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INNOVATIVE AGILITY: ORCHESTRATING PURPOSE, PRACTICE, AND RESPONSIVENESS

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ABSTRACT

This article introduces Innovative Agility as a dynamic capability essential for sustainable innovation in volatile and complex environments. It explores the synergy between agility and innovation, emphasizing the strategic role of agile governance in aligning organizational responses with evolving challenges. The article presents MAnGve-i9 (Mi9), a framework designed to manage innovation in science, technology, and innovation (STI) ecosystems. Developed through Design Science Research, Mi9 integrates agile governance principles and iterative workflows across four cycles: Ideation, Design, Development, and Evaluation. Grounded in Agile Governance Theory, the article frames agility as a socio-technical phenomenon, supporting strategic adaptability. It concludes by framing Innovative Agility as a paradigm for organizations seeking resilience, relevance, and long-term growth.

Keywords: Innovative Agility; Agile Governance; Dynamic Capabilities; Innovation Management; Design Science Research; Socio-technical Systems.

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INTRODUCTION

In a world marked by accelerating technological change and increasing uncertainty, innovation has become critical for organizations seeking to remain relevant and competitive. However, sustained innovation requires more than creativity or investment in Research and Development (R&D) — it demands agility as a core organizational capability. This article introduces the concept of Innovative Agility, understood as the fusion between the capacity to adapt rapidly to change and the continuous, systemic pursuit of innovation.

Innovative Agility represents a more foundational perspective than innovating agility (innovation-enabling agility), which refers to the practical use of agile methods to support and accelerate innovation initiatives. Innovative Agility conceives agility as an intrinsic component of an organization's innovation capacity, deeply embedded in its strategic, operational, and cultural dimensions. In this view, the ability to innovate is inseparable from the ability to anticipate trends, adapt to emerging challenges, and continuously experiment through short, iterative feedback cycles.

This principle of continuous experimentation can be observed in various contexts. For instance, a tech startup developing a language learning app may release small, incremental features — such as gamified exercises or AI-driven feedback — and quickly measure user engagement to guide future updates. Similarly, a public health agency might prototype a digital platform for vaccination scheduling in one region, gather user feedback within a week, and adjust usability or messaging before scaling. These short, iterative cycles of testing, learning, and refinement allow teams to reduce risk, incorporate real-world insights, and accelerate value delivery in dynamic environments.

Historically, the path from structured information systems development to agile methodologies marked a shift from technical efficiency to user-centered and adaptive approaches (Martin & McClure, 1988; Sommerville, 2007). Today, this evolution continues with the recognition that agility must extend beyond the project or team level and be embedded in the governance systems that guide innovation ecosystems—particularly in science, technology, and innovation (STI).

In this work, we are dealing with the governance concept proposed by Luna, Kruchten, and Moura (2015), which defines governance as a cluster of steering capabilities based on three core dimensions: strategic planning, enforcement mechanisms, and responsiveness to change. This perspective emphasizes governance not merely as a set of control structures, but as a dynamic and adaptive function that enables organizations to align decisions with long-term goals while remaining sensitive to evolving internal and external contexts.

This article presents Mi9 – MAnGve for Innovation Management, a framework designed to support the governance and management of innovation in STI ecosystems. Grounded in Agile Governance Theory (AGT) and developed through the Design Science Research (DSR) methodology, Mi9 offers an integrated structure based on four interdependent cycles—Ideation, Design, Development, and Evaluation. It aims to foster innovative agility by aligning adaptive workflows with strategic coordination across multidisciplinary teams.

By articulating the theoretical foundations and practical applications of Innovative Agility, this article contributes to both academic discussion and managerial practice, offering a coherent path for governing innovation in turbulent, complex, and fast-evolving environments.

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BACKGROUND

Understanding the foundations of Innovative Agility requires a theoretical exploration of three interrelated domains: the nature of organizational agility, the contextual challenges posed by volatile and uncertain environments, and the catalytic role of emerging technologies in driving innovation. This section outlines the conceptual landscape that underpins the discussion, clarifying the strategic relevance of agility as a dynamic capability and positioning it as a key enabler of innovation in science and technology ecosystems.

The Need for Agility

Some of us began studying, researching, and writing about agility and its impact on project management and organizational contexts several years ago, prompted by the very question that gives title to this subsection (Luna, Costa, & Moura, 2011). This early perspective was refined through practical experience and a systematic literature review on agile governance (Luna et al., 2014). From this process, conceptual clarity emerged: agility is a critical capability for surviving and innovation in complex and dynamic environments.

Historically, agility has evolved from lean thinking — originally focused on waste elimination in manufacturing (Wang, Lane, & Conboy, 2011) — to a broader understanding as a dynamic capability. Agility is the ability to sense and respond to change, enabling organizations to adapt while pursuing opportunities in fast-changing contexts quickly (Gong & Janssen, 2010).

Agility differs from operational competencies by focusing on rapid adaptation and strategic responsiveness. It allows organizations to navigate uncertainty through iterative experimentation and market feedback, even at the cost of rework. While lean thinking seeks efficiency through process optimization, agility prioritizes time-to-market and responsiveness. Hence, finding a rational balance between these approaches may result in a unified agile approach with superior outcomes. Indeed, this integrated view of agility and lean thinking was first proposed by Luna et al. (2014) as a strategic response to reconcile speed with value optimization.

In this context, agility should be understood not merely as a set of skills or practices but as a dynamic capability — an inherent organizational potential to mobilize resources, knowledge, and learning processes in response to change (Teece, 2018). While competencies refer to observable actions or performance outcomes, capabilities are the underlying enablers that precede and support them. Innovative Agility, therefore, emerges from developing and refining such latent capabilities across the organization.

This tension becomes especially evident in startups, which often must prioritize agility to quickly prototype, launch, and iterate new products or services. In doing so, they may deliberately incur *technical debt*[1] — accepting inefficiencies or the need for rework later on, in exchange for gaining early market presence. From a lean perspective, such decisions represent waste to be avoided; from an agile perspective, they can be strategically justified to meet time-sensitive goals. Conversely, in highly regulated sectors like healthcare or finance, a more deliberate approach may be needed — delaying releases to ensure compliance or developing innovative features that offer strategic advantage.

1 The term "technical debt" was coined by Ward Cunningham to describe the implicit cost of choosing expedient, short-term solutions instead of more robust and sustainable ones. It refers to a metaphorical "debt" incurred when development teams prioritize speed—often to meet deadlines or gain early market entry—over long-term maintainability or quality (Ciolkowski, Lenarduzzi, & Martini, 2021).

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Agility, therefore, must be understood as more than a method or mindset. It is a dynamic capability — a potential that allows organizations to transform quickly and strategically. In this article, we adopt Kruchten's (2011) definition of agility as "the ability of an organization to react to changes in its environment faster than the rate of those changes," a definition that unifies agile and lean under a single goal: strategic responsiveness.

Volatile and Uncertain Environments

The concept of agility gains meaning only when considering the environment in which it is applied. Business environments have become increasingly complex, unstable, and unpredictable in recent decades. The U.S. Army War College coined the acronym VUCA to describe such contexts, referring to Volatility, Uncertainty, Complexity, and Ambiguity. This concept, originally used in military strategy after the Cold War, was later adopted in management to characterize the challenging nature of global markets and organizational decision-making (Taskan, Junça-Silva, & Caetano, 2022).

In this context, volatility refers to the speed and intensity of change; uncertainty refers to the difficulty of predicting future events; complexity refers to the multitude of interconnected variables; and ambiguity refers to the lack of clarity or the possibility of multiple interpretations in a given scenario.

Ambiguity, in particular, implies that the same data or event can be perceived differently depending on the observer's context or background. This indeterminacy makes decision-making more difficult, as actors must act without definitive information, often interpreting signals through subjective or fragmented lenses.

More recently, futurist Jamais Cascio introduced the acronym BANI—Brittle, Anxious, Nonlinear, and Incomprehensible — was introduced to characterize emerging patterns of complexity, instability, and unpredictability in today's socio-technical environments (De Godoy & Ribas Filho, 2021). BANI is not a replacement for VUCA but an evolution: it describes a world where change is not only constant and complex but also fragile, emotionally charged, erratic, and cognitively overwhelming.

In BANI contexts, systems can appear robust but collapse under stress (brittle); individuals and organizations operate under persistent tension (anxious); progress does not follow predictable patterns (nonlinear); and many phenomena defy explanation or even comprehension (incomprehensible).

A clear illustration of this scenario can be found in startup ecosystems focused on artificial intelligence (AI) and machine learning (ML). These ventures operate in high-speed, high-risk environments where market conditions and regulations evolve rapidly. For instance, a company developing facial recognition technology may suddenly face legal and ethical scrutiny following new privacy laws. A recent example is the debate surrounding the use of facial recognition during the 2024 Carnival in Brazil to identify criminal fugitives (Alcântara & Cassiano, 2024).

These companies are often exposed to multiple stressors, including unpredictable funding conditions, overwhelming technical challenges, and societal backlash, all of which contribute to organizational anxiety. Moreover, success or failure in such contexts is typically nonlinear; a single innovation may propel a company to the forefront, while a minor misstep can lead to collapse. The incomprehensibility of these environments also stems from the opacity of AI systems and the ethical dilemmas they raise.

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The shift from VUCA to BANI underscores the need for organizations to move beyond reactive adaptation toward resilient, anticipatory, and learning-oriented capabilities. In such conditions, innovation is no longer optional—it becomes a survival mechanism. For this reason, developing Innovative Agility is essential: organizations must continuously learn, unlearn, and adapt while simultaneously building the governance structures required to support this behavior.

Understanding these environmental frameworks helps organizational leaders interpret challenges and design innovation strategies that are appropriate for today's and tomorrow's turbulence.

The Role of Technology in Innovation

In the contemporary context, technology plays a central role as a catalyst for innovation. It enables the development and implementation of new ideas, products, services, and processes that were previously unthinkable. Emerging technologies such as artificial intelligence (AI), the Internet of Things (IoT), blockchain, big data, and cloud computing have evolved from competitive differentiators to essential pillars for organizational survival.

Technology enables large-scale data collection and analysis, providing strategic insights and accelerating decision-making. More importantly, it facilitates experimentation and iteration—key components of Innovative Agility. When properly aligned with strategic goals, technology supports the creation of environments where innovation can flourish in a structured and sustainable way.

In VUCA and BANI environments, technological adoption is not merely an operational upgrade but a strategic imperative. Organizations that embrace technologies with strategic agility are better positioned to anticipate change, respond faster, and adapt to emerging demands. These organizations treat technology not as an end but as a means to create value, manage uncertainty, and develop new business models.

However, adopting technology alone is not enough. Its strategic impact depends on how it is aligned with organizational goals, managed over time, and integrated into broader governance structures (Weill & Ross, 2004; Luna, Kruchten & Moura, 2015). Digital initiatives may result in fragmented efforts, duplicated investments, or resistance to change without proper alignment and coordination. This highlights the need for an agile governance approach that steers innovation in a way that is coherent with organizational values, responsive to external pressures, and conducive to long-term growth.

In this sense, technology and governance must work together. Effective innovation strategies combine the transformative power of digital tools with organizational structures that support collaboration, learning, and adaptation. This synergy is crucial for building resilience and achieving sustained impact in science and technology ecosystems.

AGILE GOVERNANCE AS AN ENABLER OF INNOVATIVE AGILITY

While agility is often discussed at the team or project level, its full potential is only realized when it permeates the organizational governance system. Agile Governance extends the principles of agility to the mechanisms that guide strategic direction, decision-making, and coordination. This section explores how governance can become agile, providing the structure and flexibility necessary to support continuous innovation.

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From Agile Practice to Agile Governance

Agile approaches are widely adopted in specific domains such as software development and manufacturing, where they promote incremental delivery, continuous feedback, and team autonomy (Rigby, Sutherland, & Takeuchi, 2016). However, their influence often remains limited to the organization's operational or tactical layers. By contrast, Agile Governance proposes applying agility to the very system responsible for steering the organization: its governance system.

This distinction is critical. While agile practices improve localized outcomes within specific functions or projects, Agile Governance seeks to influence the strategic coordination of the entire organization. It is not about enhancing existing governance structures, but about making them more adaptive, responsive, and aligned with fast-changing environments.

To illustrate this difference, Luna et al. (2014) proposed an analogy comparing an organization to a human body. In this metaphor, traditional agile practices operate like muscles and reflexes, generating action within specific limbs or regions. Agile Governance, on the other hand, functions as the nervous system, coordinating perception, decision-making, and response across the whole body. It guides how various parts of the organization adapt and collaborate in a coherent, timely, and sustainable manner.

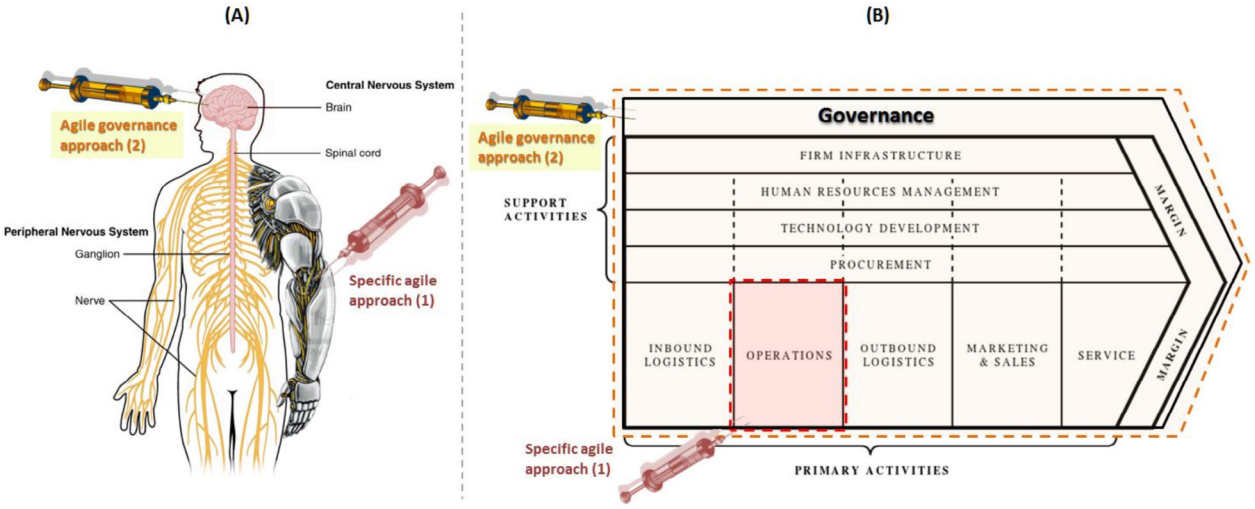

Figure 1. Organizational Anatomy: an analogy.
Source: (Luna et al., 2014).

Rather than viewing governance and agility as contradictory, Agile Governance reframes them as complementary. Governance provides direction, accountability, and alignment; agility provides adaptability, speed, and experimentation. When properly integrated, they create the conditions for Innovative Agility, allowing organizations to evolve continuously while maintaining strategic coherence.

Agile Governance Theory

Agile Governance Theory (AGT) was developed to analyze and describe how teams can build intrinsic dynamic capabilities to perceive and respond to organizational changes, whether driven by internal or external factors (Luna, 2015). AGT contributes to a better understanding of organizational environments by helping balance the need for agile responsiveness with the risk of overly rigid

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management structures that may inhibit perception, responsiveness, innovation, and creativity (Luna, Marinho, & Moura, 2020). It also prepares teams to respond to and even anticipate change in a coordinated and sustainable way, while providing mechanisms to identify and analyze the often-hidden factors and agents that influence agile governance practices within organizations.

AGT defines agile governance as "the capability of an organization to sense, adapt, and respond to changes in its environment in a coordinated and sustainable way, faster than the rate of those changes" (Luna et al., 2016). This formulation shifts the focus from agility as a team-level practice to a strategic organizational capability that integrates perception, coordination, and response across all levels.

To illustrate the practical relevance of AGT, we apply its lens to analyze the concept of Ambidextrous Governance, which is often mistaken for Agile Governance, despite their fundamental differences. According to O'Reilly and Tushman (2004), ambidextrous organizations pursue disruptive innovation while maintaining their core business operations. This model involves separating structures and processes between traditional and emerging units and is typically managed by a senior leadership team (Iborra, Safón, & Dolz, 2020). Vejseli, Rossmann, and Connolly (2022) describe it as a dual-governance approach that alternates between traditional and agile IT governance mechanisms.

Under AGT, however, Agile Governance is not limited to specific units or outcomes. It aims to influence the entire steering system of the organization—perception, coordination, and response across all components. From this perspective, Ambidextrous Governance would be considered a specific agile approach, with limited scope along the value chain.

AGT also argues that agility and governance capabilities should be developed incrementally and iteratively. During this evolution, multiple structures and cultures may coexist, but such redundancy must be transitional in nature. Over time, conflicting cultural logics may hinder rather than support innovation. Therefore, AGT recommends governance mechanisms that are both resilient and compliant, recognizing that compliance is a non-negotiable aspect of regulated environments.

The theory promotes a balanced and reflective integration of agile and lean capabilities, combining adaptability, responsiveness, and resilience (effectiveness) with process efficiency and waste reduction. Some situations may require a predominantly agile posture—even at the cost of future rework to meet time-sensitive demands. In contrast, other contexts may require a leaner approach, emphasizing progressive change and minimizing technical debt.

AGT further conceptualizes Agile Governance as a sociotechnical phenomenon operating within a chaordic spectrum—a dynamic space between chaos and order, originally proposed by Dee Hock (1999, 2005). This space fosters learning, innovation, and transformation, while maintaining coherence and control. The sociotechnical nature of AGT lies in its treatment of people as change agents and its attention to the interplay between social forces, technological systems, and decision-making processes. This interpretation was empirically supported in recent studies (Luna & Marinho, 2023).

Agile Governance is thus more than a methodology or a collection of practices. It suggests a shift in perspective—a new lens for how organizations perceive, adapt to, and respond to change. Embracing this paradigm requires embedding agile principles not only in projects but throughout the governance system and organizational culture. In doing so, organizations foster an environment where meaningful innovation can thrive, even amid volatility, uncertainty, and complexity.

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GOVERNING INNOVATION IN STI ECOSYSTEMS: THE Mi9 FRAMEWORK

Organizations need structured approaches that support agility and innovation in complex environments to move from theory to practice. This section introduces the MAnGve for Innovation Management (Mi9) framework, developed to operationalize Agile Governance Theory (AGT) in science, technology, and innovation (STI) ecosystems. Designed through Design Science Research (DSR), Mi9 integrates agile principles with governance mechanisms to guide innovative artifacts' ideation, design, development, and evaluation.

Framework Overview and Design Foundations

Given that agility represents a distinct way of thinking — requiring supportive tools and tailored management structures — this section introduces the MAnGve for Innovation Management framework, also known as Mi9. Designed to support the governance and management of innovation in science, technology, and innovation (STI) ecosystems, Mi9 provides an agile structure for guiding the ideation, design, development, and evaluation of innovative artifacts, including products, services, methods, and processes.

Mi9 was developed through iterative cycles of design, evaluation, and refinement using a Design Science Research (DSR) approach (Hevner & Chatterjee, 2012). It addresses the lack of practical tools for governing innovation in STI-driven environments, where scientific and technological development plays a vital role in economic growth, job creation, and opportunity democratization (BRASIL, 2018).

Though contexts may vary, Mi9 aims to provide generalizable solutions for a class of problems typical in innovation ecosystems. Its development was informed by a series of studies—including literature reviews, interviews with experts, focus groups, and a pilot case study—conducted in collaboration with the Data Science Brasil innovation network (DSBR), comprising over 29 researchers from Brazilian universities such as UFPE, UFRJ, UFES, UFV, UFOP, and UFOB.

The current version of Mi9, available on its official website (Luna & Lima, 2021), integrates principles from three main sources: the MAnGve model (Luna, 2011), Design Thinking (Brown, 2008), and the DSR methodology. Its core features include:

1. A hybrid and adaptable Innovation Life Cycle Model, combining MAnGve and Design Thinking components, structured by DSR principles.
2. Application of Agile Governance Theory (AGT) to analyze and support decision-making in complex and dynamic contexts.
3. Use of cultural allegories and roles derived from MAnGve to facilitate team alignment and build an appreciative organizational culture.
4. Agile workflow orchestration enables teams to operate in flexible and coordinated cycles, allowing them to work efficiently and effectively.
5. Incorporation of agile and adaptive practices to support leadership and team development.
6. Application of adaptive governance approaches to guide change management throughout the lifecycle.
7. Guidance to help teams identify where to start, what to adapt, and what to prioritize.

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The framework can be understood both as a process model, composed of subprocesses mapped using the BPMN standard, and as a holistic system, represented by an integrated life cycle of four interdependent cycles: Ideation, Design, Development, and Evaluation.

Each cycle is governed by time structures that combine agile iteration logic with metaphors drawn from the MAnGve ecosystem. For example, timebox refers to a fixed time frame dedicated to a specific iteration. "Maré" (tide) represents a full strategic business cycle, while "marola" (ripple) denotes a shorter iteration within a specific activity, such as ideation or evaluation. These concepts mirror the function of sprints in Scrum (Sutherland & Sutherland, 2019), enabling a balance between delivery quality and deadlines.

Mi9 offers a structured yet adaptive path for organizing innovation workflows based on decisions, objectives, activities, and resources. Its main contributions lie in promoting fluidity and agility across team processes through effective Agile Governance practices and a sustained commitment to continuous learning.

Innovation Life Cycle in Mi9

The Mi9 Life Cycle Model is composed of four iterative and incremental cycles: Ideation, Design, Development, and Evaluation (see Figure 2). Each cycle includes specific stages that guide teams from the emergence of an idea to the delivery and validation of innovative solutions.

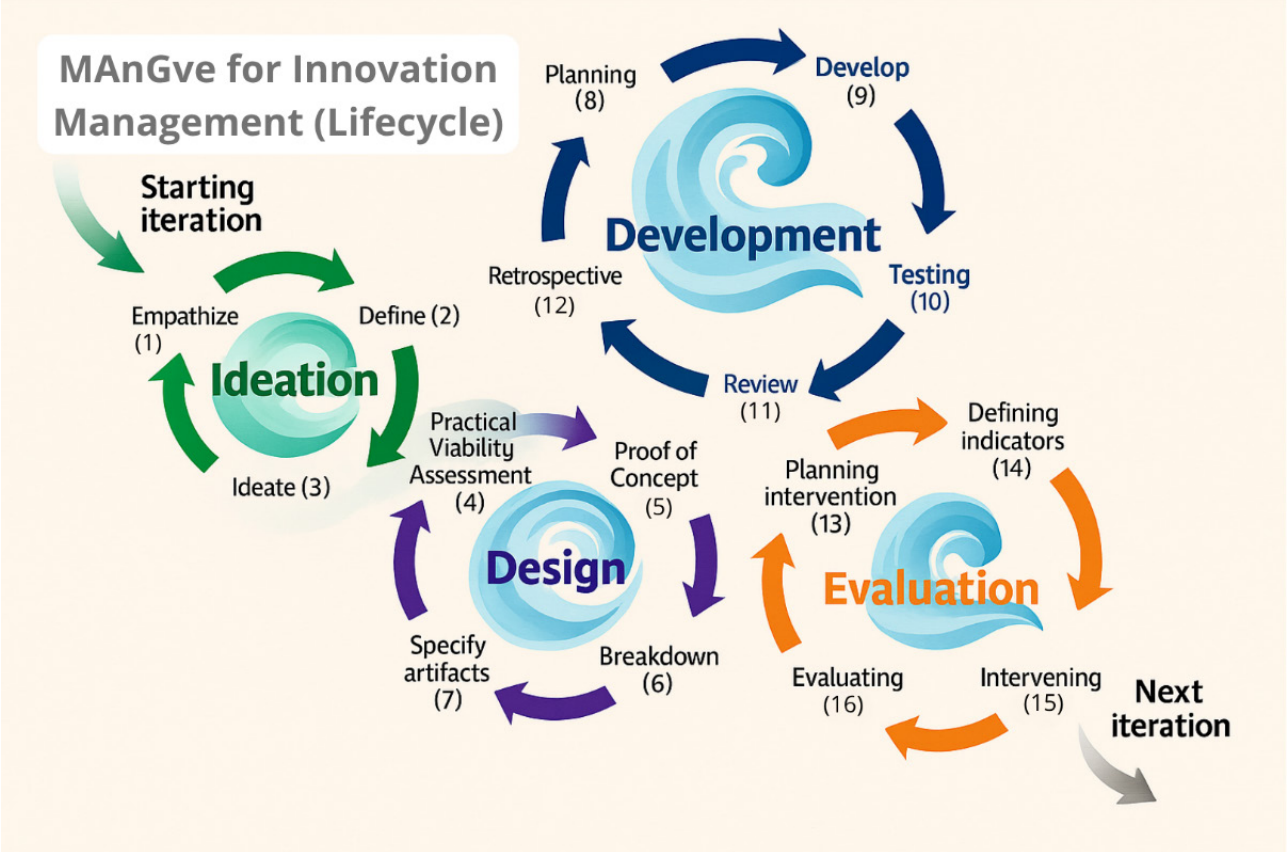

Figure 2. Mi9 Lifecycle Model.

Source: Mi9 Official Website - https://mi9.mangve.org.

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Ideation Cycle

This cycle involves a collaborative exploration and a deep understanding of the challenges and contexts. Through data analysis and structured interaction, teams synthesize insights to propose viable solution paths. It comprises three stages: **(1) Empathize** – Understand the needs, constraints, and pain points of users and stakeholders to address their concerns effectively. (2) **Define** – Frame the core problem or challenge to be addressed. **(3) Ideate** – Generate creative ideas, insights, or initial abstractions that may lead to effective solutions.

Design Cycle

This cycle focuses on assessing and structuring feasible ideas. It includes four stages: **(4) Practical Viability Assessment** – Evaluate the feasibility of each idea in terms of cost, resources, knowledge, time, and risks. **(5) Proof of Concept** – For ideas that require technical validation, early testing is conducted through controlled experiments or prototypes. **(6) Breakdown** – Decompose the solution into smaller components (artifacts), facilitating modular implementation. **(7) Specify Artifacts** – Detail technical requirements, functionalities, interfaces, and development criteria for each artifact.

Development Cycle

This cycle covers the actual implementation of the artifacts and includes five stages: **(8) Planning –** Define the scope of the iteration, organize user stories into a prioritized backlog based on their estimated complexity (SP) and business value (BV). Items with the highest ROI (BV/SP) are prioritized for consideration. Planning occurs at three levels: Product Planning (overall solution); Release Planning (significant delivery aligned with the "maré" cycle); Iteration Planning (short cycle or "marola"). **(9) Develop** – Implement the selected stories by building or configuring solution components according to the specifications. **(10) Testing** – Perform rigorous validation (functionality, performance, security, usability) to ensure quality and compliance. **(11) Review** – Assess progress against goals, validate results with stakeholders, and refine the direction. **(12) Retrospective** – Reflect on what worked, what didn't, and define improvements for future cycles—supporting continuous learning and team growth.

Evaluation Cycle

This cycle verifies whether the developed solution fulfills its intended purpose. It is structured into four stages: **(13) Planning Intervention** – Define objectives, methods, sample, instruments, and resources for evaluating the solution in context. **(14) Defining Indicators** – Establish measurable and relevant indicators aligned with the intervention goals. **(15) Intervening** – Apply the proposed solution in the target context and observe its effects. **(16) Evaluating and Interpreting Results** – Analyze collected data to assess impact, compare outcomes to expected goals, and extract actionable insights.

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Practical Considerations for Implementation

The Mi9 framework was designed to allow its cycles to unfold simultaneously, leveraging the strengths of diverse, multidisciplinary teams. This configuration fosters flexibility and dynamism. For example, in innovation projects, while the design team may be working on ideating and specifying future artifacts, the development team can build previously defined components, and the evaluation team can assess completed solutions. Thus, different Mi9 cycles may run concurrently within the same week, integrated, coordinated, and coherent.

In this setting, intra-team meetings become more focused, while cross-functional alignments gain in objectivity and productivity — leading to significant improvements in project communication. The ability to operate across multiple parallel cycles — including overlapping stages and components — becomes essential for managing dynamic processes in multi-level execution environments. This capacity fosters sharper team focus, greater resilience, and enhanced agility, all while maintaining strategic alignment and governance.

DISCUSSIONS

One promising direction for future research involves empirically evaluating the effectiveness of the Mi9 framework in comparison to more traditional innovation management approaches. Controlled or quasi-experimental studies could investigate whether Mi9's emphasis on agile governance, iterative cycles, and socio-technical alignment leads to superior outcomes in terms of engagement, responsiveness, or solution quality. Such comparative studies would not only validate the framework's practical relevance but also contribute to the broader understanding of how agile-based innovation models perform across diverse organizational settings.

The insights presented in this article reinforce that Innovative Agility is not a static construct, but a dynamic, context-sensitive capability. The Mi9 framework offers a structured yet adaptable path to operationalize agility and governance in STI ecosystems, but its implementation raises important questions for both practitioners and researchers.

One of the key reflections emerging from this study is the challenge of cultural alignment. Embedding agile governance principles across organizations, especially in public or research-driven STI environments, often requires reconciling diverse professional logics, values, and time orientations. While agility demands speed and adaptability, governance structures in science and technology may emphasize rigor, stability, and accountability. Future research should explore how these tensions are navigated in practice and how frameworks like Mi9 mediate between experimentation and institutional constraints.

Another central issue concerns the measurability of agility and innovation outcomes. While Mi9 introduces clear stages and indicators, the complex, nonlinear nature of innovation may resist simplistic performance metrics. Understanding how to evaluate success without compromising creativity or overformalizing innovation governance remains an open challenge.

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In addition, the notion of working in simultaneous cycles—although promising for increasing responsiveness and productivity—also raises coordination and communication risks, particularly in contexts where strategic alignment and governance must be preserved. The demands for cross-functional alignment may vary depending on an organization's maturity, technological complexity, and stakeholder involvement. This contextual variability underscores the need to tailor the framework to each context, positioning Mi9 not as a rigid, prescriptive model, but as a flexible design scaffold—an adaptable foundation to be shaped as needed.

Comparatively, while existing models such as the Stage-Gate process or SAFe (Scaled Agile Framework) offer structured pathways for innovation (Putta, Paasivaara, and Lassenius, 2018), Mi9 proposes a distinct approach by explicitly incorporating socio-technical dynamics and governance reflection, grounded in Agile Governance Theory. This perspective may expand the analytical scope beyond delivery pipelines by foregrounding strategic responsiveness and organizational learning — a proposition that invites further empirical exploration.

Finally, the integration of Design Science Research (DSR) into Mi9's development provides methodological robustness but also introduces limitations regarding generalizability. The framework was initially crafted in the Brazilian STI context, which may differ significantly from other cultural, regulatory, or sectoral environments. Broader empirical testing is needed to validate and evolve Mi9 in diverse ecosystems.

Thus, this discussion supports that Innovative Agility is not only a managerial or technological issue — it is a governance challenge that involves strategic, cultural, and ethical dimensions. It invites continued dialogue on how organizations can responsibly govern innovation, not only reacting to change but actively shaping the future.

FINAL REMARKS

This article explored innovative agility as a critical enabler for fostering innovation in today's organizations. We argued that agility is more than a set of practices — it is a paradigm shift, integrating adaptability, continuous learning, and responsiveness into the core of organizational strategy.

We highlighted the synergy between agility and innovation, showing that sustainable innovation emerges from a mindset that embraces experimentation, engagement, and coordinated adaptation across teams and structures. Agility is what enables not just reaction, but anticipation.

In increasingly complex and turbulent environments, innovative agility is not optional; it is essential for survival and growth. In this context, Agile Governance stands as a foundational paradigm to guide innovation with responsibility, bridging the technical and social dimensions of decision-making.

The Mi9 framework was introduced as a concrete response to these challenges. Its iterative structure embodies a practical and strategic tool to govern and manage innovation within Science, Technology, and Innovation (STI) ecosystems. Mi9 not only supports agile innovation cycles but also reinforces strategic alignment and organizational learning.

To advance the field, we invite practitioners to experiment with agile governance models like Mi9 and share real-world lessons and researchers to investigate their effectiveness across contexts. As the pace of change accelerates, the ability to govern agility becomes a defining factor for responsible innovation.

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Ultimately, embedding innovative agility into organizational culture is key to thriving in the face of complexity. Let us then see agility not merely as a tool, but as a compass — guiding innovation with purpose, speed, and sustainability.

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