VIEWPOINT

Demystifying lean leadership

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Abstract

Purpose – There is convincing evidence that companies need a special form of leadership to succeed with lean transformations. The general advice for lean leaders, however, is often obvious or unrealistic. The purpose of this paper is to propose and discuss specific lean leadership practices for top-managers, middle managers and front-line managers.

Design/methodology/approach – In this conceptual paper, the authors draw on their rich experience from researching, leading and consulting in lean transformations in a large number of firms.

Findings – Leaders must adapt lean leadership practices to their hierarchical levels. This paper provides a framework to understand and debate lean leadership at different levels of the organisational hierarchy.

Originality/value – This paper demystifies lean leadership by offering a discussion of specific lean leadership practices at different hierarchical levels. The paper offers a new perspective for researchers studying lean leadership behaviours and contains helpful advice for firms seeking lean transformations.

Keywords Lean production, Lean management, Lean transformation, Lean leadership

Paper type Viewpoint

Introduction

The ultimate goal of lean programmes is to instil a culture of continuous improvement in the organisation, making the company a little bit better every single day. Unfortunately, in many cases, lean is understood simply as the application of a few highly visible techniques, though these are only the surface artefacts of a deeper culture (Emiliani and Stec, 2005; Roth, 2006; Hines *et al.*, 2011). This has in part led to many failed attempts of lean (Pearce and Pons, 2013; Hines *et al.*, 2018). A focus on the lean tools alone can only achieve limited effects in an organisation and, as a result, this approach cannot be sustainable. To succeed with a lean transformation, an organisation must also focus on strengthening the leadership role, so that managers through their behaviour and interactions with employees, inspire and involve the employees to work systematically with continuous improvement (Spear, 2004; Rother, 2010; Liker and Convis, 2011; Antony and Gupta, 2019). As such, the term "lean leadership" has recently begun to appear in both scientific and practitioner literature (Mann, 2009; Liker and Convis, 2011; Ballé and Ballé, 2014; Dombrowski and Mielke, 2014; Liker and Trachilis, 2014; Netland and Powell, 2016; Harald and Maurits, 2017; Van Dun *et al.*, 2017; Seidel *et al.*, 2019).

To the assistance of managers seeking to deploy lean, several authors have presented various lists of lean leadership practices in recent years. However, as we will discuss in this paper, a limitation of most descriptive lists is that they are too general to be useful in operational day-to-day situations. Managers who try to apply various textbook advices will soon experience that leading the transition to leaner operations is not an easy task (Emiliani and Stec, 2005). Part of the difficulties arise because the companies try to use the same leadership practices for managers at different levels of the organisational hierarchy (Roth, 2006; Lodgaard *et al.*, 2016). After all, the connections to the actual operations and people on shop floor – as well as other roles and responsibilities – differ extensively between top managers, middle managers and front-line managers. Therefore, we set out to explore specific lean leadership practices for managers at different levels in the organisational hierarchy.

Lean leadership practices

Management commitment and involvement remains the most referred to critical success factor for lean implementation in the literature (Jadhav *et al.*, 2014; Bortolotti *et al.*, 2015; Netland, 2016; Antony and Gupta, 2019). However, the exact management practices and behaviours that help deploy lean thinking in an organisation have for long been unknown to many managers (Emiliani and Stec, 2005; Netland *et al.*, 2015). In recent years, the term "lean leadership" has been suggested as a specific type of leadership. Normative descriptions of lean leadership behaviours are put forward by Spear (2004), Liker (2004), Rother (2010), Liker and Convis (2011), Ballé and Ballé (2014), Dombrowski and Mielke (2014), Netland *et al.* (2015), Van Dun *et al.* (2017) and Camuffo and Gerli (2018) among others. These articles have helped bring some clarity to what a lean manager *should* do.

In one of the earliest descriptions of lean leadership practices, Spear (2004) summarises four lessons from the leadership practices at Toyota:

- there is no substitute for direct observation;
- proposed changes should always be structured as experiments;
- workers and managers should experiment as frequently as possible; and
- managers should coach, not fix.

Later publications suggest comparable lists. Liker (2004), for instance, identifies 12 leadership principles at Toyota, which align closely with Spear's observations. As an extension, Liker also stresses the need for managers to create a "learning organisation". Mann (2014) proposes a four-point framework involving "leader standard work", "visual controls", "daily accountability process" and "discipline", with the first three closely aligning with Spear's advice and the latter being an underlying behaviour to make the first three work. Also, Martyn and Crowell (2012) present a similar approach including "strategy deployment", "visual management", "daily kaizen" and "standard follow-up". In yet another classification, Dombrowski and Mielke (2014) suggest five fundamental lean leadership practices, namely "strategy deployment" ("hoshin kanri"), "improvement culture", "self-development", "qualification" and "gemba". We will focus on Spear's original four lessons as a starting point but borrowing from this wider literature will later add two further areas.

Spear's first advice is often referred to as "go and see" (or "genchi genbutsu" in Japanese) and is perhaps one of the most fundamental leadership practices at Toyota (Ohno, 1988; Stewart and Raman, 2007). The core idea of this practice is that any lean leader should do first-hand observation at the place where value is created (or destroyed) for the customer. Taiichi Ohno is known for his "chalk circle," which means drawing a circle on the shop-floor,

standing inside it and observing a process (Ohno, 2012). "Gemba walks", in which leaders purposefully walk the shop-floor, is another popular way in which to enforce the "go and see" principle (Camuffo and Gerli, 2018). Another commonly cited practice that supports direct observation is "daily layered accountability" (Mann, 2014), which is realised through a set of short, structured daily meetings that provide a platform for problem- and task follow-up across all levels of the organisational hierarchy. Usually, daily layered accountability is organised as a series of "stand-up meetings", sometimes called "team board meetings", "pulse meetings" or "team huddles".

Spear's second advice is related to using "scientific experimentation" as the basis of all improvement. It builds specifically on the work of Taylor (1911) and Deming (1982), by promoting standardisation of work practices and the continuous improvement of these practices. Scientific experimentation come alive in lean organisations as "structured problem solving", which is based on Deming's (1982) plan-do-study-act (PDSA) cycle (or offshoots like Six Sigma's "define-measure-analyse-improve-control" method or Ford's "8 disciplines"). In such an approach, individual changes are carefully planned, made and studied. Thereafter, the new way of working is either accepted as the new standard or rejected. The cycle is then repeated to promote further learning and contribute to the continuous development of people.

Spear's third advice is that managers should foster "continuous improvement" ("kaizen") throughout the organisation. Kaizen means engaging all employees in simple improvements, everyday (Imai, 1986). Dedication to everyday incremental improvements does not oppose the idea of radical improvements and process innovations. On the contrary, managers must also support a portfolio of development projects, known as "kaikaku" (Bicheno, 2001). The suggestion system is a recognised means of promoting continuous improvement, where employees are encouraged to suggest ideas for improvement or point out problems. Suggestion systems can be organised in many ways. The traditional "suggestion box" is present in many organisations although it has often been found to be ineffective (Rother, 2010). Suggestions are also sometimes collected during shop floor meetings as part of the daily layered meetings. The point is that whatever structure is chosen, the manager must actively champion it and manage it.

In line with Spear's fourth advice, a lean manager is expected to act as a mentor such as the employee in turn can identify and learn the best way himself. Managers are encouraged to adopt a coaching leadership style, continuously challenging themselves, their peers and subordinates to reflect on and improve the current condition. The concept of "Toyota Kata" (Rother, 2010) provides a good description of coaching behaviours in a lean environment. This approach supports the notion that lean is a system of self-development through reflection ("hansei") and continuous learning, where leaders coach and develop others, support daily kaizen and create a common vision and set of goals (Liker and Convis, 2011; Dombrowski and Mielke, 2014).

Other authors recognise the importance of adopting a strategic planning approach for successful lean transformation. For example, Byrne (2013) suggests that the most important practice for getting all resources aligned with the lean turnaround is "hoshin planning" realised through "hoshin kanri" (sometimes translated to "policy deployment", "strategy deployment" or "strategic alignment"; see also Martyn and Crowell, 2012; Dombrowski and Mielke, 2014). In this approach, overall company objectives are broken down to sub-objectives at lower levels in the organisation, so that everyone is aligned towards the same overall strategy. Managers must make the objectives visible and accessible to workers and follow them up on a regular basis.

Based on the preceding discussion, we can summarise six generic lean leadership practices from the literature. They are:

- go and see;
- daily layered accountability;
- structured problem-solving;
- continuous improvement;
- coaching; and
- strategic alignment.

Leading lean at different hierarchical levels

Regardless of the available advice, many attempts at lean end only with disappointing results and in many cases failure (Emiliani and Stec, 2005; Pay, 2008). We believe one reason is that leadership practices are usually given as generic lists (such as the one derived above) that do not take into account the differences that come with various hierarchical levels of management (Hines *et al.*, 2004; Mann, 2009; Holmemo and Ingvaldsen, 2015).

Lodgaard *et al.* (2016), for example, found that top managers and middle managers perceive different barriers to lean implementation. In a two-year in-depth case study, they found that top managers see that the barriers lie within the shortcomings of improvement methods and supporting technical systems. The top managers did not see their own leadership practices as a hindering factor. In contrast, middle managers see the greater constraints in management commitment, management support and in the lack of an appropriate organisational infrastructure. Both groups reported a lack of knowledge as an inhibiting factor. If the perceived barriers differ, perhaps leadership practices should differ across organizational hierarchal levels too.

Table I differentiates and defines five typical levels of managers in large firms: Chief Executive Officer (CEO), senior executives, plant managers, department managers and first-line managers. In medium-sized firms with one location, it is not unusual for the three upper levels to be merged into top management. In small firms with only one location, there may only be two management levels: top management and first-line mangers. Generally, it makes sense to separate three hierarchical levels: top-management, middle management and front-line management.

Many lean transformations fail already at the top-level of the company. Without a committed CEO and committed senior executives, a lean journey cannot be sustained (Lucey *et al.*, 2005). Top-managers must fully back and support a corporate lean programme from the onset. Yet, Axelsson *et al.* (2005) report that resistance to change can occur at top-management levels owing to a lack of clarity and uncertainty about change, pressure and the challenges presented with learning something new. Senior managers must create the right set of guidelines such as a vision, strategy, goals and direction (Liker, 2004; Emiliani and Stec, 2005). The lean programme must be part of the long-term strategy and resourced accordingly. Understandably, top-managers cannot commit fully to something they do not understand and believe in. Therefore, many lean programmes start with extensive top-level management training. It is not enough for top managers to just be symbolically committed to the lean programme; they must also actively participate in the lean transformation themselves (Lorsch and McTague, 2016; Netland, 2016; Camuffo and Gerli, 2018). A lack of top-level commitment may also lead to a host of other issues including limited access to

Hierarchical level		Description	Examples of titles
Top-management	Chief Executive Officer	The boss. The one at top of the pyramid with most decision power. Reports to the Board of Directors	CEO, Managing Director, President, etc.
	Senior executives	A team of individuals at the highest level of an organisation, who set goals for the organisation and direct the company to achieve them. Top managers make decisions affecting the entirety of a business unit	Vice President, Senior VP, COO, CMO, CFO, CIO, etc.
Middle management	Plant managers	The individual with responsibility for the plant/factory/site. Plant managers are responsible for carrying out the goals set by the senior executives while supporting their subordinates in task completion	Plant manager, Factory manager, General manager, etc.
	Department managers	Individuals who are responsible for executing organisational plans – acting as an intermediary between site management and first-line management. Department managers are responsible for carrying out the goals set by the site and top-managers while supporting their subordinates in task completion	Production manager, Logistics manager, Purchasing manager, Quality manager, etc.
Front-line management	Front-line managers	Individuals who are responsible for the daily management of shop floor workers. Front-line managers focus on directing and controlling, serving as role models for the employees they supervise	Supervisor, Group leader, Team leader, etc.

Table I.
Hierarchical levels of management

resources, lengthy decision-making processes and communication breakdowns (Scherrer-Rathje *et al.*, 2009; Jadhav *et al.*, 2014).

Even if an organisation is able to secure the full commitment of its top-managers in the lean transformation, it is still no guarantee that the transformation will be successful. Liker (2005) suggests that although the difference between success and failure starts with top managers, middle managers (who have the role of directly managing the "value-adding employees") ultimately carry the process. As such, many lean initiatives unfortunately terminate at this level in the organisational hierarchy. Here, plant managers and department managers often feel squeezed between the top managers' new initiatives and the demanding requirements of front-line operations (Manville *et al.*, 2012; Holmemo and Ingvaldsen, 2015).

Consequently, many ambitions for successful lean transformation are shattered at the middle management level. Problems reported include the fact that employees are not properly informed about the change (Cudney and Elrod, 2011), a frequent lack of team autonomy (Scherrer-Rathje *et al.*, 2009; Van Dun *et al.*, 2017) and difficulty in assigning performance effects to lean transformations. The results of Van Dun *et al.* (2017) suggest that middle managers often fail to modify their frequent command and control style,

limiting employee engagement and hindering lean implementation. Because middle managers may be hard to convince, some organisations try to avoid them altogether; Holmemo and Ingvaldsen (2015) found that the common implementation approach where internal experts and external consultants (sponsored by top management) work directly with shop-floor employees to implement lean techniques failed because middle managers were bypassed.

Furthermore, lean is in essence about involving the whole workforce in continuous improvement activities. If a company is not able to engage front-line management and shop floor employees in the lean activities, it is by definition not a lean company. The challenge at this level is to create lean teams (Van Dun and Wilderom, 2016), which requires front-line managers to engage in a special form of leadership. Although often neglected in the rich literature on lean, this level of leadership is also essential for succeeding with a lean transformation and sustaining it.

Discussion

In the following, we draw on our rich experience with studying, leading and consulting numerous companies in their lean transformations to discuss how the six lean leadership practices identified in the review of the literature needs adaptation at the different hierarchical levels.

Lean leadership practice 1: go and see

A common advice is that managers should carry out gemba walks to be on the shop floor regularly. Some authors recommend daily or weekly gemba walks even for top managers (Byrne, 2013), but common sense indicates that this advice is too general to be useful. For example, on the one hand, an executive who oversees several plants would find it very impractical to have frequent visits to the shop floor in all sites. The CEO is also responsible for the "gembas" of many other functional departments (e.g. sales, marketing, product development, human resources, finance and so on), and frequent visits to all areas would quickly fill the CEO's work calendar. On the other hand, front-line managers are always on the shop floor, so dedicating a special time in their daily schedule for gemba walks at all levels seems meaningless in this respect. Therefore, we find it useful to define different gemba walk routines based on the management level.

We notice that the practice of "go and see" must differ in plants of different *sizes* and in plants that are at different levels of *lean maturity*. A generalisation here would be that if the size of your factory is large, plant-wide gemba walks may be less efficient and effective. Gemba walks should also be differentiated according to the lean maturity of the plant. A manager that walks the shop floor of a very non-lean plant risks being pulled into a reactive "firefighting" approach to problem-solving inherent to this type of factory. As the factory gets started with lean, frequent gemba walks are needed to motivate and lead the transformation. As the factory has succeeded in building a lean culture, gemba walks will become a natural part of how managers lead the factory (Mann, 2009; Camuffo and Gerli, 2018).

Top-level managers could conduct weekly, bi-weekly or monthly gemba walks depending on the size and lean maturity of the firm. They do not need to visit the same areas every time but should spend time with front-line employees, not just meeting local senior staff (Hines and Butterworth, 2019). There are two main objectives with gemba walks at this level. First, it keeps top-management connected with what is happening at the shop floor. Second, it signals commitment and interest of top-management to the employees of the shop floor. Top-managers do not have to spend hours to meet these objectives. Instead, they

should dedicate the visit to a few visible areas (perhaps on a rotating basis) and use it to increase motivation for the lean transformation, identifying specific challenges and areas of improvement together with the middle-/front line managers who will follow up on these discoveries. Rather than collecting a long list of improvement suggestions (which usually never turn into improvements), they should focus on one or a few issues that are needed to meet the target situation in the visited area. Top-managers should promote the underlying lean principles and culture rather than the tools and techniques that are mostly visible (Mann, 2014). They should coach middle managers and encourage critical thinking in the organisation. They should also recognise wanted behaviour and help improve unwanted behaviour (Hines and Butterworth, 2019).

Middle managers should conduct structured gemba walks in their area of responsibility more frequently (Camuffo and Gerli, 2018) – daily or weekly – depending on the size, lean maturity and practicality. The most common generic advice for gemba walks apply to this hierarchical level of management. The task of middle managers during gemba walks is similar to that of top managers: instilling support, motivation and levers to support the lean transformation. A plant manager in a lean plant visits the shop-floor at least once a week. The most dedicated plant managers are on the shop-floor on a daily basis.

First-line managers are almost always on the shop floor. If not, they should be moved to the shop floor. Thus, we suggest that they have no need for specific gemba walks as a separate lean leadership routine as they should already be involved in observation and coaching of their team in real time (Hines and Butterworth, 2019). They should, however, take part in gemba walks of the middle managers and could use the opportunity to walk and observe different areas of the company.

Lean leadership practice 2: daily layered accountability
It is widely accepted that each level of the organisational hierarchy in a lean organisation should participate in short standing-up meetings so that everybody becomes familiar with the current condition of the operations, every day (Mann, 2014; Netland *et al.*, 2015). In this way, the daily layered accountability principle is realised. Note that many service industries seem to prefer the term "daily team huddles".

Daily stand-up meetings should extend beyond shop floor operators and the front-line management. It is, however, common for many non-lean firms to implement daily layered meetings only at the lowest level. The findings are then summarised into weekly reports (if at all summarised) that are discussed in sit-down meetings on a weekly basis at the middle management level. Finally, top management often only reviews the operations on a monthly basis. This is far too slow for a lean plant.

In a lean plant, every manager up to the plant management should know the status of operations on a daily basis. Hence, both front-line and middle management should be involved in the daily layered accountability system. Best practice for layered accountability is that all management levels within the plant meet daily so that issues can be escalated up the hierarchy efficiently and information can be shared quickly throughout the organisation. To make the layered accountability efficient, only non-conformance issues should be escalated to the next hierarchical management level. The layered stand-up meetings break down silos between departments and ceilings between hierarchical levels in the organisation.

At the top-management level (C-suite, executives and VPs) weekly meetings would usually be a good frequency. In larger organisations, such leaders are rarely to be found in the same building, let alone the same country (in fact, given such a situation, weekly video-conference calls have been used as a suitable alternative to stand-up meetings). Most

important here is that monthly meetings are too few and far between to be useful in a lean organisation. However, in a smaller organisation (typically represented as a single plant where the plant manager is in effect the CEO), we suggest that daily stand-ups apply across the board.

Lean leadership practice 3: structured problem-solving

In lean organisations, structured problem-solving is the automatic response to any non-conformance at the shop floor. Top managers take the responsibility of helping to identify the improvement, as well as sponsoring its implementation, while middle managers learn to manage structured problem-solving processes, for instance, using Deming's PDSA cycle. This structure is also replicated between middle managers and front-line managers, where the focus of the improvement often becomes more operational and based on testing and improving the current standard, albeit in PDSA-cycles of shorter duration. Note that to identify non-conformance in the first place, a minimum of standard operating procedures and product quality checks are needed.

Structured problem-solving begins with an understanding of the current condition. Then a problem or improvement opportunity is clearly described and quantified. The next target condition or goal is defined and an analysis of the challenges, obstacles and/or root causes that prevent the organisation from achieving the next target condition is subsequently carried out. This results in an action plan that systematically addresses each of the prioritised challenges, one at a time. The structured problem-solving process then continues by studying the effects of these individual changes, before defining a new standard for the process in question. The process is completed by sharing the lessons learned with others (a process the Japanese call "yokoten").

Structured problem-solving should be applied at all levels of management. The busiest managers however – C-suit managers, executives and plant managers – usually employ experts in support functions or from external consultancies to help them conduct the structured problem-solving methods and make sure that decisions are based on facts not feelings. All other leadership levels should own and conduct their own problem solving methods.

Lean leadership practice 4: continuous improvement

Continuous improvement is the ultimate goal of any lean journey. The ability to engage all employees in continuous incremental improvement is a trait of a good lean leader. Both top and middle managers must not only be willing to sponsor the lean initiative, but also assume a proactive role in the change management process through participation as well (Netland, 2016). Top managers mentor middle managers by constantly challenging and encouraging them to reflect on the current condition and to develop and test alternatives for the next target condition (Rother, 2010; Liker and Convis, 2011).

The most common visual tool for continuous improvement is the *kaizen board*, which is a means of visually managing the *suggestion system*. Front-line managers should always present at the shop floor stand-up meetings, while middle managers would typically participate in kaizen meetings with front-line managers in an "Obeya" (literally "big room" in Japanese). Obeya is a "visual" space that fosters collaboration and the exchange of knowledge. The reason for this distinction is that middle managers tend to run larger-scale improvement projects, which are more tactical than operational in nature. Top managers are primarily involved in forming and deploying the business strategy (hoshin kanri) as well as large strategic improvement projects, which are again followed up together with middle management in an obeya. In lieu of a physical obeya or for projects that span organisational

boundaries, firms can blend virtual obeyas (an online project management and collaboration space) with meetings close to the shop-floor. Figure 1 illustrates the kaizen hierarchy and responsibilities of different management levels.

Lean leadership practice 5: coaching
The primary task of a lean leader does not revolve around improvement *per se*, but around increasing the improvement capability of people (Rother, 2010; Ballé *et al.*, 2016). This is achieved through a system of coaching at the gemba, also known as a "coaching routine". The system follows the logic of "train the trainer" – or in this sense "coach the coach". Each layer of management should ideally be able to coach the subordinate level. Unfortunately, this is rarely the case in most firms. Often, top management is recruited from other firms and chosen among candidates with the "right papers" or, worse, the "right connections". This poses a serious challenge for lean leadership. When subordinates have to coach their leaders, lean transformations usually fail. A further common challenge is that some managers are not receptive of the idea of being a coach. Rather, they'd like to take decisions and "manage". These two challenges should be understood and reduced before attempting to deploy coaching leadership in an organisation.

In terms of content, operational front-line managers should be more concerned with coaching for on-the-job training in addition to operational problem-solving skills. Top and middle managers should focus more on developing lean leadership capabilities among their subordinates.

Lean leadership practice 6: strategy deployment
Though the lean philosophy emphasises bottom–up continuous improvement to realise any significant, sustainable results, lean efforts must also be enforced top–down by linking improvement activities to the strategic vision and goals of the organisation (Cudney, 2009). As such, hoshin kanri has been suggested as a powerful method to capture the strategic goals of an organisation and integrate these with daily operations. Long-term (often five-year or more) strategic plans and the annual strategic goals are defined by the top-management group.

Known as the "catchball process", top managers initiate an annual strategy planning process and toss it like a ball to the middle management, who responds with tactical goals and toss it back. After consensus is reached, the middle management repeats the process by communicating the goals to the front-line management, who responds with operational goals. These strategic goals are cascaded throughout the organisation. In response to the strategies of top managers, middle managers define tactical goals and annual action plans in

Management level	Type	Typical number per year	Project management lLocation
Top managers	Strategic	~5 to 10	Board room
Middle managers	Tactical	10s	Obeya
Front-line managers	Operational	100s	Shop floor

Figure 1.
Kaizen hierarchy and responsibility of different management levels

their area of responsibility. Front-line managers help to realise the plans on an operational level. Hence, regardless of hierarchical level, each of the managers in the organisation have a defined activity plan for the year that is aligned with the overall annual strategic goals of the organisation through a set of common key performance indicators (KPIs) and, for more mature lean organisations, key behavioural indicators (KBIs; Hines and Butterworth, 2019).

Conclusions

On the basis of our many years of collective experience in studying, consulting in and practicing lean leadership, we offer a commentary on lean leadership. We argue that lean leadership practices must be differentiated across different managerial levels to help alleviate the various barriers we have summarised. In this conceptual paper, we discuss how six leadership practices are the key to a successful and sustained lean transformation, and how they should be enacted across front-line, middle and top management, respectively. The six lean leadership practices discussed are "go and see" (gemba walks), "daily layered accountability" (stand-up meetings), "structured problem-solving", "continuous improvement" (kaizen), "coaching" and "strategic alignment" (hoshin kanri).

In terms of contributions to practice, we do not claim that the lean leadership model we present here is prescriptive and the only way a lean transformation should proceed. On the contrary, we offer the advice simply as a thinking frame to be tested by organisations seeking a lean transformation. Take it, adapt it and find your own way – in the spirit of continuous improvement. To be successful with lean leadership, one must first get started. We have learned that the level of success of an organisation's transition towards lean is a direct reflection of the qualities of its leaders.

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