The Missing Link: Lean Leadership

BY DAVID MANN

SUMMARY • People often equate "Lean" with the tools that are used to create efficiencies and standardize processes. However, implementing tools represents at most 20 percent of the effort in Lean transformations. The other 80 percent of the effort is expended on changing leaders' practices and behaviors, and ultimately their mindset. Senior management has an essential role in establishing conditions that enable that 80 percent of the effort to succeed. Their involvement includes establishing governance arrangements that cross divisional boundaries, supporting a thorough, long-term vision of the organization's value-producing processes, and holding everyone accountable for meeting Lean commitments. This is accomplished through regular, direct involvement. When upper management sets the example, durable Lean success and an increasingly Lean leadership mindset follow.

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Introduction

There is a missing link in Lean. This missing link is the set of leadership behaviors and structures that make up a Lean management system. Lean management bridges a critical divide: the gap between Lean tools and Lean thinking. Systematic Lean management separates Lean initiatives that start well but falter from those that sustain initial gains and deliver further improvement.

Lean management bridges a critical divide: the gap between Lean tools and Lean thinking.

Senior leaders play a central role in Lean management. Their contributions are essential in:

1. Developing and implementing structures and processes that anticipate and respond to the difficulties of a Lean initiative that crosses internal boundaries;
2. Transforming commitments to change into actual change, supporting and sustaining new behaviors and practices;
3. Increasing the odds that process improvements survive the transition from project mode to ongoing process;
4. Establishing and maintaining new, process-focused measures alongside conventional measures of results;
5. Creating conditions in which a sustainable Lean culture of continuous improvement can develop.

For an enterprise-wide Lean initiative to succeed, leaders at three organizational levels must play complementary roles. Figure 1 shows a schematic of these three levels, areas of primary contribution, and tasks. Note the overlap between adjacent levels. This overlap reinforces continuity of support for new practices throughout the organization, e.g., disciplined adherence, attention to process performance at intersections, and gemba walking (which takes managers to the front lines to look for improvement opportunities). This continuity maintains the internal integrity of Lean tool implementations and the Lean management system.

Most of the literature on Lean conversions has focused on implementing the Lean tools (to create flow, establish pull, support just-in-time production, etc.) in manufacturing (Womack and Jones 1996; Rother and Shook 1998; Dennis

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Figure 1. Organizational Roles and Contributions to Sustain a Lean Initiative

Leadership Roles in Sustaining Lean

Organization Level	Primary Contribution	Tasks	Secondary Contribution	Tasks
Strategic: Senior (CEO, Sr. VP)	Governance; Steering and oversight	Support for a cross-boundary perspective	Measurement; Adherence to post-project processes	Monitor intersection measures; Gemba walks
Programmatic: Function (VPs, Directors)	Accountability	Meet project commitments; Manage intersection performance	Disciplined adherence; Commitments to processes post-project	Collaborate in process management; Gemba walks
Tactical: Department (Managers, Supervisors)	Tactical Lean Mgment System	Disciplined adherence; Gemba walks	Associate engagement; Continuous improvement	Teach, practice root cause problem solving

2002). Some of the literature has explored Lean tools in healthcare, office settings, or product development processes (Graban 2008; Keyte and Locher 2004; Swank 2003); or focused on leadership rather than tools (Mann 2005; Spear 2004). Critiques of the tools-only focus note that even brilliant use of tools without changes in culture rarely produces lasting change, or even lasting improvement. But, what does culture mean in the context of Lean conversions?

Culture, Reinforcement, and Persistence

For purposes of this discussion, culture is simply the sum of how those in an organization would describe "the way we do things here." These customary ways of operating often directly contradict stated rules and policies. Behavior—i.e., the customary way of doing things—both creates and reflects actual culture regardless of the official definitions of what is to be done, or how. Behavioral science shows that reinforced behaviors persist, which helps explain how cultures develop. In an organization, the most important source of reinforcement is leadership. "The way we do things…" in other words, reflects leaders' reinforcements, conscious or not.

Successful sustained Lean conversions often involve changes in culture. So it follows that success in Lean implies a change in what leaders reinforce—a change in leadership behaviors and practices. The failure of most Lean initiatives can be pinned on a failure to change leadership practices (Mann 2005).

As Figure 1 suggests, effective Lean leadership comes from the top as well as from lower in the organization. Post-mortem discussions of unsuccessful Lean implementations often blame the initiative's collapse on a failure to adhere to the Lean design at lower levels. This failure in turn is often caused by changed, weak, or absent support by senior leadership— CEOs and their direct report senior VPs. All three levels called out in Figure 1 are important, and closely related.

Lean Principles and Value Streams

Womack and Jones (1996) identified several Lean principles. Their first is that value is defined from the perspective of the customer. The second is that value streams need to be identified. Value stream is another way to refer to a process; often, and especially in healthcare, processes include multiple steps. Moreover, in complex organizations, most value producing processes cross many departmental and functional boundaries. Many units in an organization play value-added (and frequently non–value-added) roles in the value streams.

For example, the following departments are parts of a surgery value stream: admitting, scheduling, medicine, radiology, laboratory, surgery, operating room management, pharmacy, nutrition services, nursing, patient transport, housekeeping, finance, billing, social work, purchasing, and compliance and audit units. There are many multi-step cross-functional processes on the administrative side as well. Consider those involving customer service, registration, billing, medical records, third-party payers, IT, clinical quality, and others. For purposes of our discussion, Lean improvement projects focus on improving the performance of the value-producing process, the value stream, as a whole.[1]

If customary ways or habits are one complicating factor in Lean transforma-

tions, organizational boundaries are a second. In a word, this is the problem of turf. Womack and Jones' third principle of Lean calls for finding and eliminating the interruptions—such as turf battles—that impede the flow of value.

Organizational boundaries often create flow interrupters in the value streams of complex organizations. For example, Radiology resists moving available equipment into the Emergency Department (ED) even though it would speed ED patients' diagnosis, treatment, and discharge. Such a move would hurt Radiology's productivity and overhead numbers—they would have to staff and maintain assets beyond their boundaries. So, Radiology's focus on internal measures of productivity and efficiency compromises customer value—the patients' desire for speedy treatment and release.

Wise executives leading Lean initiatives recognize that people in functional organizations naturally resist cross-functional initiatives.

Some tools-only approaches to Lean focus on productivity or service quality in individual departments, creating islands of improvement. However, improving value from the customer's perspective nearly always involves collaboration across boundaries, even when improvement might appear from a distance to be the result of change in a single department. For example, reducing central line infections, which appears to be a single point focused effort, in fact is the result of information and procedure changes across several organizational units—admissions, residency supervision, intensive care, pharmacy, nursing, and phlebotomy (Spear 2005).

CEOs and Senior VPS: System-Level Intervention for Lean Governance

Wise executives leading Lean initiatives recognize that people in functional organizations naturally resist cross-functional initiatives. This is often worse in
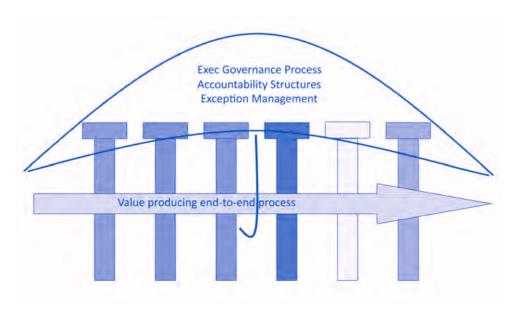
FIGURE 2. SYSTEM-LEVEL SUPPORT FOR A VALUE STREAM PERSPECTIVE

Exec Governance Process
Accountability Structures
Exception Management

Value producing end-to-end process

multi-specialty, multi-stakeholder organizations such as healthcare institutions and universities. In a functional organization, horizontal processes—value streams—do not appear on the organization chart. No one is responsible for managing a value stream. Value streams have no independent budget or resources. And measures of value stream performance rarely appear among those considered important; in fact, measures rarely exist for horizontal processes.

Lean governance responds to the dilemma of a process approach within a functional organization without changing the formal structure. These arrangements are represented in Figure 2. A senior executive governance process is the first step. The second is an accountability and exception management structure. The executive governance process should create recognition of and commitment to a sense of common purpose across boundaries. The commitment to a shared view of customer value carried across organization boundaries is required for an effective approach to value stream improvement projects. Later, this commitment sustains and extends the project's gains.

The executive governance process has two elements. The first is an executive Lean steering and oversight (LSO) group made up of the CEO and his or her senior vice president direct reports. The LSO group calls for, sanctions, and supports Lean value stream improvement projects. These steps mandate a "virtual process organization" for the entire Lean value stream improvement project. The LSO group insists that VPs, directors, and department managers consider the entire organization when evaluating proposed changes to the value stream, rather than taking a parochial

internal perspective. The LSO group also requires leaders to support planned improvements, even when that requires changing processes or priorities in their areas of responsibility.[2]

The second element of the executive governance process occurs at the project level. It consists of a project resource and accountability (PR&A) panel made up of leaders of the functions or departments in the value stream targeted for improvement. It is an informal group, a steering team for the project rather than an element on the org chart or an item in anyone's job description. The leader of the PR&A panel, the value stream sponsor, is usually the leader of the function or department that encompasses the largest portion of the value stream or whose area is most critical for the customer in the value stream's performance. As value stream sponsor, the panel leader is responsible to the Lean executive governance body, the LSO, for setting appropriately bold objectives (e.g., 50 percent reductions in cycle time, errors, and rework) for the project, and for executing the plan to achieve them.

The LSO oversees the value stream Lean projects. The organization's Lean initiative leader serves as secretary and agenda manager for the LSO, and he or she tracks progress of all the projects. When a project stalls, the Lean leader invites the project's value stream sponsor to brief the LSO on the project's status.

These updates usually result in action to overcome the project's obstacles, which might include, among other factors, unmet commitments by a unit represented on the PR&A panel, unavailable resources, or conflicting priorities. PR&A panel members report directly to LSO members, or individuals one level below

the LSO. So, LSO members can remove obstacles or encourage more vigorous support for projects, by their direct intervention or through the Lean leader.

Vertical and Horizontal Accountability for Improvement

The relationship between the two elements of executive governance—the LSO group and the PR&A panel—implies an expectation for accountability between the LSO and PR&A, an expectation made explicit when process sponsors are invited to brief the LSO.[3]

> *If achievement of the project's objectives requires compromise and collaboration with other departments in the value stream, so be it.*

The expectation of the executive governance process is for the subordinate functional VPs and directors to meet the commitments they have made to Lean value stream improvement project teams. The expectation of the value stream sponsor is for LSO support in removing obstacles. Accountability in the formal authority structure is normal. But accountability also flows horizontally among the PR&A panel members, which is unusual in functional structures.
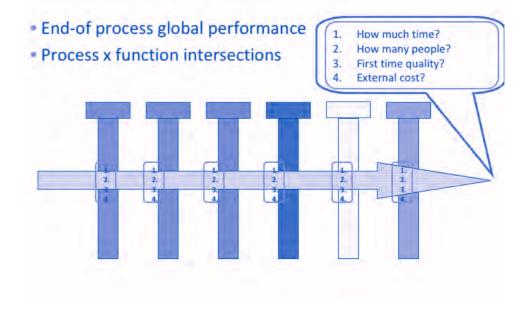
LSO group members make clear within their units and during project updates that commitments to Lean projects are to be met. If achievement of the project's objectives requires compromise and collaboration with other departments in the value stream, so be it.

VPs and Directors: Meeting Commitments to Projects and Intersection Measures

As seen in Figure 3, measures of process performance for most value streams are straightforward and scalable. A value stream's process measurement set typically consists of safety, quality, delivery, and cost.

Safety covers workplace accidents and injuries. The quality measure

FIGURE 3. VALUE STREAM PROCESS PERFORMANCE MEASURES

includes defects, errors, rework, first-time quality, and customer satisfaction. Delivery (or throughput velocity) refers to total cycle time, or the total end-to-end time from beginning to end of the process (sometimes known as total lead time). Cost is measured by labor hours (also known as process time, or touch time) and externally purchased services and materials.

All of these measures apply to the process in its entirety, as end-of-process measures. And, each of them applies just as appropriately to a function's or department's performance at the point where the process intersects the function. Value stream improvements can almost always also be described in terms of discrete improvements in safety, quality, delivery or cost *within* departments, or at *between-department* handoffs.

This translates into concrete measures of collaboration and commitments. PR&A panels meet at 30-day intervals to review their project team's progress. These "intersection" measures put the value stream sponsor's job of working with peer PR&A panel members on project governance on a more straightforward and objective footing; intersection measures meet their goals or not. And, it puts the LSO's assessment of project status on an objective footing, along with corrective action members might direct in their own organizations.

So, responsibility for accountability overlaps the boundary between senior and subordinate executive leadership levels (in Figure 1, between levels 1 and 2); accountability is a task and responsibility at each of these two levels. This is also the case between level 2 executives and department managers (see Figure 1). In fact, disciplined execution permeates all

three levels of leadership in a successful Lean initiative.

DEPARTMENT MANAGERS: TACTICAL LEAN EXECUTION

Lean applications, the Lean "tools," are the focus of most discussions about Lean. The tools are typically seen where the task-level work gets done, at the department level. Some examples include: color-coded patient garb indentifying those at risk of falling; visual indicators in an ED signifying ready for X-ray; regular routes for replenishing consumable supplies in patient rooms; standard procedures for handling incoming hard copy charts and a *takt* pace (a pace that matches production to demand) for scanning them into electronic medical records; and standard procedures in sterile processing with one-procedure-ahead tray delivery to the OR.

These are a few of many applications of Lean tools. As noted earlier, although these tools may on the surface appear to be single point, within-department process improvements, many involve two, three, or multiple organizational units. Rapid improvement activities, or kaizens, within individual departments are important for the experiential learning central to developing a broad base of Lean thinking in an organization. But kaizens tied together as the implementation plan of an end-to-end process are far more potent in changing organizational, as opposed to departmental, performance.

This tactical level of Lean is where emphasis on disciplined execution is clearest, the primary Lean responsibility of departmental management. The frequently updated performance tracking charts, focus on root cause analysis and problem solving, value stream mapping,

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and kazien projects are all based on adherence to standardized methods. This approach is in keeping with the scientific method, i.e., systematically vary the independent variable (the planned change to the standardized procedure) and observe the variation in the dependent variable (the process outcome to be improved). If improved outcomes are observed as predicted (safer, fewer defects, faster, or less costly) verify the causal relationship, and then institute the changed procedure.

Lean is a high-maintenance approach....
Most of us prefer to do things as we always have....It is what humans do.

For departmental managers, supervisors and team leaders, this approach is called a Lean management system (LMS). It is a set of leadership practices, tools, and behaviors that creates a closed loop system for focusing on process and driving process improvement. This system is, in effect, a behavioral recipe for disciplined adherence to process. It has three core elements: visual controls, consisting of frequently updated process performance charts; standard accountability processes; and standard work for leaders ("leader rounds"). Among other things, leader standard work ensures execution of standardized processes. Leader standard work also ensures performance-tracking data are well and faithfully recorded, and then, in accountability processes, converted into assignments for problem solving and corrective action. Finally, leader standard work ensures consistent execution of the resulting improved process. Figure 4 shows this closed loop process. (For a full discussion of the Lean management system, see Mann 2005).

Leader standard work is developed with intentional partial redundancy upward through the chain of command. In a Lean design, value adding task-level personnel spend virtually 100 percent of their time following task-level standardized pro-

FIGURE 4. LEAN MANAGEMENT AS A CLOSED-LOOP SYSTEM FOCUSED ON PROCESS TO DRIVE IMPROVEMENT

cedures. Some examples are: Following the defined process when consumables in a specific location reach the reorder point; observing defined times and routes for picking up lab specimens; ED providers adapting to agreed protocols for patient prep; OR managers following the intent, not just going through the motions of pre-surgery checklists; patient care assistants following prep-for-X-ray procedures; or unit clerical staff following standards for preparing hard copy chart documents for scanning. Team leaders spend most of their time —70 to 80 percent—making sure defined procedures in their areas, such as the above examples, are being followed. The rest of their time is available for troubleshooting and work on improvements. Supervisors spend roughly half their day on standard work, including verifying execution of one procedure or practice in each team leader's area per day, and reviewing the team leaders' standard work documents. The department manager's standard work might account for 25 percent of the day, and includes spot checks of a procedure or practice per day per supervisor, as well as reviewing supervisors' standard work documents.

Directors and above also have standard work, but more in the form of a checklist to use when they are in their groups' work areas. The expected frequency and duration of tasks in executives' standard work is quite a bit less than for department managers and below, perhaps only an hour a week. The executive checklist should nevertheless include verifying procedures and practices at the task level—where the value-adding work takes place—are being faithfully executed, and asking to see the standard work document (is it current? is it being followed? are problems encoun-

tered and interruptions to expected routines noted?) of at least one of the leaders between the task level and the executive. This built-in redundancy reflects the importance of standard methods as the foundation of Lean execution, as well as the basis for Lean as an improvement system. If the independent variables are being held constant, outcomes should be predictable, and when not, sources of variation are more readily diagnosed and eliminated.

CEO to Department Manager: Lean in Every Leader's Role

Expect Lean applications to require a surprisingly high level of attention. Lean is a high-maintenance approach. Though this may seem paradoxical, it is true for two reasons. The first is that most of us prefer to do things as we always have. Without an ongoing and consistently reinforced set of behaviors that replace our habits, we revert. It is what humans do.

Second, Lean applications require attention because they are designed that way. Specifically, Lean processes are designed to be, well...Lean. That means consuming the least material and time; the least space, inventory, and equipment; and overall the fewest resources possible—and maintaining this level requires attention. Moreover, Lean processes are designed to be sensitive to abnormalities such as defective inputs, scrambled timing and sequence, and other variances from specified operating conditions. Has sterile processing returned to batching rather than procedure-by-procedure preparation, one per OR at a time? Are labeling procedures being followed for lab specimens when nurses are busy? Are procedure carts left where last used rather than returned to the designated

location? Are they restocked with some but not all of the regularly used consumables? Is the ED stat lab getting specimens a patient at a time, or batched by corridor or wing?

Lean processes are designed to highlight problems. In a Lean thinking mindset, problems are valuable nuggets of information to be mined for clues to the best places to make improvement. By contrast, in a conventional mindset, problems are obstacles to be worked around, buried, and forgotten, even if they constantly recur. Lean processes are precise and delicately balanced, but efficient and predictable. Conventional processes may not be efficient or predictable, but they are robust with respect to variation, and with enough time, resources, and heroics can be "muscled through."

The longer an organization pursues Lean, the more opportunities for improvement it sees.

Lean is often mischaracterized as being all about cost reduction. In fact, it is quite different from any conventional method for lowering costs. Lean most definitely reduces costs, but as an ancillary benefit. Consider the fifth of Womack and Jones' five principles of Lean: strive for perfection. In context, this means continuing to iterate your way through the first four principles (identify customer value, find the value streams that produce it, eliminate impediments to let value flow, and arrange for customers' ability to pull value when and how they want it) until you have achieved perfection: delivering value with zero non–value-adding activity. For scale, the best value streams in repetitive manufacturing industries operate at only a 10:90 ratio of value-added time to non–value-added time; many operate at a shocking 1:99 or below. The longer an organization

pursues Lean, the more opportunities for improvement it sees. When members of a Lean organization say, "We still have a long way to go," it is not false modesty. It is the result of constantly improving Lean acuity, the ability to see more clearly the next opportunities.

LEAN AS IMPROVEMENT: WHAT TO EXPECT

Lean is more than a cost reduction system. Instead, at its essence, Lean is an improvement system. Lean designs serve both as operational processes and as hypotheses. The hypothesis is that the current design is the best way we know *at present* to perform these steps or procedures. The implication is that associates and leaders are observing, recording data on process performance, and participating in learning. This is preparation for the next improvement—an application of Deming's iterative plan-do-check-act (PDCA) cycle, in which experience with an implemented plan (plan-do) produces feedback that suggests refinements (check-act), which are designed and implemented (plan-do), leading to further experience, feedback, and improvement.

Do not expect a Lean process conversion to be a set-it-and-forget-it proposition. The regressive pull of old habits and conflicting priorities and practices elsewhere in the organization, and the deliberate sensitivity to faults designed into Lean processes, make a Lean conversion a high-touch enterprise. Lean designs require attention to the faults, their root causes, and root cause corrective action.[4] Otherwise, temporary patches morph into permanent fixtures, the design degrades, and practices revert to the way we've always done things.

However, if the Lean design is accompanied by a Lean management mindset,

you will come to view the current process as an experiment. It will be an improvement, but also a way to discover further improvements. Shigeo Shingo, an important early participant in the development of Lean thinking at Toyota, noted that the best approach is to seek out problems where none are thought to exist so as to identify opportunities for further improvement (Shingo 1985). So, in the fifth Lean principle—strive for perfection—the emphasis falls on "strive," as in "don't cease working on improvement."

Gemba Walking: A Teaching-Learning Model for Leaders at All Levels

Given that Lean is an intentionally high maintenance approach, and that Lean management sustains it, it should not be surprising that a standard approach exists for leaders to monitor Lean management practices. The practice follows a three-part rule: 1. Go to the place. 2. Look at the process. 3. Talk with the people. This process has two benefits. When senior executives go to the work area, carefully observe the work as actually done, and inquire about the process, they reinforce Lean management practices, which sustain and extend the gains from Lean conversions. This benefits the Lean initiative.

A second benefit comes when the senior leader goes to the work area, accompanied by a Lean coach and prepared with diagnostic questions to guide his or her observations, questions, and conversations with those in the area. This benefits the executive by engaging him or her in active and challenging experiential learning about Lean principles and the issues that arise when implementing them.

The practice of regularly going to the Lean workplace to see the actual practices is known as gemba walking. Gemba translates as the "real place," where the action of interest happens—where the value-adding work occurs. Executives should expect to spend 45 to 60 minutes every week or two gemba walking with a Lean teacher, or sensei, for six months to a year. Thereafter, they should regularly gemba walk on their own. Gemba walks are crucial to maintaining the disciplined adherence to Lean process designs, part of the Lean support role permeating all leadership positions. Gemba walks form the connective tissue that maintains the gains from Lean and the muscle that drives further improvement.

Executives should read about Lean tools and principles, and attend a Lean event annually. But the principal Lean education for executives comes via structured gemba walking with a sensei-coach (see Mann 2005, Ch. 6).

Summary: A Lean Mindset for Lifetime Lean Leaders

Lean is more than just a kit of tools to improve flow and quality. It is a business philosophy, and to be effective over the long run, discipline is essential. Every leader must spend some of his or her time focusing on the adherence to the Lean process, and noting the improvement opportunities such focus reveals. Discipline is *the* essential element in sustained Lean performance.

Most Lean conversions fail to deliver the promised benefits or hold initial gains. These disappointments result from the mistaken belief that Lean is a cost reduction system, and once implemented, brings permanent improvement. This is simply not true. Lean conversions require a consistent Lean management approach.

Sustained Lean success requires a change in mindset and behavior among leadership, and then gradually throughout the organization. Lean success occurs when senior leaders put appropriate structures and processes in place and get personally involved in sustaining the Lean conversions, learning Lean, and developing other Lean thinking leaders throughout the enterprise. Lean management is surprisingly different from conventional leadership practices. It emphasizes visibly observable discipline and accountability. Unlike other approaches to improvement, these cannot be delegated. Lean provides the templates and practices that enable leaders to learn, and then look for, ask about, and reinforce the leadership behaviors that sustain the gains.

Lean provides the templates and practices that enable leaders to learn, and then look for, ask about, and reinforce the leadership behaviors that sustain the gains.

When senior leaders establish the system-level elements of Lean management, engage consistently in the Lean initiative, and adopt it as an important element in their organization's strategy and approach, benefits will accrue from a progressively Leaner leadership mindset. Eventually a Lean culture will grow from this consistent effort, and striving for perfection will become "the way we do things here."

NOTES

[1] Some Lean initiatives are more narrowly focused, concentrating on improvements within individual departments. While this approach can yield benefits, it is prone to producing isolated islands of improvement that have little cumulative effect on the customer's perception of value produced by the end-to-end value stream.

[2] In this way, senior executive sponsored Lean projects can act as vehicles for strategy deployment as well as for process improvement.

[3] An effective practice limits duration of implementation plans to 90 days at a time, with successive 90-day segments as called for. Ninety days is long enough for substantive improvement, yet short enough to maintain a sense of pace and urgency. Within the 90-day segments, weekly reviews internal to the project team, and monthly reviews with the PR&A panel, reinforce pacing and surface interrupters and obstacles early enough to respond, recover, and maintain pace.

[4] Although note that Lean thinkers are not insensitive to the need for temporary patches or countermeasures to keep the process meeting its commitments.

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