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The Silo Effect in the AI Age

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A practical, three-dimensional framework for diagnosing and addressing coordination problems.

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Artificial intelligence is reshaping how organizations coordinate. This shift is not merely about automating tasks, but about altering the logic, cost, and cadence of cross-functional collaboration. As AI technologies become more embedded in business operations, they offer new ways to address one of the most persistent organizational problems: the silo effect. In earlier work published in Harvard Business Review, we examined the origins of silos and what effective solutions must accomplish. Here, we build on that foundation by exploring how specific AI capabilities can be applied deliberately to mitigate different types of silo-related barriers.

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Our perspective is grounded in close work with companies across industries, study of emerging AI capabilities, and ongoing dialogue with leaders navigating coordination challenges. From this vantage point, we introduce a new framework that complements existing insights on silo types with two additional dimensions: the frequency of cross-functional interaction, and the impact those interactions have on organizational

performance. These variables create a four-quadrant grid that helps diagnose coordination needs and guides the selection of AI-based interventions, whether the goal is to eliminate friction, automate routine, or unlock hidden opportunities for integration.

The As-Is Situation

Before we explore how AI can intervene, it's worth examining how organizations have traditionally responded to coordination challenges. In our work, we've found that these responses tend to follow the logic of cost-benefit trade-offs. Structural changes, such as reorganizing teams, adding layers of management, or creating permanent cross-functional roles, can be expensive and slow to implement. But because they often yield high returns in high-frequency, high-impact settings, companies make these investments selectively and strategically. On the other hand, procedural fixes, like SOPs, shared templates, or regular check-ins, are quicker and cheaper, making them more common in lower-stakes settings. While more scalable, they often offer only modest improvements and rarely get to the root of the problem.

These trade-offs become easier to visualize when mapped on a two-by-two grid using the frequency and impact dimensions. We refer to this as the Frequency–Impact Grid (FIG). Each quadrant reflects a different logic for action, as shown in Figure 1. What we call Enduring Structural Approaches (high frequency / high impact) involve sustained investments in roles or teams that span functions, justified by the high returns these coordination efforts deliver. Ad Hoc Structural Approaches (low frequency / high impact) emerge in moments of urgency, such as a crisis, where temporary but intensive cross-functional teaming is needed. Enduring Procedural Approaches (high frequency / low impact) rely on standardized processes or automation to manage recurring, lower-stakes activities efficiently. And Ad Hoc Procedural Approaches (low frequency / low impact), which we refer to as the "neglected quadrant", are informal, reactive, and often left unaddressed because the coordination costs seem to outweigh the benefits.

	High Impact	Low Impact
High Frequency	**Enduring Structural Approach** e.g., Demand Manager role to coordinate recurring, strategic needs across departments.	**Enduring Procedural Approach** e.g., Automated availability checks; routine tasks managed via fixed processes.
Low Frequency	**Ad Hoc Structural Approach** e.g., Skunkworks or temporary cross-functional teams for critical but occasional needs.	**Ad Hoc Procedural Approach** e.g., Manual workarounds, informal coordination — the "Neglected Quadrant."

Figure 1: Frequency-Impact Grid

We have seen all of these approaches in our interactions with industry leaders and operations teams facing persistent coordination challenges. For instance, a demand planning manager role often reflects an enduring structural approach, established to coordinate high-frequency, high-impact decisions across sales, operations, and supply chain. In contrast, a cross-functional task force launched during a product recall or major regulatory event is a classic example of an ad hoc structural approach. It is temporary but vital. Routine IT support requests handled through centralized ticketing systems exemplify enduring procedural approaches, where automation efficiently addresses recurring, low-impact tasks. And when an employee informally reaches across departments to resolve a minor, infrequent issue like a missing invoice or inconsistent formatting, that reflects an ad hoc procedural approach.t Such actions fall into the neglected quadrant.

But each of these approaches has its limitations, both in terms of what they can achieve and what they overlook. Structural solutions, while often effective, can become rigid and costly over time. Procedural fixes, though cheaper, tend to be narrowly scoped, addressing visible symptoms rather than systemic causes. And in the low-impact zones, inefficiencies are often allowed to persist because they seem too minor or too scattered to justify attention. What's needed is not just a new set of tools, but a shift in how organizations frame and act on coordination problems. This is where AI opens up transformative possibilities. AI changes the cost structure, precision, and intelligence with which interventions can be made.

The AI-Driven Situation

AI offers new ways to address silo-related coordination challenges, not by replacing every human function, but by changing the very economics of integration. When applied thoughtfully, AI can help organizations manage siloed interactions with more precision, lower costs, and greater adaptability. It does this by eliminating, augmenting, or enhancing existing coordination approaches. The implications vary by quadrant.

Enduring Structural Approach: These are traditionally addressed through formal roles like demand managers or supply chain coordinators. The primary job of these roles is often to integrate information and align decisions across teams. AI can eliminate the need for these permanent structural roles by performing the same integrative functions, aggregating data, generating forecasts, facilitating decisions, as autonomous agents. The job remains, but the jobholder shifts from a human to an AI-driven system.

Ad Hoc Structural Approach: These scenarios typically involve crisis response or innovation—moments when silos must be bridged quickly. AI can augment temporary teams by serving as a synthetic collaborator. Tools like large language models, decision intelligence systems, or contextual search platforms provide fast access to institutional memory, synthesize inputs, and connect dots across domains. This reduces the number of people required or accelerating the speed at which teams can mobilize.

Enduring Procedural Approach: These are often repetitive tasks such as approvals, updates, or notifications and these are handled by basic workflows. AI can enhance these approaches by transforming routine automation into intelligent assistance. It can identify patterns, anticipate needs, escalate exceptions, and even detect early warning signals. In doing so, AI doesn't just automate, it amplifies the impact of procedural coordination.

Ad Hoc Procedural Approach – "Neglected Quadrant": These tasks have traditionally been ignored because they are too infrequent to standardize and too minor to fix. But AI can activate new forms of intervention here by making micro-coordination nearly free.

Smart nudges, auto-suggestions, and passive monitoring allow AI to detect and resolve inefficiencies before they escalate. Over time, recurring patterns can be formalized into lightweight, AI-enabled routines.

In all four quadrants, AI offers the potential not just to automate but to reframe the problem, shift the intervention, and expand what's feasible. The key is not to deploy AI generically, but to target its use with strategic clarity, just as one would select the right tool for a specific type of cut, stitch, or structure.

Application in Practice: Bridging Silo Types and Grid Dynamics

Organizational silos manifest in three distinct forms: systemic silos driven by misaligned departmental goals, elitist silos characterized by knowledge hoarding due to perceived superiority, and protectionist silos arising from fear-based information withholding to preserve status or security. Integrating the three silo types (systemic, elitist, and protectionist) established in our Harvard Business Review article with the four-quadrant FIG framework generates twelve potential intervention approaches. While a full mapping of all twelve is beyond the scope of this article, we offer three illustrative examples drawn from our experience. Each involves a high-frequency, high-impact silo, one of the most critical and costly forms of cross-functional friction. For each, we describe the silo dynamic, the structural solution often used to manage it, and how AI can offer a more effective alternative.

In a **systemic silo**, the core challenge is misaligned goals, such as those between sales and supply chain, where one prioritizes availability and the other prioritizes efficiency. The typical enduring structural response is to create a demand planning role that synthesizes input from both sides, aligns timelines, and mediates competing interests. AI can eliminate the need for this role by embedding alignment approaches into the system itself. This kind of AI-driven planning platform can ingest data from both functions, simulate trade-offs, and recommend optimal plans that reflect enterprise priorities, removing the need for continuous human arbitration. Systematic silos can occur between different emergency response functions where fire, EMS, and logistics each prioritize different

outcomes under pressure. Systematic silos under pressure can have devastating effects. Traditionally, incident commanders or liaisons help align these objectives during training or real events. AI can now take on that integrative role. **George Mason University** has developed AI-augmented training environments that simulate crisis scenarios, allowing multidisciplinary teams to practice decision-making together. These simulations expose misaligned assumptions, clarify roles, and reinforce shared priorities, reducing the need for ongoing human arbitration and helping teams coordinate more fluidly when it matters most.

In an **elitist silo**, daily collaboration between functions like engineering and operations is impaired not by lack of interaction, but by perceived status differences or knowledge asymmetries. The common structural fix is to establish a program management office (PMO) that manages handoffs, translates terminology, and enforces discipline. AI can remove the need for this layer by democratizing knowledge access. Tools like AI copilots or enterprise knowledge graphs provide shared visibility into both teams' priorities, timelines, and expertise—allowing mutual respect to emerge from shared information rather than forced coordination. For example, **Altair's AI-powered engineering platform**, HyperWorks®, integrates tools like PhysicsAI™ and CoPilot™ to accelerate simulation and design processes. These tools democratize access to advanced simulation capabilities, enabling engineers and operations teams to collaborate more effectively without hierarchical barriers.

In a **protectionist silo**, frequent coordination between groups like finance and marketing may be undermined by fears of exposure or blame. To address this, firms often create governance structures, such as pricing committees, that enforce formalized and cautious decision-making. AI offers an alternative path by providing transparent, role-sensitive decision systems. **KPMG has integrated MindBridge's AI** into its audit processes to enhance risk identification and decision-making. This integration allows for improved alignment between different departments by providing a unified view of financial data. With features like audit trails, access controls, and traceable logic, AI can build trust and reduce the perceived risk of collaboration. —This can make the committee itself unnecessary.

These examples illustrate how understanding both the type of silo and its position in the FIG can inform more precise solutions. The same principles apply across all quadrants. By identifying whether a silo stems from misalignment, elitism, or protectionism, and combining that with frequency and impact insights, leaders can determine not only what the solution should achieve, but how AI can be used to deliver it efficiently, flexibly, and at scale.

Conclusion

Silos are not a singular problem with a one-size-fits-all solution. The root causes behind silo behavior, whether systemic, elitist, or protectionist, demand different objectives from any intervention. In this article, we add two additional dimensions that shape how solutions should be applied: the frequency and impact of cross-functional coordination. Together, these three dimensions offer a more complete and actionable view of the silo effect.

Organizations deploy various structural and procedural approaches to address siloed interactions. But to be truly effective, these actions must first align with the type of silo they are addressing. Then, by layering on an understanding of frequency and impact, and by leveraging AI capabilities accordingly, companies can move from rigid, generic fixes to precisely targeted, adaptive, and high-impact solutions. When all three dimensions are considered, organizations can finally tackle silos with the nuance and specificity the problem deserves. The same principles can be applied across all quadrants: by identifying whether a silo stems from misalignment, elitism, or protectionism, and combining that with frequency and impact insights, leaders can determine not only what the solution should achieve, but how AI can be used to deliver it efficiently, flexibly, and at scale.

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