Lujan, G. P., & Loughrin, N. (2026). Toward an industry standard for LPS maturity using a company-grounded framework. In F. Hamzeh, M. Poshdar, N. P. Garcia-Lopez, & V. Gan (Eds.), *Proceedings of the 34th Annual Conference of the International Group for Lean Construction* (IGLC34) (pp. 1773–1784). https://doi.org/10.24928/2026/0272

TOWARD AN INDUSTRY STANDARD FOR LPS MATURITY USING A COMPANY-GROUNDED FRAMEWORK

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ABSTRACT

Lean Construction maturity frameworks have been widely used to assess the implementation of Lean and the Last Planner® System (LPS); however, most approaches emphasize diagnostic evaluation of practices rather than the development of enterprise production strategy. This paper addresses this limitation by proposing an initial, practitioner-grounded outline of a company-level LPS maturity framework. The study adopts an inductive, empirically grounded approach based on the Boldt Production System (BPS) as a reference case. First, existing Lean Construction and LPS maturity frameworks are comparatively analysed to identify their primary purposes, structures, and measurement focus. Second, key omissions are identified from a company-level perspective, particularly the limited integration of estimating, production system design, execution control, and organizational learning. Third, insights from this analysis and the BPS case are synthesized into a structured set of maturity dimensions that conceptualize LPS maturity as an integrated organizational capability. The contribution is a conceptual starting point for reframing maturity beyond implementation quality toward enterprise production strategy, providing a foundation for future validation and refinement.

KEYWORDS

Last Planner System, lean construction, maturity framework, production system design.

INTRODUCTION

The construction industry continues to face persistent challenges in achieving reliable project delivery, including schedule delays, coordination failures, and inconsistent performance. Lean Construction, and particularly the Last Planner® System (LPS), has been widely adopted to address these issues by improving planning reliability, collaboration, and production control (Ballard, 2000; Ballard & Tommelein, 2021). While LPS has demonstrated measurable benefits at the project level (more reliability) its implementation across organizations remains uneven, often depending on project teams and it is not consistent at the company-level capability.

As LPS adoption has expanded, a growing body of research has focused on assessing its implementation through maturity models and frameworks. These models typically evaluate the extent to which LPS practices are implemented, emphasizing compliance with prescribed processes, the quality of conversations, and the consistency of performance measurement (Nesensohn et al., 2014; Sainath et al., 2018). Among the most recognized approaches, the Lean Construction Maturity Model (LCMM) conceptualizes maturity through multiple levels and attributes (i.e., leadership, culture and behavior, processes and tools, and learning)

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operationalized through observable practices and performance indicators (Nesensohn et al., 2015). Complementary approaches, such as multi-dimensional scoring systems (e.g., weighted matrices and radar/spider visualizations), similarly focus on identifying strengths and weaknesses across dimensions and communicating maturity progression in a way that supports diagnosis and improvement planning (Sainath et al., 2018).

In parallel, structured maturity toolkits developed in infrastructure and supply-chain contexts have reinforced the practical value of facilitated consensus scoring and periodic reassessment cycles, again emphasizing maturity measurement primarily as a diagnostic and developmental instrument rather than as an explicit competitive strategy framework (Highways Agency/HELMA–HALMAT; Nesensohn et al., 2015). Within Lean Construction, LPS maturity has also been assessed through component-based frameworks that evaluate capabilities such as phase planning, make-ready processes, weekly work planning, daily commitment management, metrics and reporting, and continuous improvement across progressive levels of implementation (Perez-Apaza et al., 2021).

Some contributions extend beyond assessment by integrating maturity evaluation with structured improvement routines, such as Toyota Kata and PDCA cycles, enabling organizations to systematically evolve from current to target conditions (Perez-Apaza et al., 2021). Additionally, maturity thinking has expanded into related Lean methods, including Target Value Design (TVD), where similar frameworks have been proposed to improve consistency in design-phase value delivery (Ouma et al., 2025). These developments align with benchmarking efforts from the Project Production Systems Laboratory (P2SL), which provide empirical reference points for common practices and implementation patterns of LPS and related systems across projects (Ballard & Tommelein, 2016; Tommelein & Ballard, 2016).

Despite these advances, existing maturity frameworks primarily conceptualize maturity as a diagnostic and developmental tool, focusing on assessing implementation at the project level. While this perspective has proven valuable for identifying gaps and guiding incremental improvement, it does not fully capture how LPS contributes to an organization's production capability. In particular, maturity is rarely framed as an integrated, company-level system that governs how organizations design production systems, align commercial strategies, manage execution, and learn across projects. This creates a gap between LPS maturity as a diagnostic mechanism and LPS maturity as an organizational production capability.

Recent industry practices suggest a shift toward embedding LPS within broader company-level production systems. One example is the Boldt Production System (BPS), which represents a structured, enterprise-wide approach to designing, managing, and continuously improving production across projects. Rather than functioning as a maturity model itself, BPS can be understood as a production system framework that integrates LPS principles within organizational goals. This perspective highlights the potential to reconceptualize LPS maturity not only as the degree of implementation of specific practices, but as an integrated organizational capability embedded within a company's production management strategy.

To address this gap, this paper adopts a grounded, practitioner-centred approach based on the Boldt Production System as an empirical reference point. Consistent with prior research emphasizing empiricism and practice-based theory development in Lean Construction (Koskela & Howell, 2002; Rischmoller, 2005), the study uses observed company practices to inform this study. Accordingly, the objective of this paper (theory in nature) is to develop an initial outline of a company-grounded LPS maturity framework, informed by a comparative analysis of existing maturity models and grounded in the practices of the BPS. The intention is to provide a starting point that reframes LPS maturity as an organizational strategy embedded within production system design and management. This contribution aims to support future research toward the validation and broader application of company-level LPS maturity frameworks.

LITERATURE REVIEW

IMPORTANCE OF MEASURING LEAN CONSTRUCTION MATURITY

Measuring the implementation of Lean Construction (LC) has become important because LC adoption is often uneven, context-dependent, and prone to partial implementations that do not reliably reproduce intended outcomes. Maturity measurement provides a structured way to make the "current state" of Lean visible, support improvement planning, and enable benchmarking, which have brought benefits to its practitioners including awareness of strengths/weaknesses, prioritization of improvements, and development of a shared language for transformation (Nesensohn et al., 2014/2015; Vaidyanathan & Howell, 2007; Highways Agency, 2012). In the LC domain, the rationale for maturity measurement is also linked to the recognition that Lean is not merely a toolbox but a transformation requiring leadership, learning routines, and stable production control mechanisms; thus, without measurement, organizations struggle to assess progress, sustain change, and compare performance across projects or business units (Nesensohn et al., 2014/2015; Sainath et al., 2018).

Benchmarks complement maturity models by describing "current practice" and clarifying what typical system execution looks like in the field, especially with LPS and TVD. In the P2SL´s "current process benchmark" for LPS and the TVD benchmark provide reference points that help situate maturity criteria in observed routines and artifacts rather than purely aspirational statements (Ballard & Tommelein, 2016; Tommelein & Ballard, 2016). In parallel, the maturity-model literature stresses that assessment approaches vary in purpose (e.g., improvement guidance vs. benchmarking vs. industry comparison), and that useful models require clarity of domain, intended use, and evaluation procedures (e.g., expert review templates, staged development and validation cycles) (Poppelbuß & Röglinger, 2011; Salah et al., 2014; Helgesson et al., 2012). Together, maturity models and benchmarks provide the LC community with (a) structured diagnostic instruments for "how mature are we?" and (b) practice-grounded baselines for "what does the system look like when executed?". These two are valuable for academic operationalization and practitioner diagnosis.

EXISTING FRAMEWORKS FOR MEASURING LEAN CONSTRUCTION AND LPS

At the organizational/enterprise level, one of the most influential LC maturity frameworks is the Lean Construction Maturity Model (LCMM). LCMM conceptualizes maturity as staged progression and operationalizes it through a structured set of attributes and "ideal statements," including 11 Key Attributes (e.g., leadership, customer focus, culture/behavior, processes/tools, learning) and detailed behaviors/goals/practices that are assessed via evidence in a practitioner-led process (Nesensohn et al., 2014; Nesensohn et al., 2015/2016). LCMM cautions that assessments require knowledgeable assessors and that misuse (e.g., blame) is incompatible with Lean principles (Nesensohn et al., 2014/2015). Complementary organizational maturity toolkits appear in infrastructure and supply-chain contexts, such as HALMAT (Highways Agency Lean Maturity Assessment Toolkit), which structures assessment across strategy, systems, leadership, people development, collaboration, flow, and quality, using facilitated processes and optional weighting to support consistent evaluation (Highways Agency, 2012).

At the project level, maturity frameworks often emphasize multi-dimensional scoring and visualization to make maturity gaps actionable. Among others, Sainath et al. (2018) propose a progressive evaluation framework that distinguishes stages of Lean maturity (physical/tool manifestation leads to behavioral/cultural manifestation, and then to strategic manifestation), uses weighted scoring, and communicates results via radar/spider charts and progression curves to guide improvement focus.

For LPS specifically, maturity assessment is commonly component-based and aligned with LPS routines (e.g., training, master planning, phase/pull planning, make-ready, weekly

planning, daily commitment management, metrics/reporting, and continuous improvement), often expressed across multiple maturity levels to represent increasing consistency and capability. Perez-Apaza et al. (2021) extend this by integrating LPS maturity assessment with Toyota Kata, positioning maturity advancement as PDCA experimentation between current and target conditions supported through coaching cycles and visible storyboards. Their case study illustrates how maturity assessment can become a mechanism for structured improvement execution rather than a static scorecard. In addition, Asadian (2023) provided a project-level LPS maturity work that focuses on attributes evident in LPS meetings (e.g., training/coaching, engagement, readiness, commitment, constraint removal, collaboration, visual tools, and progress measurement), reinforcing the idea that LPS maturity is frequently operationalized through observable planning and control behaviours.

Beyond LPS, maturity logic has expanded into other Lean tools and enabling systems. Among others, Ouma et al. (2025) propose a Target Value Maturity Model (TVMM) to support consistent target value practices in design by defining maturity functions (e.g., planning, control, alignment, learning), attributes, and staged evaluation/validation procedures. Finally, broader maturity work in construction (including supply chain maturity) shows the application of maturity staging to multi-firm, multi-project environments. Vaidyanathan and Howell (2007) propose a construction supply chain maturity framework (CSCMM) with staged development and assessment across process, technology, strategy, and value dimensions, illustrating how maturity concepts can be oriented toward enterprise-level operational integration.

RESEARCH GAP

While existing maturity frameworks provide diagnostic and benchmarking mechanisms, this study uses the BPS as an empirical company-level reference case to explore how LPS maturity may be conceptualized as an organizational production capability. The BPS itself is not treated as prior literature, but as the practitioner-grounded case context through which the proposed framework outline is developed.

Despite the breadth of existing Lean Construction and LPS maturity frameworks, current approaches predominantly conceptualize maturity as a diagnostic instrument used to assess the extent and quality of implementation across predefined attributes, practices, or behaviors (Nesensohn et al., 2014, 2015; Sainath et al., 2018; Perez-Apaza et al., 2021). These models, along with benchmarking efforts from P2SL (Ballard & Tommelein, 2016; Tommelein & Ballard, 2016), provide valuable insights for identifying gaps, guiding improvement, and current practice. However, they remain largely focused on evaluating implementation fidelity or documenting typical execution patterns, rather than explicitly conceptualizing maturity as an integrated production capability embedded within company-level strategies.

At the same time, company-grounded frameworks (such as BPS) demonstrate how Lean principles and LPS can be embedded within enterprise-wide strategies that govern how organizations design, manage, and continuously improve production across projects. Yet, this perspective has not been formalized into a maturity framework that captures organizational production capability. Consequently, a gap exists between maturity models that diagnose implementation and production systems that operationalize Lean at the company level. This study addresses this gap by developing an initial, practitioner-grounded outline of an LPS maturity framework based on the BPS, establishing a starting point for conceptualizing maturity as an integrated organizational capability rather than solely a diagnostic measure

METHOD

This study adopts an inductive, practice-grounded research approach to develop an initial outline of a company-level LPS maturity framework. Consistent with Lean Construction research grounded in empiricism (Koskela & Howell, 2002a) and observation-participation

methods (Rischmoller, 2005), the objective is not to validate a maturity model but to establish a conceptual starting point based on practice. The BPS is used as the empirical reference case, supported by practitioner experience, internal documentation, and reflective analysis. Following case study guidance (Yin, 2009), the intent is analytical, rather than generalization.

The information related to the BPS was developed through a document-based and observation-participation case study approach. The empirical basis included internal company documents, process maps, implementation guidelines, maturity assessment tools, practitioner reflections from direct involvement in BPS implementation, and informal discussions with project and regional leads. These sources were analyzed to identify the organizational dimensions through which LPS is embedded within the company's broader production strategy.

The research was conducted in three sequential steps. First, a structured synthesis of LC and LPS maturity frameworks was conducted to identify how maturity is currently defined and measured. This study selected the frameworks based on their relevance in LC literature, representation of different maturity approaches (organizational, project-level, and supply chain), and the authors' practical experience using these tools. The analysis extracted comparable dimensions (e.g., purpose, unit of analysis, structure, and measurement focus), enabling the development of a unified comparison and identification of common strengths and limitations.

Second, this study identified the core omissions of existing maturity frameworks when viewed through a company-level production lens. This step relied on the authors' practitioner perspective and experience implementing LPS within enterprise contexts, supported by insights from the BPS as a reference. The analysis focused on evaluating which critical capabilities required to manage production at the organizational level are not explicitly captured in existing frameworks. These omissions were then reframed as opportunities for improvement, specifically in areas such as production system design and commercial alignment. The outcome of this step is a synthesis of gaps and opportunities that reflect what would be required for a maturity framework to serve company-level decision-making.

Third, insights from the identified omissions and opportunities, together with the structural logic observed in the BPS, were integrated to develop an initial outline of a company-level LPS maturity framework. This framework organizes maturity into a set of dimensions that represent enterprise production capability, including production system design, planning and control discipline, KPI feedback, learning systems, commercial alignment, digital enablement, and industrialized construction. The resulting framework is conceptual and exploratory, intended to make explicit how LPS maturity is embedded within the company strategy, and to provide a foundation for future research and validation.

RESULTS

EXISTING LEAN CONSTRUCTION AND LPS FRAMEWORKS

Table 1 presents the comparative analysis of selected Lean Construction and LPS maturity frameworks, chosen based on current literature and the authors' experience applying them in practice. The comparison organizes these frameworks across common dimensions (purpose, unit of analysis, maturity structure, and measurement focus) to make their underlying logic explicit and comparable. The results show that existing frameworks provide strong capabilities for diagnosing Lean implementation across organizational, project, and supply chain contexts.

Table 1: Comparing LC and LPS frameworks selected for this study.

Maturity Framework	Primary purpose	Unit of analysis	Maturity structure	What it measures
LCMM	Diagnose LC maturity; guide transformation; shared language	Organization	Levels + key attributes + ideal statements	Leadership/culture, processes/tools, learning/outcomes
LCMR / Multidim. Matrix	Quantify + visualize maturity gaps; improvement focus	Project	Stage progression + weighted maturity rating	Multi-dimensional maturity profile (physical/behavioural/ strategic)
HALMAT / HEL	Structured supply-chain assessment; improvement planning	Supply chain / infrastructure	Section scoring (0–4) weighted/unweighted	Strategy, systems, leadership, people, flow, quality
CSCMM	Supply chain maturity roadmap; integration guidance	Multi-firm network	Staged maturity	Process/tech/strategy/ value integration

However, they consistently frame maturity as the extent and quality of Lean practice implementation rather than as an organization's ability to manage production as a company's strategy. This distinction highlights a limitation in current approaches and establishes the foundation for identifying opportunities from a company-level perspective.

OPPORTUNITIES FOR IMPROVEMENT FROM A COMPANY PERSPECTIVE

Table 2 synthesizes the core omissions identified when existing maturity frameworks are analyzed through a company-level lens. This analysis builds on the comparative results and incorporates the authors' practitioner perspective, supported by insights from the BPS as an integrated production system, which is embedded as part of the company strategy. While existing frameworks demonstrate strengths in diagnosing Lean adoption and guiding improvement, they under-specify critical capabilities required for managing production at the organizational level. These include the integration of estimating, production system design, and execution control; the use of enterprise-level KPIs to inform decision-making; and the presence of structured cross-project learning mechanisms. These omissions are turned into opportunities for improvement, highlighting the elements necessary for a maturity framework to support company-level strategy and production capability rather than only project-level diagnosis.

Table 2: Opportunities for improvement in the selected LC and LPS frameworks.

Maturity Framework	Strength (what it supports)	Core omission using company-focus lenses	Opportunity for improvement
LCMM	Organization-level Lean diagnosis (culture, leadership, learning)	Limited linkage to estimating, production system design, and business outcomes	Add explicit commercial and production system design capability
LCMR / Multidim. Matrix	Visual, weighted diagnosis of multi-dimensional maturity gaps	Weak enterprise governance and cross-project learning linkage	Connect maturity scoring to enterprise KPIs and decision rights
HALMAT / HEL	Structured assessment of strategy, systems, people, and flow	Does not explicitly assess production planning/control routines	Integrate production system design and estimate–plan–control feedback
CSCMM	Supply-chain integration across process, technology, and strategy	Weak connection to production control and competitiveness	Blend supply-chain maturity with production system and learning loops

COMPANY-GROUNDED OUTLINE FOR A LPS MATURITY FRAMEWORK

Company-level production systems represent an integrated approach to managing production across projects. These systems extend LPS beyond individual tools to encompass the full lifecycle of project delivery, including estimating, production system design, execution control, performance measurement, and continuous improvement. The BPS exemplifies this approach. Rather than functioning as a maturity model, BPS is a structured, enterprise-wide framework that embeds LPS principles within the organization's operational and strategic processes. This includes aligning commercial decisions with production capabilities, designing production systems at the project level, and using performance data to drive continuous improvement across projects. Figure 1 shows the structure of the BPS and its relationship with the LPS.

Figure 1: BPS schematic and alignment with the LPS. Extracted from The Boldt Company.

Within BPS, LPS is not treated as an isolated planning tool but as a core component of a broader production system. This integration enables a more holistic approach to production management, where planning reliability, workflow stability, and learning processes are connected to organizational decision-making and long-term capability development. This perspective suggests an alternative way of understanding maturity, not only as the degree of implementation of specific practices, but as the extent to which those practices are integrated within and supported by a company's strategies. As such, BPS provides a practical, empirically grounded reference point for rethinking LPS maturity at the organizational level.

Table 3 presents the main contribution of this study: an initial outline of a company-level LPS maturity framework grounded in practice and informed by the BPS. The proposed dimensions reflect long-term implementation experience and represent the capabilities required to sustain LPS within an organizational context. The framework shifts the concept of maturity from assessing Lean adoption quality to defining enterprise production capability by explicitly linking production system design, planning and control discipline, KPI-driven learning, commercial alignment, digital enablement, and industrialized construction.

Table 3: Outline of a company-grounded LPS framework.

Dimension (company-level maturity)	**What BPS aims**	**How BPS aligns production management as a company strategy**
A. Production system design maturity	BPS is Boldt's "exclusive way to plan and manage work," supported by an evolving suite of tools/practices	Define maturity levels for "production strategy per phase," standardization, evidence requirements, and governance routines
B. LPS execution maturity (planning/control discipline)	BPS focuses on predictability and reliability in delivery	Explicitly map BPS to LPS components (master/phase/make-ready/weekly/daily/metrics/CI) and define maturity evidence per level
C. Measurement & KPI feedback maturity	Boldt tracks projects across KPIs (reliability, speed to market, safety, quality, customer & worker satisfaction)	Tie maturity levels to KPI stability trends and decision thresholds (what changes at each level)
D. Learning system maturity (enterprise continuous improvement)	Boldt emphasizes continuous improvement and knowledge sharing ("get better, faster and safer")	Formalize improvement cycles (obstacles/actions), cross-project learning loops, and standard updates (similar to Kata logic)
E. Commercial-to-production alignment maturity (for bidding proposals)	Boldt describes TVD as establishing budget early and maintaining continuous estimating throughout design to stay aligned to budget	Make the estimating-to-production feedback loop explicit: how estimates inform production design and how production outcomes refine future pursuit/estimating
F. Digital enablement maturity (BIM/4D/5D + collaboration tools)	Boldt uses BIM to improve estimates, conflict detection, 4D/5D sequencing, and cloud-based collaboration	Define maturity as "digital supports production control and learning," not just tool adoption (visibility, decision cadence, information flow)

Table 4: Outline of a company-grounded LPS framework (continued)

G. Industrialized production maturity (prefab/modular integration)	Boldt positions prefab/modular as improving safety, quality, and budget predictability	Integrate prefab/modular readiness into production strategy maturity (design-for-manufacture, constraints, logistics, quality checks)

In this context, BPS serves as an empirical reference rather than a maturity model, illustrating how these elements function as an integrated system. The proposed framework makes these relationships explicit and provides a structured starting point for future development of maturity levels and assessment criteria. Additionally, BPS presents an "assessment kit" that consists of a set of questions that also provides support for the leadership team to evaluate how sustainable the LPS is at a project-level, regional divisional-level, and ultimately at a company level. Figure 2 shows an extract of this set of questions and is also something to consider as part of this outline for a practitioner-grounded LPS maturity framework.

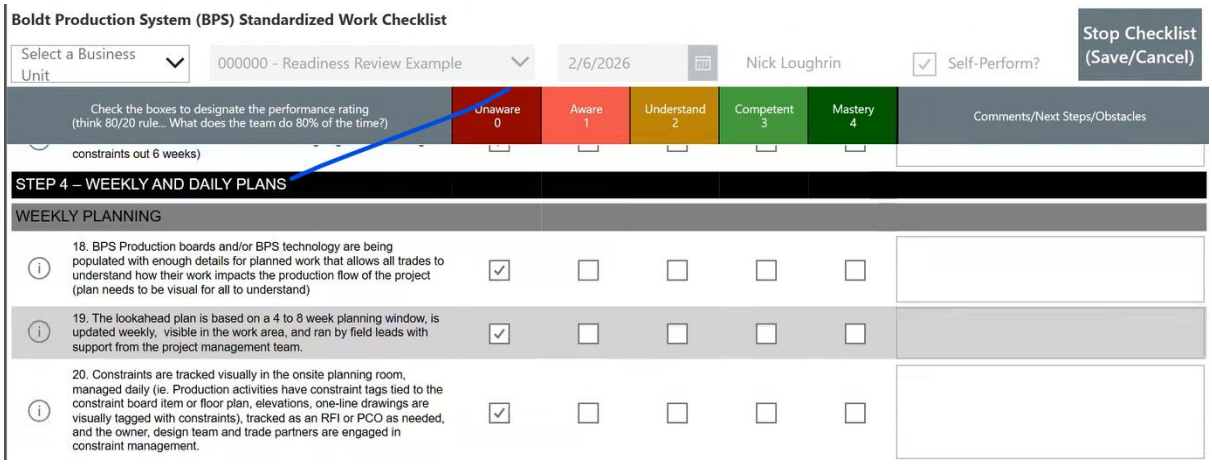

Figure 2: BPS sustainability set of questions.

DISCUSSION

The results of this study reinforce an ongoing research interest identified in the LC literature: existing maturity frameworks are effective at diagnosing the implementation of Lean practices but remain limited in conceptualizing maturity as an integrated, company-level production capability. As shown in Table 1, frameworks such as LCMM and LCMR provide structured approaches to assess organizational attributes, cultural behaviors, and project-level maturity progression (Nesensohn et al., 2014; Sainath et al., 2018), while HALMAT/HELMA and CSCMM extend maturity thinking toward supply-chain and multi-firm integration (Highways Agency, 2012; Vaidyanathan & Howell, 2007). However, when interpreted through a company-level lens, these models primarily evaluate "how well Lean is implemented" rather than "how effectively production management is embedded as a company strategy," confirming the research gap identified in the literature review.

The analysis synthesized in Table 2 builds on this observation by explicitly identifying the core omissions that limit the applicability of existing frameworks for company-level decision-making. The findings of this paper highlight that critical enterprise mechanisms (such as the linkage between estimating and production system design, the governance of production strategies, and the use of performance feedback for organizational learning) are underrepresented. This extends prior benchmarking efforts from P2SL (Ballard & Tommelein, 2016, 2021) by not only describing current practice but also clarifying where existing maturity constructs fall short in supporting production as a sustainable organizational capability.

The introduction of the BPS as an empirical reference case provides a concrete response to this gap. Rather than treating maturity as a standalone assessment exercise, BPS demonstrates how LPS can be embedded within an enterprise-wide production management tool that aligns commercial decisions, production system design, execution control, and continuous improvement. The dimensions proposed in Table 3 reflect this integration, translating over two decades of BPS implementation into an initial outline of maturity as organizational capability. Importantly, BPS also incorporates practical mechanisms for sustaining LPS implementation at scale, such as behaviour and capability-based assessment tools that provide visibility across projects and regions, support the development of internal subject matter experts (SMEs), and enable continuous alignment between project execution and company strategy. This positions maturity not only as a measure of implementation quality but as a governance system for maintaining and evolving production management practice across the enterprise.

This study has important limitations. The proposed framework is conceptual and grounded in a single company case, which limits its generalization across different organizational contexts. Additionally, the identification of omissions and proposed dimensions relies on the authors' practitioner perspective, which, while valuable for capturing tacit knowledge, may be subjective. The study also does not operationalize the proposed maturity dimensions into measurable indicators or validate their impact on project or enterprise performance. These limitations are consistent with the exploratory and theoretical nature of the research, which aims to establish a structured starting point for future research rather than a validated maturity model.

CONCLUSION

This paper aimed to develop an initial, practitioner-grounded outline of a company-level LPS maturity framework, addressing the gap between existing maturity models and the need to conceptualize maturity as an integrated organizational production capability. This objective was achieved through a synthesis of existing LC maturity frameworks, the identification of their limitations from a company perspective, and the use of the BPS as an empirical reference to ground the proposed framework. The results demonstrate that while current models provide strong diagnostic and benchmarking capabilities, they do not fully capture how organizations design, govern, and continuously improve production management as a strategic function.

The main contribution of this study is the development of a conceptual outline that reframes LPS maturity from "implementation quality" toward "enterprise production capability." By organizing maturity into dimensions such as production system design, LPS execution, KPI feedback, learning systems, commercial alignment, digital enablement, and industrialized construction, the proposed framework outline extends existing maturity approaches and aligns them with company-level decision-making and strategy. In this sense, the framework complements rather than replaces existing models, positioning itself as an evolution toward integrating maturity assessment with production management governance, which intent is to be useful for companies using it.

Given its exploratory nature, this study opens several avenues for future research. Further work is required to operationalize the proposed dimensions into observable indicators and assessment criteria, validate the framework across multiple organizations and project contexts, and examine the relationship between maturity progression and enterprise performance outcomes. The authors believe that, eventually, other companies will have their own versions of BPS and a broader evaluation can be conducted at that time to validate this interaction of LPS implementation and companies strategies. Such efforts would enable the transition from a practitioner-grounded conceptual outline toward a more robust and scalable maturity framework, contributing to the broader goal of establishing more consistent and comparable approaches to LPS maturity across the construction industry.

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