Arsianto, Y. (2026). Beyond the jobsite: adapting make-ready logic to managerial decision-making in construction. 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. 1064–1075). https://doi.org/10.24928/2026/0179

BEYOND THE JOBSITE: ADAPTING MAKE-READY LOGIC TO MANAGERIAL DECISION-MAKING IN CONSTRUCTION

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ABSTRACT

Despite extensive advances in Lean Construction, particularly through the Last Planner® System (LPS), limited attention has been given to structuring managerial meetings as production systems for decision-making. As a result, managerial processes remain prone to decision latency, information variability, and unreliable commitments. This study addresses this gap by developing the Make-Ready Meeting (MRM) framework, which extends Make-Ready Planning logic from operational workflows to managerial decision contexts. Using a conceptual research approach supported by a narrative literature review, the framework integrates Lean Office (LO), Lean Governance (LG), and LPS into a unified model emphasizing information readiness, constraint management, and commitment reliability. A key contribution is the introduction of a filter gate mechanism that operationalizes shielding at the managerial level by screening decision inputs prior to execution. The framework repositions meetings as commitment-production systems and shifts cognitive effort upstream. This cross-level theoretical extension contributes to Lean theory by linking decision-making reliability with workflow performance, offering a pathway to reduce decision latency in construction projects.

KEYWORDS

Last Planner® System, lean construction, make-ready planning, continuous improvement, commitment.

INTRODUCTION

In complex construction projects, managerial meetings play a crucial role in coordinating decisions that shape project flow, cost, and schedule performance. Despite their strategic importance, these meetings are often perceived as time-consuming, reactive, and out of sync with the operational realities of the project(Rogelberg et al., 2007). Meetings are also often viewed as merely administrative rituals, rather than as productive systems that generate decisions and commitments(Koskela, 1992). Consequently, Decisions are often delayed due to incomplete information, unresolved interdependencies, or the absence of authorized decision-makers(J. Allen et al., 2018). In practice, however, meeting outcomes directly impact the reliability of downstream workflows(Ballard & Howell, 2003).

From a Lean Construction perspective, this situation indicates a structural contradiction. Significant theoretical and practical progress has been made to stabilize production at the operational level, particularly through the Last Planner® System (LPS) and Make-Ready Planning(Ballard, 2000). However, managerial meeting processes have largely not adopted formal production system design. As a result, meetings are often viewed as merely administrative rituals, rather than as productive systems that generate decisions and

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commitments(Koskela, 1992). In fact, the outcomes of these meetings directly impact the reliability of downstream workflows(Ballard & Howell, 2003).

This paper argues that the decision-making process in managerial meetings is structurally equivalent to the production process at the field level and, therefore, can be addressed using the Make-Ready principle and shielding(Fauchier & Alves, 2013). By extending the logic of the Last Planner® System beyond the field and into the managerial realm, meetings can be redesigned to function as a controlled production system for decision-making.

This research developed the Make-Ready Meeting (MRM) Framework, a conceptual model that integrates Lean Office, Lean Governance, and the Last Planner® System to structure managerial meetings around information readiness, constraint management, and commitment reliability. This framework shifts the primary cognitive and analytical workload from the meeting room to the preparation phase, ensuring that decisions are based on validated, synchronized, and actionable data.

RESEARCH METHODOLOGY

This research adopts a conceptual study supported by a narrative literature review. This approach was chosen because the main focus of the research is on theory development and framework building, where conceptual development precedes empirical validation. The methodology consists of four main stages:

COLLECTING LITERATURE

A search of various reference sources from various journals in the International Group for Lean Construction (IGLC) database and other leading construction management literature. The literature was searched based on relevant keywords such as last planner® system, lean office, lean governance, managerial meetings, decision-making, and various keywords supporting the main topic.

LITERATURE REVIEW

A literature review was used to map lean thinking from various sources regarding managerial meetings. This literature review mapping examines managerial meetings, lean office, lean governance, and LPS in supporting production systems for decision-making at the managerial level.

CROSS-LEVEL THEORICAL SYNTHESIS

Following the literature collection and review, the results were analysed using a theory-oriented synthesis approach. This process remapped lean principles and concepts from lean governance, lean office, and LPS into a unified framework for implementing managerial decision-making meetings.

CONCEPTUAL FRAMEWORK DEVELOPMENT

The synthesis results were then used as the basis for developing the MRM Framework. This model was developed using the concepts of readiness conditions and filter gate mechanisms.

- Readiness Condition Defined as an independent variable that determines the quality of meeting outcomes.
- Filter Gate Mechanism Positioned as a control tool to ensure that only mature inputs can enter the decision execution stage.

The final result of this framework concept is focused on the reliability of managerial commitment and the reduction of decision latency.

NARRATIVE LITERATURE REVIEW

MANAGERIAL MEETINGS AS DECISION-PRODUCTION SYSTEMS

In conventional construction organization and management literature, managerial meetings are primarily used as a mechanism for coordination, information exchange, or stakeholder alignment(J. A. Allen & Lehmann-Willenbrock, 2023). However, from a Lean perspective, meetings can be reconceptualized as a production system that transforms information inputs into decisions and commitments(Ballard & Howell, 2003). This production-oriented view aligns with broader organizational theory that conceptualizes decision-making as an information-processing activity subject to variability, delay, and capacity constraints.
As shown in Figure 1, decision-making depends on the availability, quality, and coherence of input information (Bara & Knežević, 2013), similar to how production reliability at a project site depends on the availability of materials and work prerequisites. By treating information preparation as a resource managed using readiness planning principles in a LPS, managerial meetings have the potential to reduce decision latency.

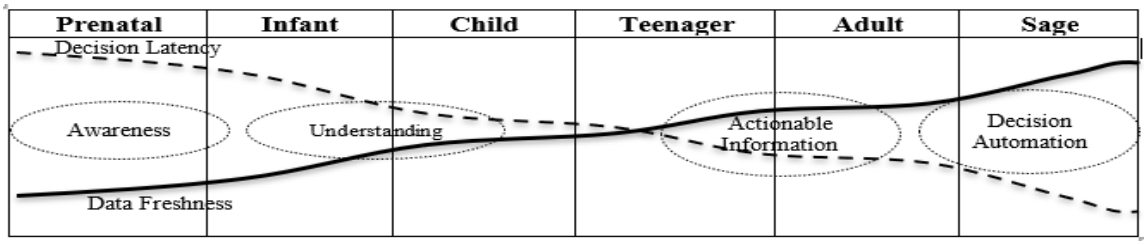

Figure 1: Maturity model for business Intelligence (Bara & Knežević, 2013)

As shown in Figure 2, decision Latency is defined as the time between the availability of information needed to make a decision and the time the decision is finally made and implemented(Hackathorn, 2004). In the context of construction management and Lean workflows, this latency is considered a form of information waste because it delays productive actions and impedes workflow (Ballard & Howell, 2003)

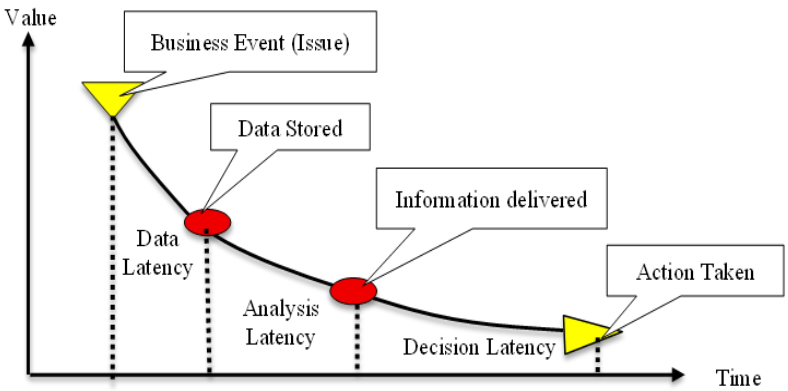

Figure 2: Type of Latency (Hackathorn, 2004)

LEAN OFFICE AND INFORMATION FLOW IN MANAGERIAL PROCESSES

Lean Office theory extends Lean principles to administrative and information-intensive processes, emphasizing waste elimination, flow efficiency, and standardization in non-physical work(Liker & Meier, 2006). The Lean Office concept when mapped in a managerial meeting can be seen in Table 1. This mapping is done because managerial decision-making activities

are essentially "administrative and information processes." While in the production area we manage materials, in the managerial area we manage information.

Table 1: Mapping Lean Office into managerial meetings

Lean concept	Interpretation in Managerial Meetings	Output
Value Stream Mapping	Identify who the key decision makers are and eliminate excess bureaucracy	Agenda list, Stakeholder list, Time Boxing
5S	Ensure supporting data (reports/progress) is ready, before the meeting begins.	Pre-read Material
Continuous Improvement	Adjust meeting schedules or topics based on obstacles that arise in the field	re-planning agenda, learning feedback
Visual Management	Use visual boards to keep work status clear and meeting durations efficient.	Facilitated Discussion
Poka-Yoke	Ensure that each instruction has a person in charge (PIC) and a deadline so that no tasks are missed.	Action Plan

LEAN GOVERNANCE, DECISION AUTHORITY, AND COMMITMENT READINESS

While Lean Office addresses information efficiency, it is insufficient to address governance constraints that impact the reliability of decision-making. The complexity of decision-making among multiple stakeholders with divergent interests remains a significant issue in the construction industry (Hu et al., 2024). In many cases, differing perspectives among stakeholders result in collaboration failures due to a focus on individual interests (Hu et al., 2024). Therefore, the Lean Governance literature emphasizes the importance of clear authority, accountability, and transparency in enabling effective coordination and commitment (Aaltonen & Kujala, 2016)

The concept of lean governance mapped to managerial decision-making can be seen in Table 2. This mapping aims to ensure that every managerial decision is not only swift but also has accountability, transparency, and strategic alignment without cumbersome bureaucracy.

Table 2: Mapping lean governance into managerial decision meetings

Lean concept	Interpretation in Managerial Meetings	Output
Strategic Alignment	Ensure meeting topics are relevant to KPIs and key targets.	Meeting Objectives & Stakeholder roles.
Information Transparency	Providing valid data as a Single Source of Truth.	Verified Data
Adaptive Governance	Flexibility to change priorities if a high risk suddenly arises.	Risk Mitigation
Empowered Decision Making	Give authority to meeting participants according to their authority so that decisions can be taken.	Decision-making
Accountability & Auditability	Clear commitment tracking (who does what and when).	Action plan & Monitoring.

EXTENDING THE LAST PLANNER® SYSTEM TO THE MANAGERIAL LEVEL

The Last Planner® System (LPS) has been widely validated as an effective planning and control system for improving workflow reliability through Make-Ready Planning, commitment-based coordination, and safeguard mechanisms(Ballard & Tommelein, 2021). At the operational level, Make-Ready Planning focuses on identifying and eliminating physical, informational, and prerequisite constraints to enable reliable production planning.

Recent research has shown that the logic of readiness, safeguards, and commitment reliability can be applied beyond the field, particularly in contexts where decisions are made under conditions of uncertainty and interdependence (Power et al., 2023). However, the literature still lacks a structured framework for translating Make-Ready principles into the managerial meeting environment, where decisions, not physical tasks, are the primary outcome (Ebbs et al., 2024).

This theoretical transformation from the field to the meeting requires a reinterpretation of LPS concept. Table 3 details how the concepts are reinterpreted as managerial decision meeting. The concept of shielding which usually protects field crews from workflow variability, now serves to protect managers from poorly planned meeting agendas or unverified information.

Table 3: Mapping lean concepts from operational planning to managerial meetings

Lean Concept	Original Application (Site Level)	Interpretation in Managerial Meetings	Output
Make-Ready Planning	Ensuring tasks are executable by removing constraints before scheduling	Ensuring agenda items are decision-ready through validated data and solution maturity	preparation standards prior to meetings
Constraint Analysis	Identification of physical, material, and prerequisite constraints	Identification of informational, authority, and coordination constraints	constraint management
Shielding	Protecting crews from workflow variability	Protecting managers from unprepared agenda items	Filter Gate mechanism
Reliable Promises	Commitment to tasks that can be executed as planned	Commitment to decisions that can be implemented without rework	Commitments Confirmation
Flow Orientation	Continuous production flow on site	Continuous decision flow across stakeholders	Reduction of decision latency

CROSS-LEVEL THEORICAL SYNTHESIS

The reviewed literature reveals a critical gap at the intersection of Lean Office, Lean Governance, and the Last Planner® System. Lean Office identifies inefficiencies in information processing, but lacks a commitment-oriented logic. Lean Governance clarifies aspects of authority and accountability, yet does not address information maturity and readiness. Meanwhile, Last Planner® System provides a robust mechanism to ensure the reliability of commitments, but remains underutilized at the managerial level.

To address this gap, this study integrates the three theoretical streams into Table 4 to develop the MRM Framework. Each lean concept is mapped to the development stages of this

Framework. Through this synthesis, managerial meetings are positioned as a production commitment system guided by the principles of readiness, shielding, and flow.

Table 4: Synthesis LO, LG, and LPS to Managerial Decision-Making process

Stage	LO	LG	LPS	OUTPUT
Planning Stage	Value Stream Mapping	Strategic Alignment	-	Agenda list, Time Boxing, Meeting Objectives, Stakeholder roles.
Preparation Stage	5S	Information Transparency, Adaptive Governance	Make-Ready Planning, Constraint Analysis, Shielding	Collecting requirements, Collecting data & resource, Constraint & Risk management, pre-read material, Filter Gate
Execution Stage	Visual Management	Empowered Decision Making	Reliable Promises	Facilitated discussion, Decision making, Commitment confirmation
Follow-up Stage	Poka-Yoke	Accountability & Auditability	-	Action plan, monitoring, learning feedback
Other	Continuous Improvement	-	Flow Orientation	MRM Framework, re-planning, re-schedule, evaluating filter gate

CONCEPTUAL FRAMEWORK DEVELOPMENT

The MRM framework conceptualizes managerial meetings as a decision-making system guided by the principles of readiness, shielding, and commitment reliability. By integrating the principles of the Last Planner® System, Lean Office, and Lean Governance, this model transforms managerial activity from a reactive decision-making pattern to a conditioned commitment-making process. Therefore, meetings serve as the execution point of all preparatory efforts, no longer simply a forum for problem formulation.

Based on this theoretical synthesis, the MRM framework was developed, as visualized in Figure 3. This framework comprises four main stages: planning, preparation, implementation, and follow-up. A crucial component of this model is the preparation stage, where the principles of readiness, shielding, and commitment reliability are deeply integrated.

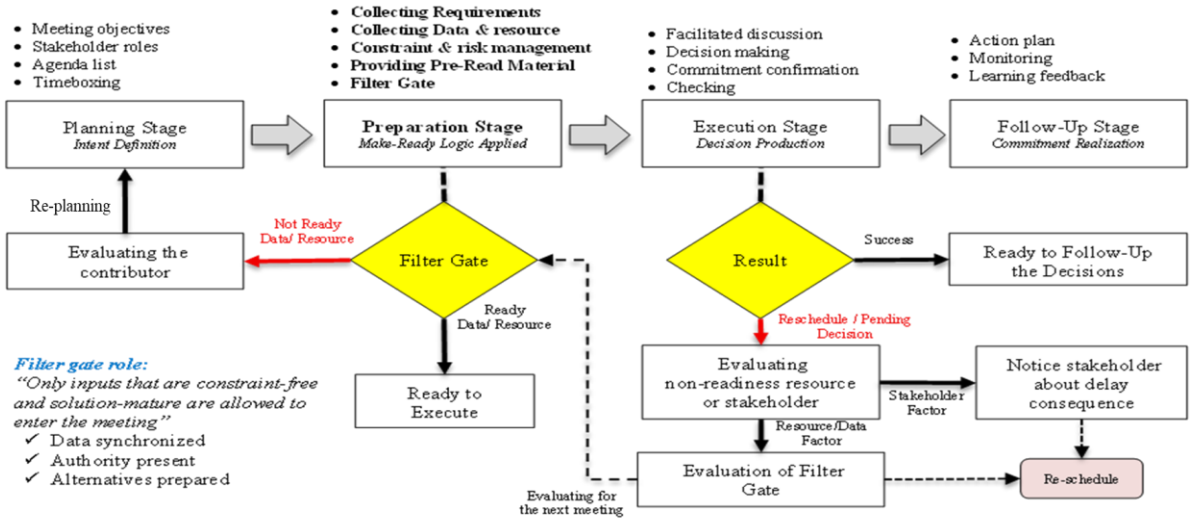

Figure 3: Make-Ready Meeting (MRM) framework

PLANNING STAGE: DEFINING THE DECISION SYSTEM

The planning stage serves to establish the boundary conditions for a structured meeting. This includes establishing decision objectives, identifying decision-makers, and developing an agenda based on decision-making logic.

At this stage, the role of each meeting participant in each agenda item should be explained in detail. These roles should be clearly defined during the planning stage to ensure optimal preparation. Worksheet for mapping meeting participant roles is presented in Table 5.

Table 5: Roles of Meeting participants

Agenda	Target	Duration	Contributor	Stakeholder	Decider
Opening		5	-	-	-
Agenda 1	Target 1,2,3	10	Name C	Name F	Name F
Agenda 2	Target 4,5,6	15	Name D	Name G	Name H
Agenda 3	Target 7,8,9	15	Name E	Name F	Name H
Closing		5	-	-	-

Facilitator/Moderator : Name A Note-Taker : Name B

PREPARATION STAGE: CREATING READINESS AND SHIELDING

The preparation phase serves to operationalize the Make-Ready principle at the managerial level. The primary focus of this phase is transforming raw project data into input ready for decision-making.

To ensure readiness before the implementation stage, this process includes five systematic steps. These steps are carried out sequentially, with the filter gate being the final stage, assessing whether an agenda item is worthy of discussion or should be postponed. To support the success of this process, participants are divided into several specific roles, as presented in Table 6.

Table 6: Specific Responsibilities on preparation stage

Step	Main Focus	Main Role	Specific Responsibilities
Requirements gathering	Definition of Goals	Stakeholder & decider	Setting goals (GOAL) and success criteria.
Data/resource collection	Input Availability	Contributor	Presenting valid data and technical supporting assets.
Constraint management	Eliminate Disturbances	Facilitator & Contributor	The facilitator helps map out obstacles that may hinder decision-making; the contributor provides alternative steps as a backup plan to the main plan.
Provision of pre- reading	Participant Literacy	Note Taker & Contributor	Contributors prepare the materials; Note Takers distribute reading materials to all participants.
Filter gate	Final Validation	Facilitator	The facilitator verifies the completeness of the documents and decide the agenda is ready for discussion or should be postponed.

The filter gate is a control mechanism or final validation tool in the preparation phase of a managerial meeting. It ensures that only mature and obstacle-free agenda input is allowed to proceed to the decision-making stage. Rather than passively waiting, this step aims to ensure meetings are supported by quality data to produce informed decisions.

The filter gate rejects meeting agenda items that are not ready in terms of resources or data. However, progress related to unready data or resources can still be included in the meeting agenda if the agenda's purpose is changed from "decision-making" to "information." This change transforms the meeting agenda into an information-sharing activity that does not result in a decision.

Although the preparation phase is protected by a filter gate, decision delays can still occur. Therefore, the filter gate utilizes each delay incident as a valuable lesson learned to update the system, while creating readiness thresholds that adapt to stakeholder or decision-maker standards. Through this approach, the possibility of repeated decision delays can be reduced.

The readiness thresholds in the filter gate are adaptive and define the formal requirements for a meeting to be ready to produce a decision. These requirements generally refer to requests from stakeholders, decision-makers, or improvements proposed by the facilitator. However, these readiness thresholds must at least meet the minimum criteria outlined in Table 7.

Table 7: Readiness Thresholds minimum for MRM

Filter Criteria	Validation Questions	Status	PIC
Data Synchronized	Is the data synchronized with other documents? (Examples: integration cost estimate and designs)	✓	Contributor
Authority Present	Are stakeholders or deciders present at the meeting?	✓	Stakeholder/ decider
Constraint-Free	Have the constraints on this decision-making been declared "Clear"?	✓	Facilitator
Alternatives Prepared	Are there at least 2 solution options available along with risk-cost-benefit analysis?	✓	Contributor
Pre-Reading Read	Have all participants confirmed that they have read the material (min. 24 hours prior)?	✓	Note Taker

EXECUTION STAGE: COMMITMENT PRODUCTION

In the implementation phase, meetings are no longer treated as problem-solving workshops, but rather as decision-production environments. The role of facilitation is to ensure that discussions converge toward explicit decisions, supported by previously validated input.

Decisions are produced as managerial commitments, each accompanied by clearly defined responsibilities, authorities, and time constraints. The emphasis shifts from the volume of discussion to the clarity and reliability of decisions, thereby minimizing cognitive load and reducing decision latency.

If a decision-making process fails or is delayed during this phase, the facilitator must conduct an evaluation. The factors causing this failure are classified into two categories: unpreparedness of stakeholders/decider and incomplete resources/data. If the cause is unpreparedness in studying pre-meeting materials or an inability to provide appropriate requirements, the facilitator must issue a notification regarding the deadline and the impact of the decision-making delay to stakeholder and decider. On the other hand, if the constraint lies in a lack of resources/data, an evaluation of the requirements criteria in the filter gate that passed the agenda item is necessary. This role is carried out to keep the pressure on participants regarding their role responsibilities during both the preparation and execution phases.

FOLLOW-UP STAGE: FLOW CONTROL AND LEARNING

The follow-up stage ensures that the commitments made during meetings are integrated into operational workflows and continuously monitored. This stage closes the feedback loop by tracking execution, capturing deviations, and enabling organizational learning.

By institutionalizing reflection and documentation, the MRM framework supports continuous improvement in the accuracy of managerial planning and readiness standards for the future.

KEY CHARACTERISTICS OF THE MRM FRAMEWORK

The MRM framework exhibits three defining characteristics:

- Proactive: Intellectual and analytical work is shifted upstream, reducing reactive decision-making.
- Flow-Oriented: Managerial decision-making is treated as flow units whose reliability affects downstream production

- Continuous improvement: Filter gate as a dynamic learning mechanism through evaluation aimed at improving preparation and preventing repeated failures.

THEORITICAL AND ORGANIZATIONAL IMPACT

As a conceptual study, this research does not report empirical measurements, but rather presents propositions regarding the theoretical implications and expected organizational impact of implementing the MRM framework.

THEORETICAL IMPLICATIONS

Theoretically, this research extends the application of Lean Office, Lean Governance, and LPS to the realm of managerial decision-making. This conceptual synthesis offers a framework for how preparation, flow-oriented, and continuous improvement logic can reduce decision-making latency.

As seen in Figure 4, this framework focuses on reducing waste caused by lack of data and resource readiness during the execution phase by using pre-reading material, shielding, filter gates, stakeholder roles, and constraint and risk management. Furthermore, this framework also has the potential to reduce repetitive decision delays by using filter gates and evaluating results. This optimization has the potential to reduce decision latency on both sides.

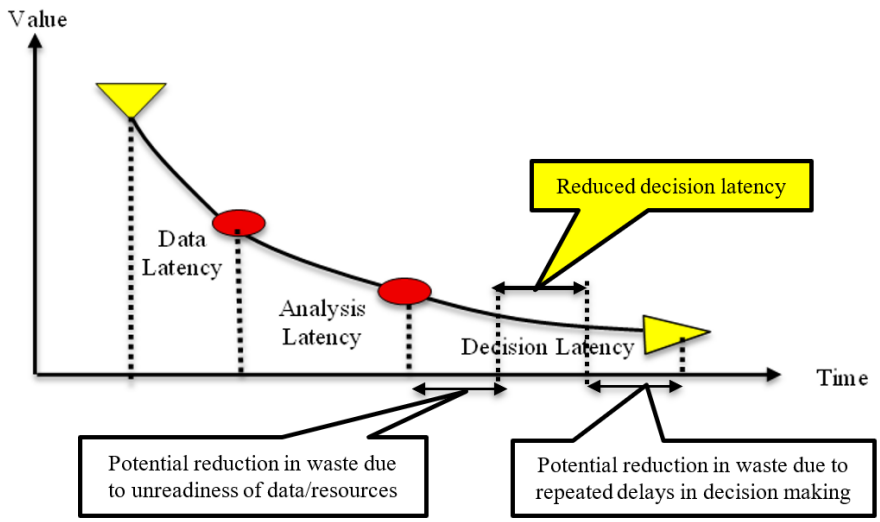

Figure 4: Potential reduction in decision latency by using the MRM framework

While there is potential for decision latency to change to analysis and data latency, this is still the right move. With advances in data analytics platforms and Building Information modelling (BIM) technology, analysis and data latency will be significantly reduced compared to decision latency, which still relies on stakeholder or participant decisions.

EXPECTED ORGANIZATIONAL IMPACT

MRM offers the potential to transform managerial meetings cultures from domination data-clarification sessions to strategic commitment-making spaces. By ensuring thorough preparation through the pre-reading phase, decision-makers' cognitive time can be allocated more effectively to decision-making rather than simply studying meeting materials on the spot and validating data.

Filter gates are expected to foster an organizational mindset that embraces the principles of "right the first time" and "continuous improvement." This is expected to reduce repetitive meetings due to delayed decisions.

CONCLUSION

The primary theoretical contribution of this study lies in demonstrating that decision latency in construction projects is fundamentally a flow problem. Through the integration of Lean Office, Lean Governance, and the Last Planner® System, the MRM framework demonstrates that improvements in the preparation stage have the potential to reduce decision latency.

The introduction of a filter gate mechanism represents a significant conceptual advancement. By establishing a readiness threshold before agenda items are accepted in meetings, this framework applies the shielding principle of the Last Planner® System at the managerial level. The filter gate also applies the principle of continuous improvement of decision delay events, allowing adaptation of the readiness threshold to align with decider/stakeholder standards.

This study has limitations inherent to conceptual research. The framework was developed through literature synthesis and theoretical reasoning and has not been empirically validated. Future research should test the MRM framework through case studies and longitudinal project data to observe its impact on commitment reliability, decision latency, and project performance indicators. Furthermore, the integration of digital technologies such as Building Information Modelling (BIM) and data analytics platforms offers promising opportunities to enhance the data readiness processes embodied in the MRM framework.

In conclusion, the MRM Framework provides a theoretically grounded pathway for extending Lean planning logic into the management and governance realm of construction projects. This addresses a critical but underexplored source of project variability: the reliability of managerial decisions.

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