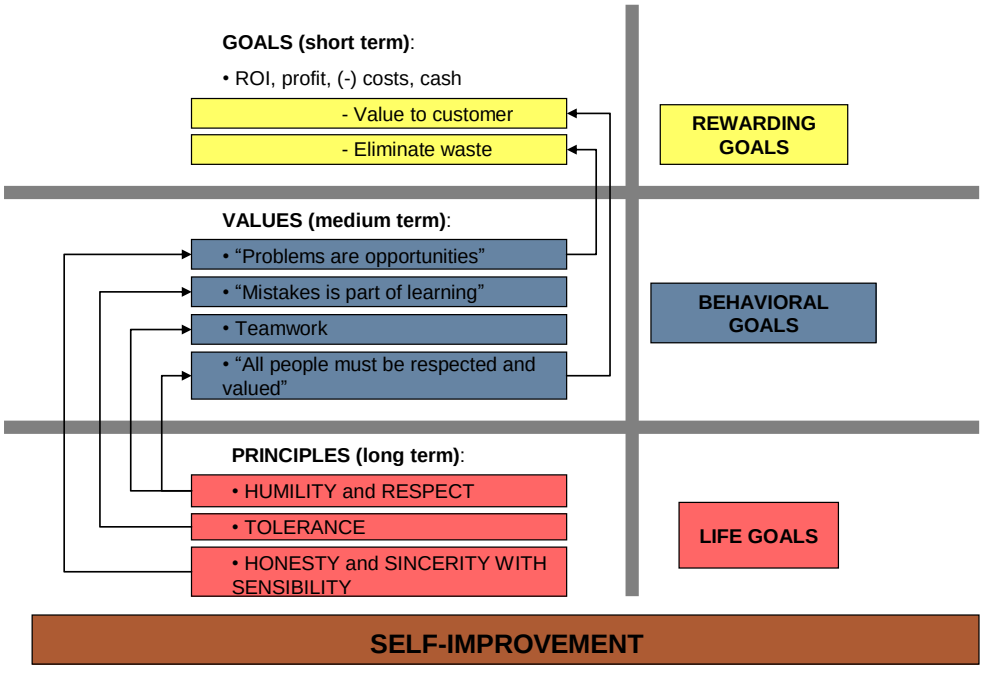


Figure 3 – Values, principles and short term goals.

The proposed approach assumes as a fundamental supposition that transformation comes through mental model changes. That is, confronting existing mental model with desired principles/values and mental models.

When the present mentality is questioned, behavior tends to change. It is a slow pace of change, however. Slower, too, if principles and values are conflicting with transformational goals (Figure 3). Principles are life goals (long term) while values are behavior goals (medium term). Short-term goals seek instantaneous reward.

It is not likely that problems are seen as opportunities in a cynical and intolerant (with errors from improvements initiatives) environment. In such an organization, levels of waste are expected be higher than in an organization where tolerance and continuous improvement is fostered. For the very same reason, other principles should align with values and short term goals (Figure 3).

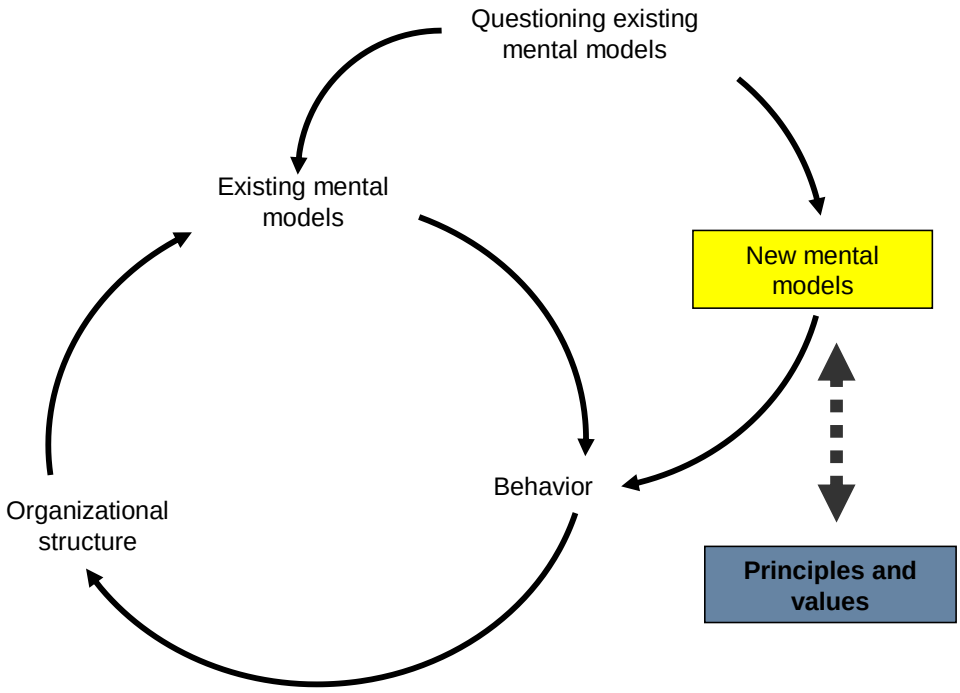


Figure 4 – Principles, values and mental model dynamics.

When questioning existing mental models (Figure 4), comparing them to principles and values, new mental models may arise. It is likely that they align, because there is a positive feedback loop between mental models and principle/values. New behavior will reflect a new mental model.

New structures might replace the previous ones. It will take time, but a steady purpose to change that will determine success or failure. An approach that takes

into account these factors would be able to speed up consistent lean transformation.

Lean transformation takes place in few companies because the change process is complex. There are many barriers to a successful lean transformation that make organizations consciously or unconsciously incompetent to change. Consequently, few organizations are able to be more competitive through lean practices. Without understanding organizational and human factors related to a lean transformation, it is going to be difficult to change. We do not intend to propose a simple solution for such a complex problem. Perhaps, the execution of that solution would be simplified, but this does not mean that it would be simple. If an effective and complete solution is desired, the following topics, at least, should be explored: barriers, leadership, lean knowledge, mental models, principles, and values.

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Rogério Bañolas

Rogério Bañolas is a consultant with *Pro Lean:* Logística Enxuta, www.prolean.com.br . Based in São Leopoldo, Brazil, he can be reached at (55) 51 3251 4682, (55) 51 93343770 (mobile), or banolas@prolean.com.br