



Why and how do corporate lean programs change? A punctuated equilibrium perspective

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ABSTRACT

Multinational companies develop and deploy corporate lean programs to improve productivity and strengthen competitiveness. Although conceived as long-term strategic initiatives, these programs often lose momentum, shift direction, or fall short of their aspirations. Drawing on the punctuated equilibrium theory, we study the forces that trigger changes in lean programs and how they shape the outcomes of those changes. We collect an extensive, multi-case database of corporate lean programs and use temporal bracketing to qualitatively investigate 32 program changes across 17 companies. Our analysis identifies the forces that determine the need for and support of the program within a company. Furthermore, we derive four possible outcomes of change depending on the vector sum of the forces' directions and strengths. The findings are summarized in a framework tested in an on-site workshop with five companies. Theoretically, our punctuated equilibrium perspective offers a new understanding of evolutionary change in corporate lean programs. For practitioners, we present a practical framework that helps anticipate and prepare for looming changes in corporate programs. Relatedly, we offer a practical mapping tool that helps program managers proactively manage their programs.

1. Introduction

Multinational companies deploy corporate lean programs¹ to improve productivity at scale (Burgess et al., 2025; Netland and Aspelund, 2014). These programs are resource-intensive, year-long investments that aim to engage the entire workforce in building continuous improvement capabilities (Anand et al., 2009; Netland, 2013b; Schulze and Brusoni, 2022). When companies launch corporate lean programs, they usually do so with great fanfare, top management commitment, and considerable organizational and financial support. Companies invest significant time and resources when developing their programs, often with extensive and expensive external support from consultants (Grothkopp, 2023; Netland, 2013a). They commonly tailor elements from lean management and other process improvement philosophies (e.g., Six Sigma, world-class manufacturing, total quality

management) to the company's characteristics and needs. To seed and motivate organizational engagement, senior managers emphasize that the program is a strategic, long-term commitment to continuous improvement—not just another passing project. Strengthening this message, the program often carries the companies' names (e.g., Alcoa Business System, Bosch Production System, Volvo Production System) and corporate designs.

A corporate lean program is usually institutionalized within the organizational structure, with a considerable number of employees assigned to dedicated or part-time roles related to the program.² Moreover, the overall goal is to transform the *entire* company, not just production units, so that *all* employees regularly contribute improvement suggestions. Through such serious efforts, many companies have reportedly reaped significant operational improvements (Abreu-Ledón et al., 2018; Camuffo and Poletto, 2024; Fullerton and Wempe, 2009;

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¹ Corporate lean programs are also referred to as operational excellence programs, process improvement programs, company-specific production systems, continuous improvement, and other labels. In this paper, we use the term “lean program” (or “program”) for consistency.

² Some companies we have worked with suggest a rule-of-thumb of one lean change agent per 200 employees, which means that 50 people will have a lean program role in a company with 10'000 employees and 500 people (!) in a company with 100'000 employees.

Netland and Ferdows, 2016; Shah and Ward, 2003).

However, although corporate lean programs are intended as lasting efforts, it is a repeated observation that they crumble, collapse, or reshape—in other words, they *change*³ (Bateman, 2005; Hekneby, 2021; Sadun et al., 2017; Secchi and Camuffo, 2019; Taylor et al., 2013). Why? While the literature abounds with reasons why the required cultural transformation and implementing the program's principles and practices are difficult (Bateman, 2005; Browning and Heath, 2009; Lucey et al., 2005; Pesce and Neirrotti, 2025; Secchi and Camuffo, 2016), it has largely overlooked factors that make the *program itself* challenging to sustain. In addition, much of the research has concentrated on assessing critical success factors or barriers through the binary outcome of lean program success or failure, neglecting the complex and evolving dynamics underlying such programs (Bessant et al., 2001). This is unfortunate because corporate lean programs can evolve through a sequence of changes (see Scherrer-Rathje et al., 2009), which affects their ultimate outcomes.

To study these dynamics, we designed a multi-year, multi-organization exploratory study of changes in corporate lean programs (our unit of analysis). We identified and qualitatively collected information from 17 firms with corporate lean programs. Using the temporal bracketing technique from process studies (Langley et al., 2013; Van de Ven and Huber, 1990), we studied the antecedents and outcomes of 32 program change events in these firms. Theoretically, we draw on punctuated equilibrium theory, which suggests that organizations or systems experience periods of stability (equilibrium) interrupted by short, intense periods of significant change (punctuations) initiated by forces that introduce instability. This theory explains why change is often discontinuous rather than gradual, as organizations adapt rapidly during punctuations to achieve a new equilibrium.

We identified common forces that are salient during program changes and grouped them by their impact on a program's *raison d'être*. Each force can strengthen or weaken the program's necessity or support, thus disrupting its equilibrium. Spanning this across two axes, we identified four possible quadrants of change outcomes: when the program bursts out of equilibrium, the result will be (1) abandon, (2) pivot, (3) patch, or (4) boost. *Abandon* means closing or stripping the program of resources; *pivot* means a radical overhaul of the program; *patch* means making minor modifications to the program to adapt to changing forces; and *boost* means significantly strengthening or broadening the scope of the current program. We backed up the emerging framework with empirical examples of corporate lean program changes.

Our paper is the first to systematically and broadly investigate the evolution of corporate lean programs across multiple firms, scrutinizing the different types of change a program can undergo. Hence, we contribute new evidence on the evolution of corporate lean programs to a literature that has predominantly relied on single case studies (Hekneby, 2021; Lee and Jo, 2007; Netland and Ferdows, 2016; Ohno, 1982). More importantly, we present a theory-based and empirically derived framework for understanding program change. We evaluated the framework in a workshop with industry representatives engaged in corporate lean programs, which confirmed its practical utility. Our research helps managers proactively manage program changes and resources.

The remainder of this paper is structured as follows. Section 2 presents the theoretical background, including the punctuated equilibrium theory and its concept of deep structures. Section 3 describes our multiple-case research method. Section 4 presents the findings from the case studies and derives the framework. Section 5 discusses the findings in light of the existing literature and presents the results of a post hoc

³ For clarity, we use the term “change” in this paper when referring to a specific change of the program itself rather than the change that the program is designed to bring about. We use the term “evolution” when referring to sequential program changes over time.

utility test of the framework. Finally, Section 6 presents the conclusions, directions for future research, and limitations.

2. Theoretical background

2.1. Corporate lean programs

Companies launch corporate-wide transformation programs to improve productivity (Kunisch et al., 2023). The strategic management literature views such programs as “templates” that facilitate the transfer of practices across sites in dispersed networks (Burgess et al., 2025; Jensen and Szulanski, 2007; Lawrence, 2020). A typical and popular example of such programs is corporate lean programs (Netland et al., 2015)—also known under other labels like process improvement programs (Bateman and David, 2002), company-specific production systems (Netland, 2013a), lean production systems (Secchi and Camuffo, 2016), enterprise-wide lean management systems (Camuffo and Poletto, 2024), operational excellence (Friedli and Bellm, 2013), world-class manufacturing, (Lean) Six Sigma (De Mast et al., 2022), and others. With the idea that the essence of an entity is not bound by its label, in this paper, we refer to corporate lean programs as strategic, structured, and corporation-wide transformation programs that companies develop and deploy to improve operational performance across their subsidiary network (Netland and Aspelund, 2014).

It is rare to find a global manufacturing company that does not have a corporate lean program or has not had one over the past decades. A few examples among many include the Alcoa Business System (Turnbull, 2003), Mercedes-Benz Production System (Clarke, 2005), or Nissan Production Way (McSweeney, 2017). Such programs combine technological, technical, and organizational elements (De Mast et al., 2022). Usually, companies establish a program management team at headquarters, along with local and regional representatives responsible for driving the intended improvements (Boppel et al., 2013; Demeter and Losonci, 2019). The programs also often include visual campaigns, structured knowledge-transfer procedures, and assessment schemes of program implementation (Boscari et al., 2016; Danese et al., 2017). In sum, corporate lean program management teams have a variety of activities to manage (Grothkopp, 2023).

While corporate lean programs are designed to be lasting efforts, sustaining effective ones is challenging (Scherrer-Rathje et al., 2009; Secchi and Camuffo, 2019). Not only do program implementations vary across sites and over time as they progress, stand still, or regress (Netland and Aspelund, 2014; Netland and Ferdows, 2016), but the program *itself* often becomes subject to change. However, only a few scholars have studied the changes and resulting evolution of corporate lean programs (Al Hasan and Micheli, 2025; Bartezzaghi, 1999; Hekneby, 2021; Hekneby et al., 2022; Lee and Jo, 2007; Powell and Coughlan, 2020; van Driel and Dolfmsa, 2009).

Powell and Coughlan (2020) found that the corporate lean program of a Norwegian multinational company underwent two distinct phases, during which its characteristics, such as lean implementation assessments and knowledge sharing, differed fundamentally. In his conceptual work, Bartezzaghi (1999) outlined that programs evolve due to external and internal factors, but calls for a clearer understanding of these. Using the Toyota Production System as a case, van Driel and Dolfmsa (2009) examined the lock-in effect of events such as the 1949 financial crisis. They thereby pointed out the path dependence of such programs. Lee and Jo (2007) described how Hyundai developed its Hyundai Production System over several decades and highlighted the need to typologize (internal and external) factors influencing the evolution of such programs, which would help predict future change outcomes. With this research, we respond to this call. By outlining the evolutionary timeline of corporate lean programs in two companies, Al Hasan and Micheli (2025, p. 1439) found and argued that programs “should not be regarded as fixed, but rather as dynamically shaped by the actors involved,” yet the authors failed to explain what makes these actors act. Burgess

et al. (2025) investigated how a corporate lean program was adapted by a healthcare company in response to a crisis, focusing on the new capabilities that the program developed and how these supported the company in managing the crisis. Only Hekneby (2021), who studied the evolution of a corporate lean program in one firm, sought to explain program change by adopting a learning perspective and outlining the role of senior management. Given the considerable business investment in such initiatives, companies would benefit from a better understanding of program dynamics. Therefore, we studied the antecedents and outcomes of change in corporate lean programs. To do so, we draw on the punctuated equilibrium theory, which explains how organizational systems evolve over time.

2.2. Punctuated equilibrium theory

Punctuated equilibrium theory suggests that organizations remain relatively stable over time (“equilibrium”) but change significantly when the equilibrium is put out of balance (“punctuated”) (Romanelli and Tushman, 1994; Van de Ven and Poole, 1995). The theory originated from palaeontology as an opposing theory to gradualism in evolutionary theory. Speciation—the formation of new and distinct species—is not a gradual process but occurs in concentrated, sudden events (Gould & Eldredge, 1977, 1993). Tushman and Romanelli (1985) picked up on the terminology of “punctuated equilibrium” when seeking to explain organizational change. They described periods of convergence that are punctuated by shorter periods of strategic reorientation.

During the equilibrium phase, the organization is relatively stable. Only incremental changes and adaptations take place. In this phase, an organization establishes structures that sustain its current way of working, known as “deep structures.” Deep structures are forces that maintain the equilibrium (Gersick, 2020). It “is the set of fundamental choices a system has made of (1) the basic parts into which its units will be organized and (2) the basic activity patterns that will maintain its existence” (Gersick, 1991, p. 14). In the context of corporate lean programs, “deep structure” refers to the organizational routines and systems established to sustain the program. Examples can be organizational roles, daily meeting structures, and routine program assessments. Deep structures create inertia. They prevent the system from adapting to even the slightest changes in the environment (Romanelli and Tushman, 1994).

The stability of the equilibrium phase is eventually punctuated by events (Gersick, 1991; Romanelli and Tushman, 1994). Unlike the equilibrium phase, the comparably brief change phase is characterized by dramatic shifts that fundamentally reshape structures, processes, or strategies. Events can be single and sudden, such as the unexpected emergence of a competitor, the hiring of a new chief operating officer, or the availability of a new technology. However, it can also be the sum of a vector of events (Wollin, 1999). For example, a steadily declining financial performance, coupled with a strike and a product recall, could be enough to disrupt the equilibrium.

Additionally, Wollin (1999, p. 363) notes that events can be favorable or harmful to a given system, a concept he calls “polarity.” While Gersick, (1991) suggests that the deep structure must be entirely dismantled, Sabherwal et al. (2001) suggest that only parts of it can change. The latter is also propagated by Wollin (1999), implying that the change after a punctuation can be of different magnitudes and scales. At one extreme, a result can be bankruptcy and the end of the organization; at the other, rapid growth and prosperity. The changes in deep structure can therefore vary as well.

We argue that the punctuated equilibrium perspective is beneficial as it is not only suitable for corporate lean programs but also provides a nourishing ground for a better understanding of why and how these programs change. Beyond organizational change literature, the punctuated equilibrium theory perspective has also been adopted in the broader change management literature. Yang and DiBenigno (2025) employed a punctuated equilibrium perspective to investigate the

success of front-line employees in implementing new ideas during an organization's jolt periods, when deep structures are dismantled, compared to during equilibrium periods. In the supply chain management discipline, Liu et al. (2025) used punctuated equilibrium theory to investigate the supply chain's ability to rapidly recover from a shutdown. They identified internal capability and external relationships as key elements for recovering equilibrium and reconfiguring deep structures. In addition, punctuated equilibrium theory has been used in the context of group development (Chang et al., 2003), brand evolution (Hamlin et al., 2015), and process management (Ng et al., 2015). Overall, it is a well-established lens for studying change and evolution in organizational research.

As outlined in Section 2.1, programs are a dynamic phenomenon that go through “waves”, which aligns with the perspective of punctuated equilibria. In fact, De Mast et al. (2022) have investigated the implementation of a Six Sigma program, taking a punctuated equilibrium perspective to analyze the different equilibrium phases of the program's evolution (in that case, considering the formal waves of the Six Sigma program launched by the company in seven years) and to compare the relevance of prescriptive mechanisms and constructive mechanisms to shape a new equilibrium. Lastly, as we aim to understand factors that drive program change, punctuated equilibrium theory offers a promising logic and concepts, such as those outlined above, compared with, e.g., lifecycle theory, which posits change in predetermined stages (Van de Ven and Poole, 1995).

The way organizations manage or navigate the change phases has been shown as an important predictor of the organization's long-term success (Gersick, 1991; Tushman and Romanelli, 1985). Related literature on the stability-change conflict suggests that it is healthy for long-term success to have periods of stability between intermittent change (Klarner and Raisch, 2013). Therefore, from a corporate lean program perspective, program managers need to navigate change effectively. The corporate lean program must remain relevant to survive and effective to thrive. A better understanding of why and how corporate lean programs change would support program managers in managing such change resourcefully and effectively.

3. Research method

To study changes in corporate lean programs, we assemble a rich database of qualitative case studies. For each case company, we collected data on the evolution of corporate lean programs from insider sources. We organized them in a structured table of program changes, including details on antecedents and outcomes. The unit of analysis comprised episodes in which the case companies' corporate lean programs experienced radical change.⁴ For our analysis, we employed retrospective case studies, which enabled us to capture and examine information from the periods before, during, and after major program changes (Poole et al., 2000). Because a company's program can change several times over the years, we frame these changes as embedded cases within our case companies (Yin, 2013).

For each case company, at least one of the authors has had prior or ongoing engagements over several years. Collectively, we identified 17 companies for which we have detailed case materials on their corporate lean programs and their changes. Regarding the corporate lean programs, we mapped 32 distinct changes—ranging from a minimum of one change in six case companies to a maximum of four in one company. Our

⁴ We recognize that there's no sharp line between incremental and radical. However, in our study, we take a conservative approach and focus only on changes that involve substantial modifications to the program, as recognized by interviewees as unmistakable radical changes. That is, timelines comprise a few changes, that break down one timeline into a few phases. While this choice risks missing a few less radical changes in the programs, it is in line with our research objective and theoretical lens.

analysis excluded the initial launch of corporate lean programs and concentrated on later-stage changes within mature programs. The case companies spanned a diverse range in terms of company sizes (number of employees), headquarters locations, and industries. Table 1 summarizes key statistics of the case companies and the number of changes in our sample.

Our primary data source is semi-structured interviews conducted with key stakeholders involved in the corporate lean programs. Interviewing company senior managers (program sponsors) and program leaders ensured that informants had first-hand experience of the program change events. To reduce the limitations of retrospective case studies, we interviewed employees who had been with the company for several years. We recorded the interviews whenever possible and took extensive notes when not (Gubrium et al., 2012).

We employed a well-established data-collection approach that anchors interviews in a structured timeline (e.g., Bingham and Eisenhardt, 2011; Prange et al., 2018). Specifically, we used each firm's chronology of its corporate lean program history (see Fig. 1 for an illustration). These timelines enabled systematic event tracking and enhanced the accuracy and comparability of accounts across informants within the same organization. During the interviews, participants were asked to walk us through the sequence of events chronologically, to elaborate on episodes of radical change using temporal bracketing, and to articulate how the preceding program differed from the one that followed.

The timeline approach enabled us to capture the antecedents of change, the focal transition, and its subsequent consequences. We gathered detailed information on program characteristics—such as organizational structure, content, and roll-out mode—as well as on contextual conditions that may have triggered shifts (e.g., changes in the top management team, financial distress, industry trends, and so on). We also examined the results of each transition by documenting the program changes that followed. The timelines proved particularly valuable in this regard, as informants were typically well acquainted with the different phases.

In addition to our direct data sources, we relied on company internal data and publicly available sources to triangulate and complete the data. For example, we attended company presentations and workshops where companies presented their corporate lean program histories to cross-validate our information. A benefit of studying corporate lean programs is that companies usually do not shy away from publishing about them and presenting them at conferences and industry seminars. Therefore, we could collect rich external documentation about the programs and their evolution. Especially for events further in the past, internal and external documentation helped reduce any uncertainty.

For our analysis, we applied the temporal bracketing technique (Langley, 1999). This technique involves dividing a process into successive periods, then organizing and analyzing events within each period to understand how they unfold over time. We first built our database by decomposing the evolution of a corporate lean program into individual changes, each with its own antecedents and outcomes (see an excerpt in Appendix A). That is, we systematically documented internal and external events, program characteristics (e.g., organizational structure, program content, roll-out approach), and change outcomes.

Second, we conducted a cross-case analysis to identify similarities and differences, e.g., common themes among antecedents and change outcomes (Yin, 2013). We adopted punctuated equilibrium theory as a theoretical lens to guide our analysis. In doing so, we searched for forces that bring about change and those that resist it (deep structures). For example, by studying the events preceding a program change, we found that C-level management changes were a common antecedent.

Third, we developed a conceptual framework to synthesize our

findings (Jabareen, 2009), thereby providing an understanding of changes in corporate lean programs. We iteratively map and relate the identified forces to each other and to the change outcomes to ensure that the resulting framework meaningfully integrates and explains our phenomenon (Jabareen, 2009).⁵ This repetitive synthesis, alternating between our emergent conceptual framework and our empirical data, was accompanied by discussions within the research team (Eisenhardt and Graebner, 2007). For example, by doing so, we found that forces for change can be clustered into two types, and that the same force can affect a program in different ways: either strengthening or weakening it (see Results). We reached theoretical saturation of our synthesis when we added the last cases (O, P, and Q), which did not yield any additional insights to our conceptual framework (Eisenhardt, 1989). Hence, we stopped further data collection.

Lastly, we further evaluated the resulting framework as a diagnostic and sensemaking tool in a workshop with lean practitioners from five companies (Jabareen, 2009). The workshop enabled participants to apply the framework to their own program histories, discuss its explanatory value, and assess the clarity and completeness of its constructs and relationships. Their reflections provided practitioner-grounded feedback that helped us gauge the framework's empirical resonance, sharpen category boundaries, and surface potential blind spots.

4. Results

Our data support the main prediction of punctuated equilibrium theory (Tushman and Romanelli, 1985). Corporate lean programs alternate between extended periods of program stability and shorter periods of revolutionary program change. Most of the time, the programs are in a state of equilibrium. During this phase, the program is implemented to instill the practices and principles described in it. However, this does not mean the program is not under pressure, imperfect, or changing dynamically. Even in equilibrium, forces constantly affect the program, but not enough to burst it out of equilibrium. But at some point, often following the emergence of new, stronger forces, the equilibrium bursts. It triggers a radical change during which programs face significant reconfiguration in their characteristics—their deep structures. After the reconfiguration, the program enters a new equilibrium period.

We identified two clusters of forces, which are illustrated in Fig. 2. On the horizontal axis, we include forces that affect the program's support in an organization. On the vertical axis, we include forces that affect the need for the program. As we will discuss, these axes are distinct, yet may be correlated. In equilibrium, the total sum of forces will be centered around “neutral.” These forces are countered by the program's deep structure, which explains its inertia and resilience in resisting change despite pressures to change. In addition, the forces can cancel each other out. For example, a new chief operating officer who initially wants to reduce the program (“lower program need”) may be offset by the need to increase productivity (“higher program need”), or a program that is getting dated (“lower program support”) may be offset by delivering very strong results (“higher program support”). As long as the program is in equilibrium, it will change only incrementally. We first elaborate on a program's deep structure, then examine the forces that shape its need and support, and conclude our results section with the identified change outcomes.

4.1. Program deep structures

Deep structures represent the institutionalization of the corporate

⁵ We share other scholars' view that conceptual frameworks do not predict outcomes based on hard facts but are an interpretative approach for explaining a phenomenon.

Table 1

– Case companies with embedded changes (Source: Author).

Case companies	HQ	No. of employees	Industry	Corporate lean program changes	
				No. of changes observed	Years of changes observed
A	US	80.000+	Pharmaceuticals	2	2007, 2016
B	US	30.000+	Pharmaceuticals	2	2015, 2019
C	Portugal	2.000+	Pharmaceuticals	3	2010, 2013, 2019
D	Germany	60.000+	Whitegoods	2	2006, 2015
E	Germany	40.000+	Machinery	3	2009, 2013, 2019
F	Germany	90.000+	Automobile	4	2004, 2014, 2019, 2022
G	Sweden	90.000+	Automobile	2	2013, 2015
H	Switzerland	10.000+	Industrial Products	2	2020, 2024
I	Italy	30.000+	Energy	2	2018, 2022
J	Sweden	40.000+	Machinery	2	2019, 2023
K	Switzerland	10.000+	Food Products	2	2012, 2022
L	Germany	15.000+	Automobile	1	2017
M	Germany	90.000+	Machinery	1	2021
N	Germany	18.000+	Machinery	1	2013
O	France	10.000+	Industrial Products	1	2020
P	Italy	50.000+	Aerospace	1	2016
Q	US	15.000+	Industrial Products	1	2020
Count: 17	7 countries		7 industries	32	Median 2016

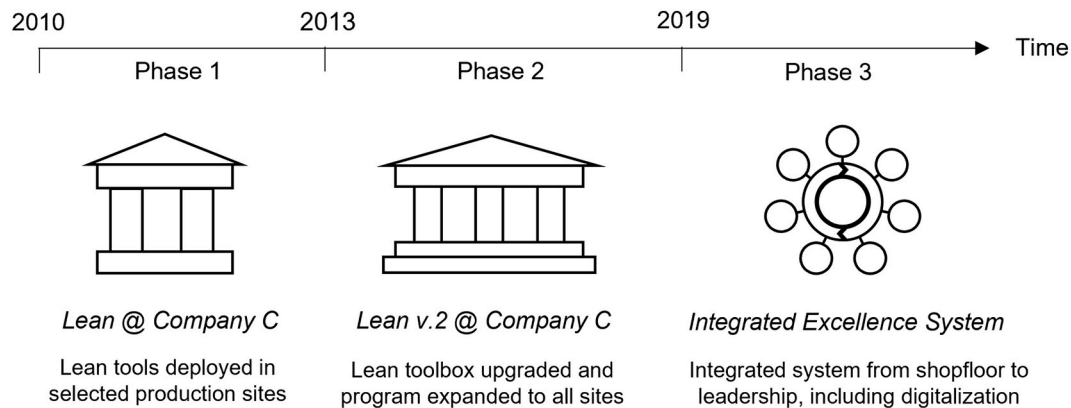


Fig. 1. Illustration of program evolution
Source: Authors, adapted from Company C.

lean program (circles in Fig. 2). Because of its deep structures, a corporate lean program can withstand the usual ebb and flow of forces acting on it. In the equilibrium phase, the program seeks to build deep structures (illustrated as an expanding, centered circle) that help withstand forces for change. It is becoming more ingrained in the organization and harder to change and discontinue. From a program point of view, deep structures are desirable. Still, in the case of a sudden shift in the program's strategic relevance, deep structures may hinder effective reorientation towards better programs. One tangible example of deep structures is the number of people directly involved in the program as part of their employment, as observed also by other scholars (Douglas et al., 2016). Another is the use of routine shopfloor meetings or the installation of standardized, regular program assessments, as observed in companies C, D, and G.

Deep structures can also be gradually reduced or eroded during equilibrium due to aging, forgetting, or complacency (i.e., contracting circles in Fig. 2). For instance, installed visual systems may degrade over time or suffer from inadequate maintenance and updates. Moreover, employee turnover can lead to the loss of critical tacit knowledge regarding established procedures. Another common example we observed is how the Covid-19 pandemic radically changed routines in many companies, including typical lean routines such as shopfloor management meetings and Gemba walks—slowly eroding the deep structures embedded in the program.

Aging deserves particular scrutiny. Several interviewees indicated

that the program was “getting old” or “needing renewal.” In the best case, the program ages well: employees see it as an integral part of the organization and no longer question its relevance. In most cases, however, it only loses its luster. A few years into the program, it is neither new nor hot. This was a common observation across many firms in our sample: after the initial palpable effects and marketing, corporate lean programs and their effects became less visible and less celebrated. The employees who had enthusiastically started the program moved into new positions, and the second generation of leaders and team members did not feel the same sense of ownership. Therefore, the program's deep structures often crumbled over time, making it more susceptible to change.

4.2. Forces impacting the need for a program

A program's need (the vertical axis) captures the extent to which a corporate lean program is seen as needed for a firm's competitiveness. For example, a diversified conglomerate may view a common corporate program as ineffective at achieving the intended change. In contrast, a company that recently acquired competitors might see alignment as essential. Another company that has been through two decades of a successful lean transformation may (rationally or irrationally) deemphasize the importance of keeping the program, while a company that is in financial distress might see a corporate lean program as essential for regaining productivity—or, on the contrary, slash every support to it to

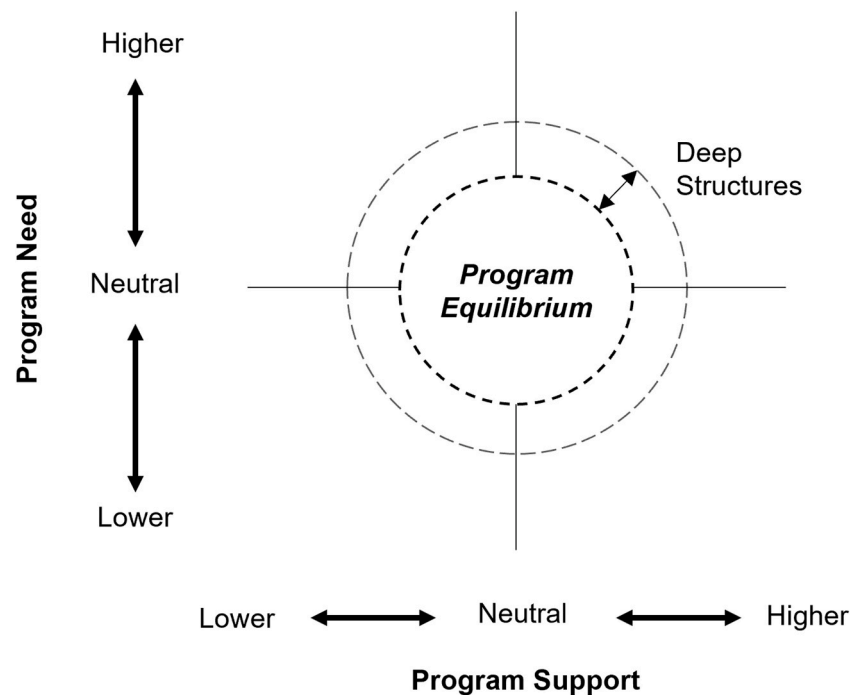


Fig. 2. A corporate lean program in equilibrium
Source: Authors.

save costs.

Hence, we define *Program Need* as the attributed contribution of a corporate lean program to achieving a company's strategic goals. In practice, this axis captures the program's strategic position and its ability to attract additional resources, including staff, internal marketing, and investment. In our cross-case analysis, we identify five types of forces that impact the need for corporate lean programs: (1) a firm's performance pressure, (2) C-suite management changes, (3) program management changes, (4) program competition, and (5) corporate alignment.

4.2.1. Performance pressures

Performance pressure is constant in business environments. However, its effect varies with the magnitude of the pressure. During periods of prosperity, a company typically has the resources to invest in productivity improvement. However, its strategic importance may diminish unless top management explicitly prioritizes improvement. Conversely, during downturns, the pressure—and often the motivation—to enhance productivity tends to increase as organizations seek to reduce costs. However, investing in improvement incurs costs that managers may be unwilling to bear during times of hardship. Hence, performance pressure is an important driver, but it is unclear whether it will make the program more or less relevant to the firm's strategic (re)orientation.

For example, in our dataset, we noticed that cost-reduction strategies were usually the seed for starting corporate lean programs. However, rising cost pressures can also negatively affect corporate lean programs. In the case of Company O, such pressure during the Covid-19 pandemic significantly weakened the strategic position of its corporate lean program, leading to a reduction in the program team and its reorganization. Beyond cost-saving objectives, other performance dimensions may also drive the adoption of such programs—for instance, addressing quality issues in pharmaceutical companies.

4.2.2. Change in C-suite management

A second observed type of force for program need is the change of senior personnel, especially C-suite managers, as also observed by Hekneby et al. (2022). A change in senior management often disrupts

the equilibrium of corporate lean programs. It can pose major threats or create major opportunities for the program's strategic importance. Many executives may be skeptical of the value of corporate lean programs. Following a change in Company E's top management in 2013, the corporate lean program was deprioritized. It is not unusual for a new manager to discontinue initiatives from the predecessor, including corporate programs.

On the contrary, a newly appointed top manager may bring prior positive experience with corporate lean programs—either reinforcing the program's existing deep structures or supporting it while repositioning it. For example, at Company E, the program strengthened its strategic position when a new COO joined in 2009, bringing experience from a large automotive company known for its corporate lean program.

4.2.3. Change in program management

A change in program management was identified as an antecedent to radical program change in companies A, B, C, and I. In these cases, the newly appointed head of the corporate lean program was urged to “change something.” In Company C, this change was referred to as “a breath of fresh air” (informant, Company C). In Company A, however, the retirement of the program manager left a power vacuum, and company-internal political tensions characterized the succession as two philosophies carried in by two potential successors clashed. Similarly, at Company I, the head of the corporate lean program moved to another department, which led the program to shift from a second-level report to one level lower, under the Head of Quality. Hence, in practical terms, this program management change weakened the program's strategic position.

4.2.4. Program competition

Internal competition with other programs is a fourth force that impacts the need for a program. The emergence of other programs can either diminish or increase the importance of the corporate lean program, diverting resources and attention from it. A contemporary example is the emergence of digital transformation or smart factory programs that directly compete with the corporate lean programs. In some cases, other programs can weaken the position of the corporate

lean program, while in others, it can strengthen it (see also Frank et al., 2024; Pirrone et al., 2024). For example, a new focus on the digitalization of operations may prompt operations to become more effective before investing in unnecessary technologies (as observed in Company J).

Program competition can involve other programs within the same company (e.g., A, B, G). In large corporations, many programs can exist across different parts of the organization simultaneously. For example, at Company A, the corporate lean program competed with a tangential ‘quality culture’ program inspired by Six Sigma. In other instances, as in companies B and G, internal programs were merged into the corporate lean program, potentially strengthening its buy-in and scope.

However, program competition can also arise indirectly from external programs launched by competitors (e.g., Company F), sister companies (e.g., Company D), or broader industry trends (e.g., Company I and J). With limited information about which programs are “best,” managers are quick to emulate what seems to work for others, a process organizational theorists have termed isomorphism (Guler et al., 2002; Kostova, 1999). Often, competing programs are launched or supported by external consulting companies. In one example, a leading consulting company suggested replacing the corporate lean program developed in partnership with a competitor. Additionally, global trends such as increased automation, digitalization, and sustainability influence existing programs (e.g., Company F).

4.2.5. Corporate alignment

The final force we map on the program need axis is corporate alignment, which we define as the need to orchestrate coordinated change within an organization. For example, after several mergers and acquisitions (M&As), companies often seek to streamline operations and realize synergies. A corporate lean program can be helpful in such efforts.⁶ Company Q experienced the opposite; the program lost traction and was closed after a merger.

Another example is when a corporation radically changes its core strategy. In Company J, for example, we observed that the corporate lean program took a hit when a new corporate strategy was launched, emphasizing decentralization and more divisional power. The corporate lean program was carried over to one of the premium brand divisions but fizzled in the others (which were already developing their own programs).

A tendency we observed in many of our cases was that the corporate lean program had become “stuck” in operational production functions and was only rarely of interest and relevance to support functions. Therefore, many companies seeking productivity improvements expanded the program’s scope to include office functions and end-to-end (E2E) operations. For example, Companies K and L showcased a significant broadening effort by including E2E functions within the scope of their program.

4.3. Forces impacting a program's support

On the horizontal axis of our conceptual model, we map forces that affect a program’s overall support within the organization. We see this axis as distinct from the vertical axis. A program can have low support but be strategically important. We identified and classified two main types of forces: (1) leadership and (2) employee engagement.

4.3.1. Leadership

Leadership directly affects the program’s support in the organization. In their daily work, leaders choose whether they amplify or curtail the corporate lean program. Prior research has shown that leadership style is associated with this (Tortorella et al., 2018). If leaders consistently

⁶ An example from the literature is why the Volvo Production System was created in 2007.

demonstrate the program’s importance through words and actions, organizational support for it will likely strengthen. Conversely, if leaders stop communicating about the program, organizational support for it is likely to weaken. The extant literature shows that the antecedents of leadership support are leadership commitment and beliefs (Arellano et al., 2021), and a key mediator is the perceived performance effect of the program. If the program has a reputation for delivering results, it is more likely to gain leadership support. Conversely, if the program’s performance outcomes are difficult to observe or quantify, leaders are less likely to endorse and support it.

Company C celebrated success with its corporate lean program at its major site before 2013. The success led to the creation of a corporate-wide program based on the site version. A contrary example is Company A in 2016. Their prior corporate lean program was hard to connect to measurable performance improvement. As one lean coordinator recalled, the approach was “too technical and too voluntary,” which did not yield enough improvements to the organization; hence, they “just needed something new.”

4.3.2. Employee engagement

The second force of program support is employee engagement. It refers to workforce support for the corporate lean program. This support can range from being hostile to championing the program. Many companies in our database have spent years building a supportive culture. One company referred to the workforce as “evangelists of lean.” Others saw the support quickly vanish with the first layoffs of coworkers. What people *believe* about corporate lean programs and what they *actually do* do not always match up. We observed that some companies in our database had engaged in ceremonial adoption, which appeared to be program implementation on the surface, but lacked the engagement to sustain it.

An important antecedent for engagement is *training*. Employees are unlikely to support something they know little about. All companies in our database have launched training programs. For example, Company A launched an intensive, broad training program before the first change event (2007), aiming to teach every employee Six Sigma methods. This knowledge base was carried over when the new corporate lean program launched in 2007, replacing the Six Sigma program. Yet, training per se does not always translate into a solid foundation of knowledge, as was evident in Company B, which described its earlier approaches as “patchy training.”

4.4. Program change outcomes

Having mapped the forces that act on a corporate lean program in equilibrium, we turn to how they affect the outcomes of changes. Our analysis of the changes identified four different types of change.

- *Pivot*: The program radically changes into a new program
- *Boost*: The program is renewed and expanded
- *Patch*: The program is partially amended
- *Abandon*: The program is starved of resources or closed

We map these four outcomes on our conceptual framework as shown in Fig. 3. When the forces are neutral or offset by the program’s deep structures, the program is in equilibrium and will not change. However, the forces will eventually disrupt the equilibrium, pushing it into one of the four quadrants.

4.4.1. Pivot

The program will *pivot* if the need for it suddenly increases, but it currently receives limited support. This results in a full revamp of the program in which its former characteristics are radically changed. A public example is GE, which recently shifted from a corporate Six Sigma program to lean, a change attributed to the 2018 appointment of new CEO Larry Culp (Brady, 2023). In our sample, Company A also shifted

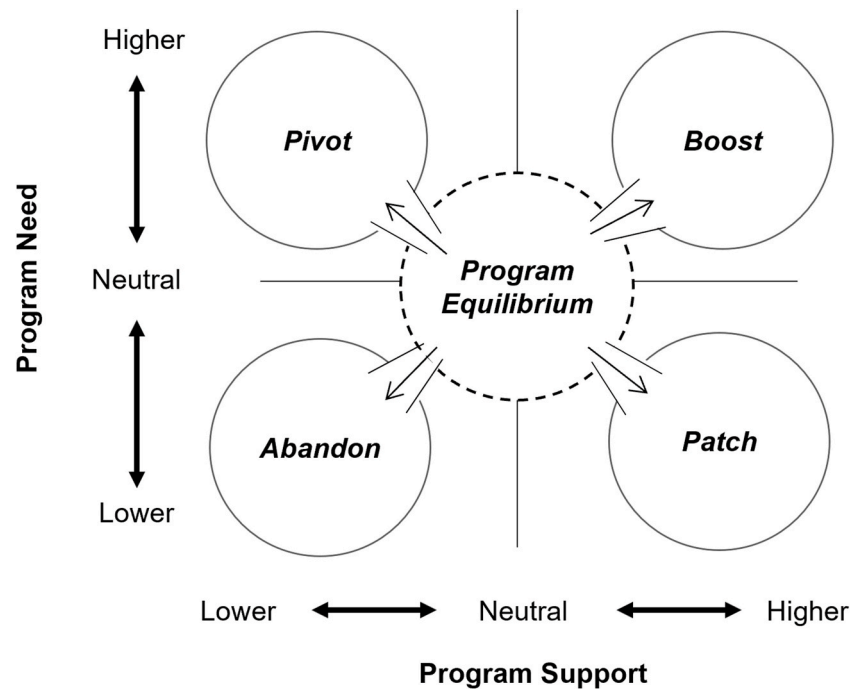


Fig. 3. A program bursting out of its equilibrium
Source: Authors.

from Six Sigma to a lean program and expanded its application beyond manufacturing, making the program mandatory. Company G underwent a pivot almost ten years after launching its corporate lean program. After the pivot, the program was expanded fivefold and broadened its scope to a much more holistic perspective on improvement. In the process, the program branding and lean “house” were fully redesigned. In our interviews, we noticed that many companies pivot early in their programs, as scattered trial-and-error initiatives are replaced by a broader corporate program (companies D and L are examples). We also noticed that many of the companies we still engage with are currently under pressure to pursue digital transformation, coupled with a related loss of support for their current corporate lean program, and are searching for ways to pivot into new “digital lean” programs.

4.4.2. Boost

When there is both a high need and a high level of support for the corporate lean program, it can be expected to be *boosted*. *Boost* means changing some of the program’s characteristics while keeping some of its core, such as content, design, and support teams. Many companies had experienced positive effects in manufacturing divisions and were looking for ways to “scale” the program into support functions. In contrast to *pivoting*, the program will be renewed with new features while keeping its core. For example, at Company C, the corporate lean program was perceived as effective, leading to its expansion into other organizational structures. It also involved expanding the central program support team and integrating a few new digital concepts to better fit office environments. In Company J, the program support was growing due to perceived benefits. In addition, the need for the program was increasing due to a new and impatient CEO. These forces pushed the program out of equilibrium and boosted it.

4.4.3. Patch

Patching changes occur when a program receives increasing support but is seen as less and less important to the company. To remain relevant—and with declining top management support and limited investment opportunities—we noted that companies often patch their programs. *Patching* seeks to update the program by giving it a “facelift.”

Consider Company D, which was acquired by a larger company. Its corporate lean program faced competition from the mother company’s program, but survived due to strong support within Company D. The result was a facelift with new design elements, and some principles from the new mother company were integrated into the program, including systematic improvement workshops. The result was reportedly good, and employees were supportive of the patched program. Company F, on the other hand, experienced a common fate during a large organizational restructuring. The ownership of the corporate lean program was decentralized to divisions, but it persisted to varying degrees.

4.4.4. Abandon

The fourth outcome is *Abandon*. It occurs when both the support for and the need for the program rapidly decline. Many firms experienced this during the Covid-19 pandemic, with rapid declines in support for the lean program. Abandonment sometimes results from a firm’s financial crisis, in which cutting program costs provides a visible, short-term cost advantage. Another common reason for abandonment is the start of a new CEO who does not believe in the program or its effects. When the program is abandoned, it usually means slowly strangling its resources or moving program staff to sidetracked, low-power organizational roles.

In our sample, we observed only a few cases of abandonment (after all, we sampled cases with a program). Company E, for example, completely shut down its corporate lean program. At that time, employees began to lose confidence in the program, and acceptance rates were falling rapidly. The organization undergoes extensive ceremonial adoption with little or no effect on performance (see also Netland and Aspelund (2014)). The appointment of a new COO was the final blow; he did not see it as strategically important or effective for cost savings, so he decided to close it. In Company O, the entire corporate lean team was replaced, and the program never recovered. Its program—even though it was not formally stopped—was effectively abandoned.

5. Discussion

5.1. Theoretical contributions

We contribute to the operations management literature by examining the firm-level evolution of corporate lean programs, focusing on how these initiatives change and adapt over time. By tracing their distinct developmental trajectories, we extend current discussions on the dynamics of corporate lean programs and provide new empirical evidence to enrich this relatively underexplored area of research (De Mast et al., 2022; Grothkopp, 2023; Hekneby, 2021).

First, we show that programs follow the pattern of punctuated equilibrium. Corporate lean programs aim for lasting improvement and innovations in equilibrium with the company and its environment (Tushman and Romanelli, 1985). However, when this equilibrium is disrupted, corporate lean programs undergo a change that lays the groundwork for a new equilibrium phase (Tushman and Romanelli, 1985). They alternate between periods of stability with convergence and periods of radical change or reorientation, as also documented by De Mast et al. (2022) in the context of a single Six Sigma program.

Second, we follow the call of Lee and Jo (2007) and identify the types of forces that affect a corporate lean program's change pattern, namely, its need, support, and deep structures. Lastly, to the best of our knowledge, we are the first to identify and typologize program change outcomes based on the forces at play. Many scholars found that corporate lean programs are path-dependent (Netland, 2013b; van Driel and Dolfsma, 2009). We extend this view by providing a more forward-looking perspective that helps predict upcoming changes, or, more generally, the evolution of these programs (Lee and Jo, 2007). For this purpose, we constructed a conceptual framework informed by punctuated equilibrium theory, which helps explain periods of stability and disruption in the evolution of corporate lean programs.

Furthermore, we extended the literature on punctuated equilibrium theory in the context of corporate change. The models provided by Tushman and Romanelli (1985), Romanelli and Tushman (1994), and Gersick (1991) pay limited attention to two aspects. First, we proposed that the characteristics of a new equilibrium depend on the extent to which existing deep structures are dismantled—that is, on the vector sum of the forces that drive and resist change. This aspect has been largely neglected in the literature, which is based mainly on single-case research (De Mast et al., 2022; Liu et al., 2025; Yang and DiBenigno, 2025), making it almost impossible to analyze the different trajectories of change of a comparable corporate lean program in another organization. Second, although those studies provide insights into various factors that influence revolutionary change, they do not cluster the forces that generate the change or relate them to one another. This research extended the traditional punctuated equilibrium model by clustering forces based on how they undermine the program's deep structure (higher/lower program support, higher/lower program need). This aligns with the work of Liu et al. (2025), who identified two key elements—internal capabilities and external relationships—that influence deep structures. However, our framework extends this perspective by clarifying how different types of forces interact to shape the outcomes of organizational change. Moreover, the existing literature often examines only one or a limited set of forces when analyzing change in this context (e.g., technological developments, managerial transitions, or mergers). In contrast, we demonstrate that organizational change arises from the interaction of multiple, interdependent forces, thereby reinforcing Wollin's (1999) conclusions.

5.3. Post-hoc tool validation

To validate the framework and tool, we tested it in a workshop with participants from five companies. We handed out paper templates of Fig. 4 to each company group and asked them to complete them, referring to the most recent change to their program. Participants had to

determine the forces in the forcefield diagram for their program's need and support, which were mapped onto the change framework. Afterwards, we discussed and compared the results of the groups in plenary. Participants resonated with the proposed framework, with one participant explaining that he would now “understand why the program at his former employer failed” (was abandoned). Overall, we could validate the practicability of our proposed tool, as participants were able to map the forces and agreed on the outcome of their most recent program change.

5.2. Managerial implications

Our findings have several practical implications. The research provided a structured framework that explains which forces affect the equilibrium of corporate lean programs and how they destabilize it. This knowledge can be very insightful for practitioners managing corporate lean programs, as it clarifies how external forces and deep structures can sustain the program's equilibrium and the expected evolution (type of change) when it is disrupted. If managers can anticipate how a program may change in response to the forces at play, they can stay ahead of the curve and create better programs with greater impact. They can seek to understand better how forces affect the program's equilibrium—whether it is higher or lower than the program's need or support—and then act on it by either embracing the change or counteracting forces if they consider it strategically important. As a concrete example, when the need for a program is high—such as in response to heightened performance pressures or the appointment of a new senior manager—the program manager should evaluate the organization's current level of support for the existing program. This analysis will help determine whether to launch a new program or retain and enhance the core features of the existing one. For instance, it is often unclear at the outset whether a new CEO will oppose or support an ongoing initiative; the outcome can go either way. Yet, a program manager can start advertising for the financial benefits the program delivers, or, in other words, start lobbying. It is also unclear whether the mere passing of time will erode or reinforce a corporate lean program. It can help strengthen its credibility and deep structures, or make it look old and outdated. Program managers need to understand whether time is on their side or against them. Moreover, our concept of deep structures in corporate programs may be valuable to program managers. In other words, program managers can focus on developing and reinforcing deep structures that sustain and advance their programs' long-term intent.

To support the mapping of force strength and direction, we suggest a force field diagram, inspired by Kurt Lewin's change theories, as a useful tool (Swanson and Creed, 2014). The tool is illustrated in Fig. 4 and maps directly onto the program change framework. Users evaluate the five plus two driving forces in terms of their likely impact on the program: from lower to higher program need (vertical axis) and program support (horizontal axis). The simple vector sum of the total voting indicates whether the program remains in equilibrium or moves into one of the four quadrants. Program owners, consultants, or others can, for example, complete the forcefield diagram during a workshop. The diagram can also be used in a “program post-mortem” to learn from experience and improve the chances for future programs.

In Appendix B, we provide two examples of the tool's application based on cases A and J covered in this research. In brief, Company A and Company J illustrate how different combinations of need and support lead to distinct forms of program reorientation. At Company A, pressures arose in 2016 mainly from within the initiative itself: teams were consolidated, rivalry between lean and Six Sigma persisted, an external consultancy was mandated to relaunch the effort, and employee engagement had eroded because the program was perceived as overly technical and voluntary. In response, the organization executed a *pivot*, replacing the existing architecture with a redesigned setup that introduced a maturity assessment and integrated the previously separate communities. In its 2019 change event, Company J, by contrast,

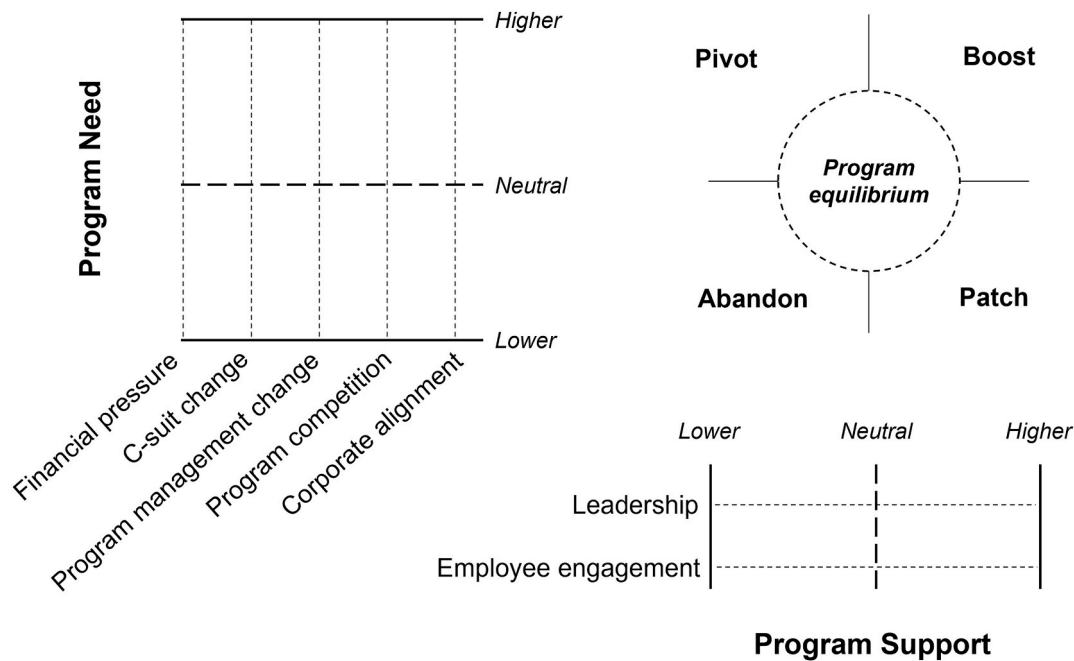


Fig. 4. A forcefield diagram tool for evaluating the likely outcomes of change in a corporate lean program
Source: Authors.

confronted strong cost pressure, new technologically oriented executive leadership, and the growing importance of digitalization, yet retained sustained leadership backing and broad participation across the organization. Building on this foundation, the company opted for a *boost*, evolving toward a “Lean 4.0” program by expanding the team and adding digital competencies and tools while maintaining the core of the prior program.

The introduction of the force field diagram as a tool for mapping the state of a corporate lean program represents a novel practical contribution. It enables managers to develop a structured understanding of the program's overall stability and provides a systematic way to visualize the forces that drive or restrain progress. Through this approach, practitioners gain deeper insight into the diverse, interrelated factors that influence the program's effectiveness and sustainability.

6. Conclusions

Even if companies widely adopt corporate lean programs as a strategic lever to generate competitive advantage, the dynamics of such a complex system remain unexplored: programs launched to last but that crumble or collapse after a few years. This research sheds light on the firm-level evolution of corporate lean programs, particularly their distinct changes. Drawing on a database of corporate lean program timelines from 17 companies, covering 32 program changes, and applying punctuated equilibrium theory, we explored why and how corporate lean programs change. This paper contributes new insights, a conceptual model, and a practical tool to the literature on lean management and leading corporate programs. We conclude that corporate lean programs are dynamic phenomena that evolve through incremental but also radical changes.

Our research is not without limitations, which offer potential for future research. Retrospective case studies risk overlooking details from long ago. Although we implemented several countermeasures, future research could place greater emphasis on longitudinal case studies. As we relied on company-defined timelines and program changes, we may have missed a few changes that they did not recognize or highlight. Yet, we ensured sufficient embedded cases and the related saturation in our results. Still, this sparks potential for scholars to investigate equilibrium

phases in more detail. As punctuated equilibrium suggests, how did corporate lean programs incrementally change in these phases (Romanelli and Tushman, 1994)? We also believe it would be worthwhile to scrutinize what *prevents* corporate lean programs from radically changing despite ongoing impacting forces. For example, what program characteristics constitute deep structures, and how can they be built?

Moreover, the proposed force field diagram is a practical tool, but it lacks objective references and a scale for measuring force and deep-structure intensities. Future research could develop a scale to measure the forces affecting the programs, facilitating evaluation of the relationship between forces and the dismantling of deep structures, while also making the tool easier for practitioners to adopt. Furthermore, the research focused on corporate lean programs. While we believe our results are generalizable to many different corporate programs, the boundary conditions remain to be established. Investigating different program styles, such as digitalization or sustainability programs, could provide further insights for managers.

CRediT authorship contribution statement

Torbjørn Netland: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Mark Grothkopp:** Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Matteo Rossini:** Writing – review & editing, Investigation, Formal analysis, Conceptualization. **Thomas Friedli:** Validation, Supervision. **Alberto Portoli Staudacher:** Resources.

Declarations

This research did not receive any funding from public, commercial, or not-for-profit agencies. The names of all companies and individuals are disguised to maintain confidentiality. Due to confidentiality reasons, not all supporting data is available. While preparing this work, the authors used ChatGPT 5.0 and Grammarly to improve language and style. After using these tools, the authors carefully reviewed the output.

APPENDIX A. STRUCTURED DATA ANALYSIS

Table A-1
Excerpt data analysis

Case	Year	Antecedents		
		Program characteristics	Events	Outcome
A	2007	A lot of Six Sigma training certification belts from existing programs; global and local Six Sigma teams were in place; each site needed to create a top-down-driven roadmap.	The former head of the Six Sigma program left the company (internal); a regional leader (internal), together with a consultancy, introduced Lean as a new concept and program (external).	Two separate programs emerged: Lean and Six Sigma, a more bottom-up approach in which sites could choose tools from either program.
A	2016	The existing Lean program lost people's engagement; it was perceived as too technical and too voluntary, and there was ongoing tension between the two (Lean & Six Sigma) programs.	New consultancy (external) received a mandate by top management (internal) to start a new corporate Lean program.	Completely new program with an innovative approach (with some already existing elements) and reorganization. Development of maturity assessment; integration of the two groups Lean and Six Sigma.
B	2015	Scattered Lean training across the company's sites; a few Lean experts provided the training, following a "try-it-out" roll-out approach.	Performance improvements were not as good as expected (internal); many sites developed proof of concept for their own approaches (internal).	The corporate team was established to focus on knowledge sharing. This central office focused on building capabilities and providing training.
B	2019	Heterogeneous approach across sites; very informal knowledge-sharing process to maintain engagement; the corporate team served as a facilitator, but there was no push to roll out a unified approach.	The new COO wanted a new corporate program (internal) and more pressure for systematic performance improvements (internal).	Holistic and unified corporate program with technical, soft, and management elements. Standardization of elements across the company; increased influence of the corporate team on program operations.

APPENDIX B. EXAMPLES

Example 1: Company A's 2016 program change event

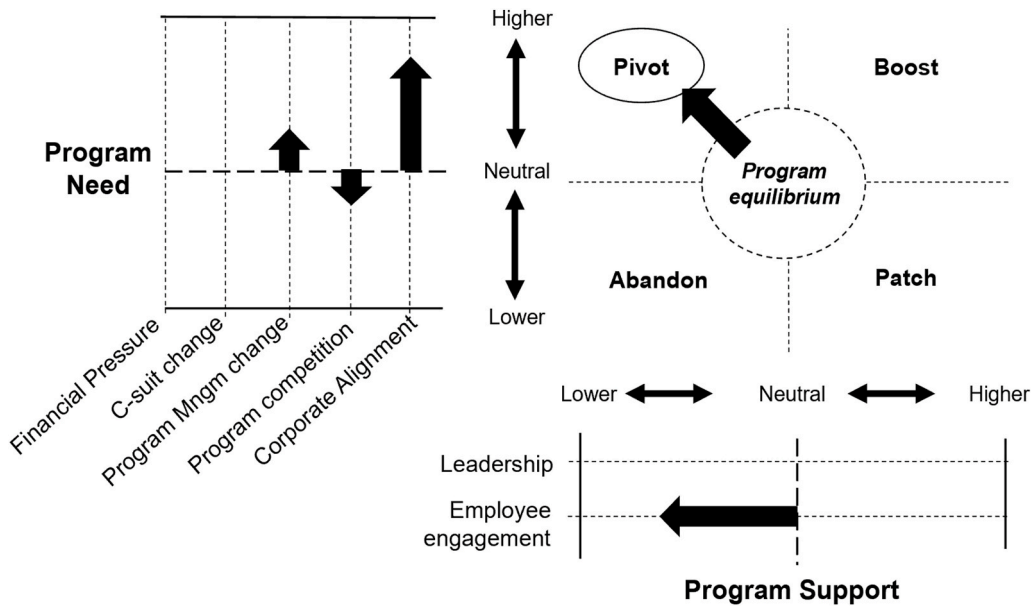


Fig. Appendix B1. Tool application example Company A 2016

Program Need.

- Financial pressure: nothing to note
- Change in C-suit management: nothing to note
- Change in Program management: two program teams were combined (one taking over the other)
- Program competition: ongoing tension between the two (lean & Six Sigma) programs
- Corporate alignment: a new consultancy received a mandate from top management to start a new corporate lean program

Program Support.

- Leadership: nothing to note
 - Employee engagement: the existing lean program lost engagement of people, it was perceived as too technical and too voluntary
- Change Outcome:

Pivot. Completely new program with an innovative approach (with some already existing elements) and reorganization. Development of maturity assessment; integration of the two groups lean and Six Sigma.

Example 2: Company J's 2019 program change event

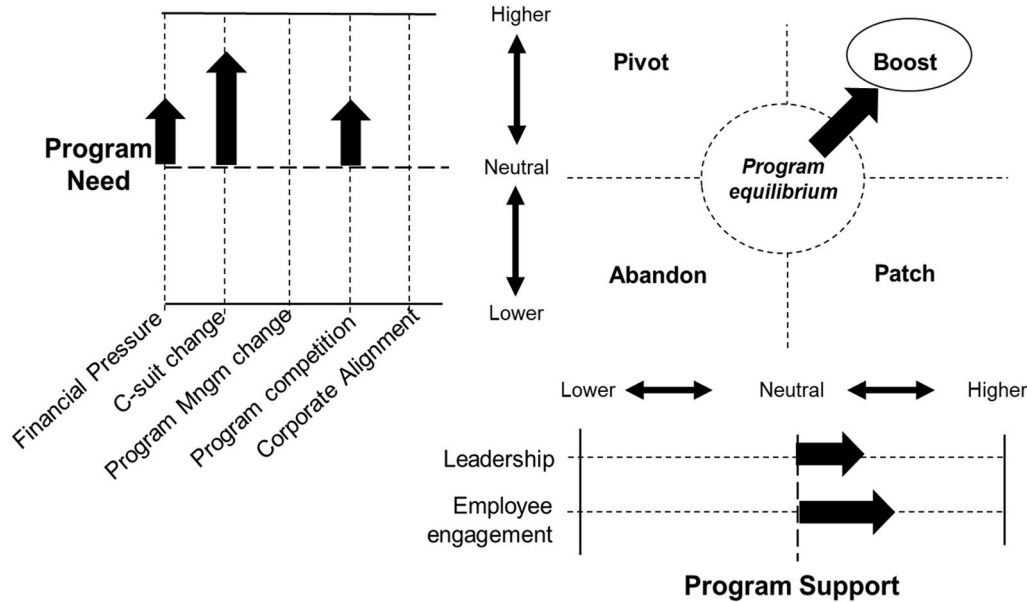


Fig. Appendix B2. Tool application example Company J 2019.

Program Need.

- Financial pressure: strong pressure towards cost reduction
- Change in C-suit management: a new CEO from a technologically advanced company
- Change in Program management: nothing to note
- Program competition: digitalization trend
- Corporate alignment: nothing to note

Program Support.

- Leadership: sustained good results during the years
- Employee engagement: a large number of people trained and broad involvement of people across the organization

Change Outcome:

Boost. From Lean program to Lean 4.0 program: The team expanded after the reorientation. New people, competencies, and tools, mainly related to digitalization, were integrated into the program.

Data availability

The data that has been used is confidential.

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