

# **LEADERSHIP AND CULTURAL CHANGE: NECESSARY COMPONENTS OF A LEAN TRANSFORMATION**

**Janette A. Keiser, PE, JD<sup>1</sup>**

## **ABSTRACT**

Some of the presenters at the Lean Construction Institute's 2010 and 2011 Lean Congresses reported that organizations on Lean Construction journeys must undergo a cultural change as an essential element of their transformation (Giuzio 2010, Lichtig 2010, Angelo 2010, Izquierdo 2010, Montero 2010). Some also identified effective leadership as an important element of successful cultural change (Giuzio 2011, Lichtig 2011, Angelo 2011, Reiser 2011, Laski 2011, McCready 2011, Lindsey 2011). Some companies have detoured from Lean because they didn't know how to make the cultural change necessary to create company-wide transformation (Beaudoline 2011, Heger 2011, Knapp 2011, Fauchier 2011, Osterling 2011, Robinson 2011, Holzemer 2011, Moore 2011).

What is "cultural change" and "effective leadership" in the context of a Lean Construction transformation? This paper describes the preliminary results of research relating to the cultural change of construction companies on Lean journeys. It addresses leadership's role in making a cultural change to Lean. The paper is based on presentations by Lean practitioners, interviews with CEOs, project managers, superintendents and others who have been on Lean Construction journeys as well as a literature search of organizational development models that could help construction leaders create the cultural change necessary to sustain Lean.

The paper identifies a model, borrowed from research related to high performance teams, which could help support a Lean transformation.

## **KEYWORDS**

Lean construction, leadership, organizational change, collaboration, commitment, perspective, trust.

## **BACKGROUND – THE CHALLENGE: CREATING SUSTAINABLE CULTURAL CHANGE**

Lean Construction has been practiced by a growing number of companies across the globe. Numerous practitioners report their projects experienced lower costs, improved safety, decreased durations, better quality and other benefits (Giuzio 2011, Lichtig 2011, Angelo 2011, Izquierdo 2011, Sanford 2011). Jeff Giuzio said his Lean project shaved 43 days off the schedule, returned 75% of the project's cost contingency as well as substantially reduced RFIs and change orders.

Numerous presenters at the 2010 and 2011 Lean Construction Congresses reported that the successful integration of Lean principles and practices into a

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<sup>1</sup> Owner, J. Keiser & Associates and the Lean Leadership Project. 17515 Virginia Point Rd NE, Poulsbo, WA, 98370, USA, Phone +1 (206) 714-8955, jan@keisergroup.com

company/project requires a cultural change. Ted Angelo (2010) said, “It’s about changing the culture of the company...to unleash the power of your workforce.” Jorge Izquierdo (2010) stated, “Our objective is cultural change. You are going to change the way people think...” Sanford Smith (2011) agreed, saying, “If you don’t embrace the culture, you will not get it right.” Craig Russell (2010) reported that most of his challenges relate to making this cultural change. Paul Reiser (2010) addressed this topic in a Featured Learning Session on Lean Leadership, recognizing the need for a cultural change and effective leadership and suggesting that organizational change models, such as featured in John Kotter’s book, Leading Change, could be helpful. There wasn’t time in the Learning Session to discuss how such a model would be applied to a construction project.

Creating sustainable cultural change in any organization is challenging because organizational inertia resists change. Changing a business culture requires a mindful approach, which is different from learning the Lean tools. Brett Paloutzian (2011) said, “Our team used some great Lean tools but didn’t use the tools to the best of their ability because we didn’t have the behaviours built in yet; we didn’t have a Lean culture.”

#### **THE ROLE OF EFFECTIVE LEADERSHIP IN CREATING LASTING CHANGE**

Effective leadership is a critical element of creating lasting change in any organization and particularly important in a Lean transformation. Will Lichtig (2011) said that projects on Lean journeys “...need to shape a new leadership paradigm for the project. You’ll be learning new leadership tools and you must build the capacity of the leadership team as you go.” In some cases, failing to address the cultural change and leadership elements has caused a promising Lean journey to be cut short because the company loses faith in Lean as a way to create transformational change.

For example, consider the case of Speedy Construction.<sup>2</sup> Speedy is a successful mid-sized contracting firm with over a dozen branch offices in seven states. Speedy’s president, Mike, wanted to explore Lean Construction. Speedy hired Bob, a Six Sigma Black Belt, as a permanent employee to help teach Lean tools to Speedy personnel. Bob presented workshops, worked on some actual projects and tried to institutionalize Lean tools into Speedy. The company created, according to President Mike, “pages and pages of process maps” and made some significant progress in driving out waste, such as reducing the time required for shop drawing production.

Even with the early success, after a year or so, the Lean journey got stuck. Speedy’s leadership was focused on supporting a number of new offices and helping the company evolve into a unified organization. The company had been in business for over 30 years and management’s goal was to support the consistent application of its existing programs for safety, document control, etc. According to President Mike, “The word ‘initiative’ almost became a 4-letter word. We often identified [an initiative] we wanted to improve and asked people to help us get better at it. But, we didn’t match [our initial efforts] with follow through.”

After a couple of years, Bob’s work dropped to part-time and shortly thereafter, he found another job and was not replaced. The company hasn’t forgotten about Lean or lost hope in it. Management still talks about how they can spread Lean to the entire

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<sup>2</sup> The names of the company and personnel have been changed, but the story is true.

organization because, as President Mike said, “[I believe] Lean is a new differentiator for general contractors [just as BIM was a few years ago.]” Mike believes Lean will be a driving force in the industry. Yet, he doesn’t know how to institutionalize Lean into Speedy’s culture. Mike is an accomplished businessman and engineer who is successfully leading his company through rapid expansion and a brutal recession. He describes himself as a Lean “convert” and he’s seen numerous successes with waste reduction at Speedy due to Lean. But, he doesn’t know what to do next.

Mike is not alone. I interviewed a number of construction company leaders who have been on Lean journeys for at least a year and who have practiced Lean methodologies on several projects. All of them appreciated the potential benefits of Lean Construction and wanted to integrate Lean into their company culture, just as they had integrated safety, for example. None of them could explain how they were going to do this. Beaudoine (2011) put it like this,

“Some people are very defensive. People like change but they don’t want to change. Other people are very creative and see the possibilities. We’re trying to lay the expectations and set up the organization that supports it. We haven’t done this yet. We have people that are interested in this but we don’t have a uniform process for moving forward yet.”

The danger is that, without an effective strategy to change the culture of these companies, they may not be able to enjoy the benefits of Lean over the long term.

## **THE THEORY – LESSONS LEARNED ABOUT CULTURAL CHANGE FROM OTHER INDUSTRIES ARE APPLICABLE TO LEAN CONSTRUCTION**

How do companies create the cultural change needed to support Lean Construction as a sustainable operating system; that is, a framework for company-wide, continuous improvement and risk management over the long term? What is the role of leadership in making this happen? Fortunately, we don’t have to start from scratch when we address these questions. Lean principles and tools have been used in the manufacturing industry for decades. Jeffrey Liker, co-author of The Toyota Way, has recently published a new book, The Toyota Way to Lean Leadership describing research and insights about the role of leadership in creating and nurturing the application of Lean in manufacturing companies. For the past several years, the American Society for Quality® has sponsored the Lean Leadership Skills Workshop, which focuses on teaching leadership skills to Lean practitioners in the manufacturing industry (Rollo 2012). Much work has been done on organizational change, such as Kotter’s book, Leading Change, as well as on developing and sustaining high performance teams, such as: The Wisdom of Teams – Creating the High Performance Organization, Jon R. Katzenback and Douglas K. Smith; Leadership Team Coaching – Developing collective transformational leaders, Peter Hawkins; Senior Leadership Teams – What it takes to make them great, Ruth Wageman, Debra Nunes, James Burruss and J. Richard Hackman; How Organizations Work –Taking a Holistic Approach to Enterprise Health, Alan P. Brache, and Leading Teams – Setting the Stage for Great Performances, J. Richard Hackman.

I believe this body of knowledge can be used to help construction companies train their personnel to apply Lean thinking, just as the industry addresses other important

initiatives, such as safety, quality control/quality assurance, environmental compliance, project controls, etc. In this manner, Lean Construction could be integrated into any construction company's culture. For example, it wasn't long ago that proactive environmental awareness within the construction industry was largely confined to regulatory compliance to avoid fines. Eventually, standards, incentives and certifying criteria as a means to measure energy conservation efforts were developed; an example is LEED. As the industry evolved, standards became more rigorous, certification requirements became more disciplined, and award systems were created. The design and construction industry responded by adopting energy conservation training and research as company-wide initiatives. As a result, energy conservation and the LEED system is now fully established in our building culture. The same thing can happen with Lean Construction. I believe to promote this, we must (1) learn from the lessons of other disciplines related to creating and sustaining effective cultural change; (2) develop appropriate modifications for the construction industry; and (3) apply the modified approaches to Lean Construction.

### **LESSONS LEARNED FROM OTHER INDUSTRIES**

What specific lessons from the Lean Manufacturing and Organizational Change disciplines are most applicable to the construction industry? To answer this question, consider this hypothetical scenario: a construction company wants to learn how to employ principles of Lean Construction on a specific project. The company either (a) has someone on its staff that has had some experience with Lean before coming to the company and that person is assigned to the project or (b) hires a consultant to help introduce Lean to the project. Either way, the introduction of the principles and tools of Lean Construction is often through application on a specific project. That project typically enjoys numerous benefits and the company uses Lean Construction on another project. In this manner, in theory at least, Lean Construction is spread throughout the entire company, project-by-project. Except reality doesn't always happen like this. Even in large, established companies, the application of Lean to any particular project is often the result of an individual project manager's awareness of Lean principles, experience applying Lean tools and willingness to serve as a company-wide Lean champion. If that Lean champion leaves the company, the company could lose its ability to transform. Plus, there are really two entities that need to change – (a) the project team needs to change so it meets the expectations of all project stakeholders; and (b) the company needs to change so it can properly support the project. While there are overlapping issues and concerns between these two entities, each entity must be addressed separately. Fortunately, the same principles apply whether talking about a specific project team or a company.

### **THE PROJECT TEAM**

Projects are unique and project teams that are brought together to work on a specific project are unique. Each unique project is a separate, distinct endeavor with its own combination of technical requirements, schedule concerns, stakeholders, cost issues, functional parameters and operating systems, which will, in this combination, never happen again. While the same people and the same companies may work on other projects together, as part of other teams, the factors under which they work changes.

This makes it challenging for a project team to evolve into a high performance team. Specifically, construction project teams face these challenges:

1. The team must accelerate its formation process in order to meet the project's schedule requirements. This leaves little time to build trust, foster collaborative communication and otherwise engage in the so-called softer side of construction team dynamics.
2. The make-up of the team shifts as the project's scope of work changes – new team members move in and experienced team members move out. This makes it difficult to build a consistent business culture within the team.
3. Contractual systems are not always designed to optimize performance. As an example, sometimes the prime contractor earns a bonus for completing a milestone on time or early, and will not have a means to share that bonus with the subcontractors and suppliers that helped the prime earn the bonus.
4. Construction, as an industry, has not traditionally nurtured or taught emotional intelligence, which leaders of high performance teams need to be effective.

Can the lessons learned about the development, care and feeding of high performance teams help construction project teams overcome or mitigate the challenges identified above? I believe they can. Let's look at one example; a model for the development of high performance teams that is described in the book Senior Leadership Teams – What it takes to make them great (Wageman et al. 2008). The authors conducted extensive research about what makes teams work successfully.

“[Since 1998] we collected and analyzed systemic data from more than 120 top teams around the world, examining everything from organizational mission to the capabilities of the individual team members. We observed the teams in action, conducted in-depth interviews of the team leaders and members and collected quantitative and qualitative data about the teams using well-validated assessment tools. We also reviewed financial results, customer satisfaction and other measures of performance for the teams we studied.

That research unearthed six conditions that turned out to be key in composing, structuring and leading...teams. Moreover, the research provided numerous concrete examples of senior team leadership, some of which worked well and some of which did not.”

The research described in Senior Leadership Teams found the six conditions which fostered the effectiveness of leadership teams fell into two groups: three “Essential Conditions”, which are the basic prerequisites for good team performance, and three “Enabling Conditions”, which smooth the path to excellence and accelerate a team's movement down that path.

The “Essential Conditions” are:

1. *creating a real team;*
2. *providing the team with a clear and compelling purpose; and*
3. *ensuring the team members have the knowledge, skill and experience required for the work.*

The “Enabling Conditions” are:

1. *a solid team structure;*
2. *a supportive organizational context; and*
3. *competent team coaching.*

These conditions, if established on construction project teams, may help the teams achieve sustainable, successful outcomes, because according to the authors of Senior Leadership Teams, these conditions will help create and sustain a high performance team. The good news is that the

“basic design of the... team does not have to be perfect from the start. But it does have to be strong enough to provide a firm foundation for competent teamwork, and it is the chief executive’s job to assess whether that is so, and if not, whether it can be made up.”

### **THE CONSTRUCTION PROJECT TEAM PERSPECTIVE**

Let’s apply the lessons learned in Senior Leadership Teams to a hypothetical construction project to see how the “Essential Conditions” and “Enabling Conditions” could be applied.

**The “Essential Conditions”, as reported in Senior Leadership Teams, are:**

#### **“Creating a Real Team”**

According to Senior Leadership Teams, a “real team” is defined by specific factors. Following is a description of each factor and an example of how it could be applied to a construction project team:

*“Real teams have clear boundaries”* ; that is, everyone knows who the team members are. In the context of a construction team, the identity and roles of team members are usually clear. However, if there is a wide variety of stakeholders that are not part of the chain of contractual privity or if there are members who provide products but do not work at the project site, this characteristic can become blurred. Team leaders must clearly identify who the team members are and what their roles are. All team members, regardless when they arrive on the site or if they only work off-site, should be oriented to the project’s mission, values, goals and protocols through an on-boarding process. The team leaders must ensure this happens. Tara Laski (2011), who was the owner representative for the Temecula Valley Hospital Project, reported the project used an on-boarding process which helped instil trust at all levels of the project and establish ground rules for interaction.

*“Real teams have stability”*. Construction project teams may shift as members leave after they finish their work and new members arrive to begin a new phase of work. The key personnel, which serves as the core team, should be identified and remain intact through the duration of the process. This will help the team maintain continuity and stability. If a member of the key personnel must leave, there should be adequate time to transition between that member and his/her replacement. It is the job of the team leaders to ensure this happens.

*“Members of real teams have the time and opportunity to hone their ability to work together”*. The collaborative aspect of Lean Construction provides the opportunity for dialogue between all the parties that are responsible for a given piece

of work. This factor of Lean Construction happens to be one of the essential elements of building a high performance team. Construction project team leaders and project systems must support this interaction.

*“Real teams are highly interdependent”* with members drawing on their colleagues’ special knowledge, skill and experience in the work they do together. This factor is built in to all construction projects, as specialized trades come and go to perform their specialized scopes of work. Lean Construction thinking and tools help enhance this factor through collaboration and efficient problem solving. Team leaders must ensure this happens effectively.

**1. “Providing the team with a clear and compelling purpose”**

*“The team’s purpose cannot merely be the sum of the individual members. Rather, it is an overriding, crystal clear mission that all team members must acknowledge and agree to achieve.”* This is logistically challenging for a construction project team because of the way team members come and go. However, it would be possible to mitigate this issue with thoughtful pre-qualification processes. For example, as the prime contractor goes through its subcontractor and supplier buy-out process, the team leaders could explain the team mission and make sure all subcontractors and suppliers commit to the mission as a condition of contract. In making its commitment, the subcontractor would become an important member of the team. If the subcontractor was unable or unwilling to make the commitment, it should not be allowed to participate on the project. This approach is similar to the zero-tolerance approach used for other construction project parameters, such as: drug testing, safety requirements, etc.

**2. “Ensuring that the team consists of interdependent members who have the knowledge, skill and experience that are required for the team’s work.”**

For a construction project team, this factor is the easiest one to identify. The project team consists of people who represent many different disciplines required to perform the work of creating a complete project. The key is to ensure that the interdisciplinary team members are able to work together to ensure project parameters and technical requirements are integrated and coordinated. A number of Lean Construction tools facilitate the effective application of this factor. This factor is put at risk when team members are chosen solely on the basis of price. This is because the resulting team members may not be the best qualified to perform the work or may not have the ability to work together effectively. High performance construction teams must have effective interpersonal skills as well as excellent technical skills. Construction team leaders must address this issue when qualifying and training team members.

**The “Enabling Conditions”, as reported in Senior Leadership Teams, are:**

**1. “A solid team structure”**

A high performance team must have a structure that will ensure its success. Conventional wisdom is that a leadership team, such as a leadership team that is working on a specific project, should be of a manageable size in order to be effective. However, on a construction project, the project teams are often large, due to the large number of subcontractors, suppliers and stakeholders. This is frequently the reason why decisions take a long time to be made and conflicts take a long time to be

resolved. The team leaders must find a way to frame the structure of the team so the input from these stakeholders enhances, rather than detracts from, the operational processes. Having clear protocols in place and using established tools can help address this issue.

## **2. “A supportive organizational context”**

The best performing teams get the support and resources they need. Further, they are rewarded as a team, rather than as individual team members. This is one of the biggest challenges for a construction project team – to find a way to reward all team members for achieving the team’s goals. It is simple commercial reality that a party will only perform well if it is in their best interests to do so. Team members are more likely to give their best efforts when the reward structure is designed to reward members for performing well, regardless where they are in the chain of contractual privity.

## **3. “Competent team coaching”**

Team members need to apply knowledge, skills and abilities that are not often learned in engineering school, in the trades or on a traditional construction project. Further, construction project teams move fast and the team members must learn on the job. This is, according to lessons learned from the Lean Manufacturing industry, the best way to learn the principles and practices of Lean (Prock and Rollo 2012). The best teams learn from their team leaders and from each other, to evolve and grow, as a team and as individuals (Wageman et al. 2008). It is helpful for team members to learn how to be more effective learners and to be effective teachers. These are not traditional skills for construction project team members. Team leaders must not only be teachers and coaches, they must teach all team members to be teachers and coaches. This would help sustain the continuous improvement element of Lean thinking.

## **THE COMPANY-WIDE PERSPECTIVE**

The essential elements and the enabling elements of a high performance team could apply at the company level as well as at the level of an individual project team. Companies that put these elements in place will be able to more effectively integrate Lean Construction into their culture and into their projects.

## **SUMMARY**

The application of Lean Construction tools has helped construction companies manage risk and improve cost effectiveness. People on Lean journeys acknowledge the business culture must change in order to make Lean sustainable, but they don’t often talk about what actually needs to be done. More research is needed to understand how to make the cultural change necessary to support a sustainable Lean Construction transformation. Fortunately, there has been considerable research in other industries that can help us. Research relating to high performance teams may be effective when applied to the application of Lean Construction on a project and within a company. One model, set forth in the book, Senior Leadership Teams – What it takes to make them great, identifies three “Essential conditions” that must exist in order to create a high performance team and three “Enabling conditions” that



should exist in order to support the team on a sustainable basis. These conditions, when applied to construction, may provide an effective framework from which to create the cultural change necessary to sustain Lean Construction. Other models might work as well. Regardless which model is used, leadership must address cultural change mindfully. Field research is required to determine which model(s) would be most effective in helping construction leaders do this.

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