
Innovation Interruption: Path Dependence and Generational Misalignment in Japan

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Abstract: Japanese incumbent firms face a persistent paradox: employees widely recognize the importance of innovation, yet sustained exploratory behaviour remains rare. This paper conceptualizes innovation interruption, in which exploratory initiatives stall before approval and produce neither learning nor outcomes. Drawing on a survey of R&D employees in a Japanese manufacturer (Company A) and comparison with Company B, the study shows that this gap arises from the interaction of intergenerational motivation misalignment and approval friction. Early-career employees seek experiential learning, mid-career employees face performance and reputational risk, and senior employees are driven by generativity. These dynamics are reinforced by organizational learned helplessness and path-dependent institutional residues. The paper distinguishes direct and indirect imprinting effects across cohorts and proposes targeted interventions—micro-budgets, senior guardianship, re-exploration rotations, and structured external exposure—to restore exploratory momentum.

Keywords: Innovation interruption; Organizational path dependence; Intergenerational motivation misalignment; Career Development; Organizational development.

1 Introduction

In the context of an aging population, a sustained decline in birthrates, and more than two decades of deflationary pressure, Japanese incumbent firms have sought to revitalize growth by pursuing new revenue sources and intensifying innovation efforts. Domestic market maturity constrains traditional expansion, and firms increasingly recognize the need to cultivate organizational adaptability and external knowledge acquisition. Yet international competitiveness rankings reveal a steady erosion of breakthrough innovation capacity among large Japanese firms. Despite extensive structural initiatives to promote innovation, including formal management standards and internal innovation programs, Japanese incumbent firms continue to struggle with sustaining exploratory activity, suggesting that structural reform alone has been insufficient without deeper changes in employee mindset and organizational practice (Hayashida & Takahashi, 2018).

This paper investigates a critical paradox: why employees who acknowledge the necessity of innovation and express strong willingness to contribute nevertheless fail to engage in sustained, outcome-oriented exploratory activities. At Company A, a Japanese manufacturing firm, over 85% of R&D employees recognize innovation's strategic importance and express a desire to contribute, yet this willingness does not translate into exploratory behaviour (Hayashida & Fushimi, 2025). The most frequently cited obstacles are limited resources—budget, time, and tolerance for failure—cumbersome approval processes, and a tendency toward internalism in which employees rely on immediate peers rather than external knowledge.

The paper proceeds as follows. Section 2 reviews related literature and develops the theoretical framework. Section 3 describes the empirical context, including a summary of Company A's three-phase R&D history. Section 4 presents survey findings. Section 5 discusses theoretical contributions and practical interventions. Section 6 concludes this research.

2 Related Work

Prior explanations of innovation stagnation in incumbent firms have converged on three accounts: cultural risk aversion, ambidexterity failures (March, 1991; Tushman & O'Reilly, 1996), and generic bureaucratic rigidity. Each captures a real dimension of the problem, yet each remains partial. Cultural accounts treat risk aversion as a relatively stable disposition, leaving unexplained why the intent-action gap persists even among employees who explicitly express motivation to innovate. Ambidexterity frameworks focus predominantly on structural separation or top-management commitment, without addressing the micro-level processes by which individual exploratory efforts are terminated before producing output. Bureaucratic rigidity arguments similarly operate at the organizational level and do not account for why the gap manifests with different intensity across career stages.

This paper argues that a complete account requires identifying two interconnected mechanisms that existing literature has not jointly theorized. The first is intergenerational motivation misalignment—the systematic divergence in motivational priorities across early-, mid-, and senior-career employees, shaped by differential exposure to historical

episodes of exploration suppression. The second is organizational learned helplessness, arising from historical managerial decisions that path-dependently restricted exploratory opportunity (Sydow et al., 2009), producing a cumulative expectation of futility that suppresses initiation even when individual motivation and capability remain intact. Together, these mechanisms generate what we term *innovation interruption*—a dynamic in which exploratory initiatives are repeatedly initiated but consistently stalled before generating usable output—which is developed in the following subsections.

2.1 Organizational Ambidexterity and Innovation Interruption

A central concern in innovation management research is the tension between exploration and exploitation (March, 1991). Ambidextrous organizations seek to sustain both simultaneously, either through structural separation or contextual integration (Tushman & O'Reilly, 1996). Prior research has documented how exploitation pressures crowd out exploration over time, particularly in mature firms where resource allocation routines favour short-term performance. However, the existing ambidexterity literature predominantly frames the problem as one of structural design or top-management commitment. We introduce the concept of *innovation interruption* to address this gap. Innovation interruption refers to a process in which employees repeatedly engage in idea exploration, preliminary investigation, or proposal consideration, yet these efforts are systematically terminated—often at or before formal approval—before producing learning or tangible output. It differs from organizational inertia, where innovation is not attempted, and from bureaucratic delay, where approved projects eventually proceed. In innovation interruption, employees actively initiate exploration, but the authorization pathway closes the opportunity window before output is produced. The mechanism is self-reinforcing. Each interrupted initiative generates organizational memory: narratives of 'what fails to get approved' circulate as practical guidance delimiting sanctioned action. Over time, this narrative accumulation narrows the perceived opportunity space and suppresses future initiation, producing collective learned helplessness—employees retain capability and stated motivation but have internalized the expectation of futility, inhibiting action even before any engagement with the approval process (Pak et al., 2023). Survey data from Company A confirm the pattern: fewer than 11% of respondents can identify a colleague whose exploratory project was recognized and rewarded, and approximately 40% are unaware of any positive precedent (Hayashida & Fushimi, 2025). The absence of visible success narratives suppresses new attempts proactively, prior to any individual risk calculation.

2.2 Intergenerational Motivation Misalignment

Research on career development and lifespan motivation shows that motivational priorities shift systematically across career stages. Early-career employees prioritize experiential learning and external exposure, mid-career employees face heightened performance and reputational constraints, and senior employees tend to be motivated by generativity—contributing through mentoring, project sponsorship, and resource access (Erikson, 1980; Pak et al., 2023). While these orientations are not inherently incompatible, organizational structures rarely integrate them effectively, causing career-stage motivations to operate in parallel rather than reinforcing one another.

Career shocks—unexpected events that durably redirect career trajectories—can anchor cohort-level motivational imprints that persist beyond the original episode (Akkermans et al., 2018). We distinguish between two imprinting channels. Direct

imprinting affects cohorts whose formative years coincided with organizational exploration suppression, anchoring expectations around development-focused work and reinforcing risk-hedging behavior. At Company A, a statistically significant spike in career-recovery motivation appears among employees aged 40–44, consistent with attempts to recapture opportunities foreclosed during early career stages (Hayashida & Fushimi, 2025). Indirect imprinting affects younger entrants who did not experience suppression firsthand but absorbed its legacy through inherited approval routines, incrementalist narratives, and tacit norms limiting boundary-spanning behavior. These institutional residues shape opportunity structures even without direct exposure. Importantly, the capacity to engage in exploration depends on prior investment in related knowledge and external exposure (Cohen & Levinthal, 1990). Entry environments that systematically restrict such exposure therefore erode the absorptive capacity required for future innovation. Mid-career conservatism, in this context, is not an inherent resistance to change but a historically contingent response to structural conditions under which risk avoidance was rational. Recognizing this contingency shifts the intervention logic: rather than targeting attitudes, organizations must modify the structural and procedural conditions that originally made risk-hedging the dominant strategy.

2.3 Approval Friction and Procedural Constraints

Approval friction refers to the cumulative procedural cost—time, documentation effort, social exposure, and perceived career risk—incurred when seeking authorization for exploratory activities. Its principal effect is not to slow projects but to transform the decision environment: standard approval processes require applicants to document expected value before work begins, a requirement structurally mismatched with exploration, where benefits are future and uncertain while risks are present and proximate (cf. March, 1991). The result is a systematic bias against approval even when informal consensus favours attempting a project.

Survey findings confirm that approval process complexity is the most frequently cited innovation barrier across all three career cohorts, with no statistically significant inter-cohort difference (Hayashida & Fushimi, 2025). This uniformity is theoretically significant: it identifies approval friction as a systemic structural constraint rather than a cohort-specific one. The barrier is shared; the cost it imposes is differentially burdensome. While approval friction operates uniformly across cohorts, its career impact differs: early-career employees face disproportionate reputational risk due to limited track records, whereas mid-career employees confront a compound burden of reputational exposure and opportunity cost relative to development-driven performance metrics. Both interactions converge on a shared reluctance to initiate.

Approval friction also disrupts temporal coordination. Exploratory opportunities are time-sensitive; multi-stage authorization routinely causes opportunity windows to close before approval is obtained. Employees who have experienced this pattern update their expected probability of success accordingly, raising the initiation threshold. Repeated over many cycles, this feeds the collective learned helplessness described in Section 2.1: even when motivation and capability remain intact, the expectation of futility suppresses initiation before any formal process is engaged. Research on psychological safety establishes that the belief that well-intentioned attempts will not result in punishment is necessary for learning behaviour in organizational teams (Edmondson, 1999). Where structural

conditions do not provide this safety, person-embodied substitutes may emerge. The most effective observed response to innovation interruption at Company A is not formal relaxation of approval requirements but the emergence of senior employees in informal guardianship roles. Guardians absorb reputational risk on behalf of exploratory teams, pre-empt objections by reframing exploratory work as learning investments rather than revenue bets, and create protective slack that buffers early experiments from premature scrutiny. Guardianship effectiveness does not depend on formal approval authority and therefore does not contradict strong approval friction. Guardians function through informal shielding: they leverage accumulated social capital to lower perceived downside at the team level, internalize gatekeeping without altering official sign-off rules, and enable small bets to proceed within existing procedures. This mechanism explains a seeming empirical contradiction: strong approval friction coexists with pockets of active exploration wherever senior sponsorship is present. Guardianship is, however, currently contingent on personal network formation rather than institutional design. Where individual champions exit or disengage, the protective capacity disappears. Institutionalizing guardianship—through designated roles, protected time, and formal linkage to authorization processes—would scale and sustain a mechanism whose effectiveness is demonstrated but whose current occurrence is fragile.

3. Research Method

Company A is a large Japanese technology-intensive manufacturer with a substantial R&D division and a history of alternating emphasis between exploration and development. Figure 1 summarizes the three phases of its R&D investment trajectory that provide the historical context for the findings.

<p style="text-align: center;">Phase 1 Exploration Golden Age ~2007 and before</p> <p>Free theme selection; failure tolerated; exploratory identity formation</p>	<p style="text-align: center;">Phase 2 Exploration Suppression Era 2008 – 2015</p> <p>Short-term development mandates; reduced basic research; tight approval criteria</p>	<p style="text-align: center;">Phase 3 Revival Era 2016 – present</p> <p>Renewed commitment to innovation; institutional residues of Phase 2 persist</p>
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Figure 1. Three phases of R&D investment at Company A. Phase 2 constitutes the exploration suppression era whose institutional residues are the focus of this study.

Company B, a peer firm in the same industry, maintained or increased R&D investment throughout the 2008–2015 period, actively promoted external collaboration, and established dedicated innovation spaces. The contrast serves as a theoretical reference point illustrating how divergent historical investment trajectories can shape present-day innovation dynamics. The differences in current innovativeness between Company A and Company B can be plausibly linked to divergent investment choices during the suppression era rather than contemporaneous firm characteristics (Ikeuchi, 2022). The primary data source is a structured survey of R&D employees at Company A, segmented into three cohorts: employees aged 34 and below (early-career), 35–49 (mid-career), and 50 and above (senior). The instrument measured stated willingness to engage in innovation, actual frequency of exploratory behaviours over the preceding twelve months, perceived barriers, motivational priorities, and organizational support preferences. Statistical analysis employed chi-square tests of independence with

false discovery rate (FDR) correction for multiple comparisons across items within the same question battery; pairwise cohort comparisons used the Holm correction. Effect sizes are reported as Cramér's V for $r \times c$ tables and ϕ for 2×2 tables. Archival data on R&D investment trajectories were collected for both companies to provide longitudinal context.

4. Results and Findings

4.1 The Intention–Behaviour Gap

Innovation's importance to corporate growth is recognized by 98% of respondents across all cohorts. The proportion expressing willingness to personally engage in new business or product development activities is 85.2%, again without significant cohort differences (Hayashida & Fushimi, 2025). At the level of stated orientation, the organization is uniformly committed. Yet actual exploratory behaviours—external scouting, structured experimentation, cross-boundary collaboration—are rare across all cohorts. This uniform gap between high intent and low action is the defining feature of the innovation interruption dynamic. That it reflects structural rather than motivational failure is supported by the finding, detailed in Section 4.3, that perceived barriers are cohort-invariant (Table 2): employees at every career stage face the same walls, not different personal dispositions. Despite shared barriers, motivational profiles differ systematically across career stages in ways that confirm the imprinting hypothesis. Table 1 presents innovation motivation by cohort.

Motivation Item	≤34 (%)	35–49 (%)	≥50 (%)	p	q (FDR)
Contribute to company growth	37.4	57.3	64.4	7.6×10^{-4}	0.011
Acquire new skills and experiences	60.0	56.3	35.6	0.007	0.079
Intellectual challenge / stimulation	50.5	55.3	45.8	0.492	1.00
Contribute to society	23.5	53.4	47.5	1.5×10^{-5}	<0.001
Career advancement	40.9	35.9	18.6	0.013	0.112
Leverage own expertise	42.6	49.5	44.1	0.577	1.00
Recognition and reward	25.2	22.3	16.9	0.466	1.00

Table 1. Innovation motivation by cohort (% selecting each item as a primary motive). Significance (Sig.) indicates $q < 0.05$ after FDR correction. Source: Hayashida & Fushimi (2025).

Among early-career employees, 60.0% select 'acquiring new skills and experiences' as a primary innovation motive—the highest share of any cohort—and this group shows the strongest stated preference for external exposure. However, actual external engagement is low: institutional barriers sever the path from preference to sanctioned behaviour. The low rate of external scouting reflects not absent orientation but absent legitimization, a pattern consistent with constrained absorptive capacity development (Cohen & Levinthal, 1990).

Among mid-career employees, a notable statistically significant spike is observed in table 1. A parallel spike appears for 'acquiring new skills.' This pattern is consistent with a career-recovery motive following the career shock of the 2008–2015 suppression

(Akkermans et al., 2018): employees who experienced exploration foreclosure during formative years show elevated desire to recapture those development opportunities.

Senior employees show the strongest social-contribution motivation: 47.5% of those aged 50 and above selected this motive, significantly higher than early-career employees (23.5%; $q < 0.001$ after FDR correction). This generative orientation (Erikson, 1980) is genuine but underutilized. Where informal guardianship relationships form through personal networks, they demonstrably accelerate exploratory activity among junior colleagues; the problem is that such relationships are not institutionally designed or reliably reproduced.

4.3 Shared Barriers and Organizational Internalism

As shown in Table 2, approval process complexity is the most frequently cited innovation barrier across all three career cohorts—reported by 43.0% of early-career, 38.7% of mid-career, and 36.2% of senior employees. The absence of any statistically significant inter-cohort difference is theoretically significant in itself: it confirms that approval friction operates as a structural constraint on the organization as a whole, not as a disposition particular to any career stage, consistent with the argument developed in Section 2.3.

Barrier Item	≤34 (%)	35–49 (%)	≥50 (%)	p	q (FDR)
Proposals are not welcomed by the organization	7.4	8.5	9.1	0.923	1.00
Lack of colleague cooperation or anticipated pushback	13.0	13.4	13.8	0.990	1.00
Risk of evaluation loss or accountability if failure	4.4	7.5	10.8	0.274	1.00
Approval processes are complex and time-consuming	43.0	38.7	36.2	0.649	1.00
Too busy with existing work to pursue new activities	32.2	32.0	30.2	0.963	1.00

Table 2. Perceived barriers to innovation engagement by cohort (% selecting each item). No statistically significant inter-cohort differences were observed on any item. Source: Hayashida & Fushimi (2025).

Time scarcity due to development workload is the second most common barrier at approximately 32% across cohorts. Together, these two findings indicate that the barriers employees face are cohort-invariant—every career stage confronts the same walls, not different personal dispositions. This pattern is consistent with the claim in Section 2.3 that approval friction converts motivational differences into a shared reluctance to initiate regardless of where in one's career that reluctance is felt.

The success-narrative data reinforce the learned helplessness mechanism theorized in Section 2.1. Fewer than 11% of respondents can identify a colleague whose exploratory project was recognized and rewarded; approximately 40% are unaware of any positive precedent. This absence of visible success cases is consistent with the learned helplessness mechanism introduced in Section 2.1.

Support Item	≤34 (%)	35–49 (%)	≥50 (%)	p
Dedicated time for innovation activities	55.6	60.2	62.7	0.628
Fair evaluation and reward for outcomes	49.6	51.4	54.2	0.844
Culture encouraging challenge and tolerating failure	55.6	60.2	62.7	0.628
Adequate R&D budget for activities	64.3	69.9	66.1	0.675
Opportunities for cross-functional collaboration	40.0	47.6	47.5	0.460

Table 3. Organizational support preferences by cohort (% selecting each item). No statistically significant inter-cohort differences were observed. Source: Hayashida & Fushimi (2025).

Table 3 presents organizational support preferences. Adequate R&D budget (cited by 64–70%), dedicated time (56–63%), and a failure-tolerant culture (56–63%) are the top three priorities across all career stages, again with no significant cohort differences—a shared diagnosis of resource and cultural deficit that mirrors the barrier structure above.

First Response to Work Challenge	≤34 (%)	35–49 (%)	≥50 (%)	p
Research independently and thoroughly	29.1	31.4	30.2	0.931
Brainstorm with team members	10.9	13.4	13.8	0.803
Consult direct supervisor	7.7	8.5	9.1	0.951
Consult knowledgeable internal colleague	43.2	38.7	36.2	0.630
Reference external experts, literature, or seminars	5.5	5.0	6.0	0.958
Verify feasibility independently before disclosing	3.6	3.1	4.7	0.870

Table 4. First response to a difficult work challenge by cohort (% selecting each item). External referencing (highlighted row) is uniformly low at 5–6% across all cohorts. Source: Hayashida & Fushimi (2025).

With described in Table 4, When facing a difficult work problem, approximately 38–43% of employees across all cohorts consult an internal colleague first; only 5–6% reference external experts, literature, or professional networks. This organizational internalism is uniformly low across career stages and reflects not an absence of external orientation but an institutional adaptation: employees have not been equipped with the prior exposure necessary to develop absorptive capacity (Cohen & Levinthal, 1990), a legacy of the suppression-period entry conditions identified in Section 2.2. Positive outcome narratives are correspondingly absent. Fewer than 11% of respondents can identify a colleague whose innovation project succeeded and was recognized and rewarded; approximately 40% report being unaware of any positive precedent. This absence of success models is cohort-invariant, confirming the narrative accumulation mechanism outlined in Section 2.1: organizational memory is populated predominantly

with cases of stagnation or under-recognition, which sustains the futility expectations that underpin collective learned helplessness.

5. Discussion

This study does not directly measure formal initiation counts of innovation projects. Instead, innovation interruption is captured indirectly through self-reported experiences, perceived barriers, and the accumulation of organizational narratives regarding failed or prematurely terminated exploratory efforts. While this approach does not allow precise estimation of initiation-to-approval conversion rates, it is appropriate for examining interruption as a lived organizational process shaping expectations, motivation, and behavior.

5.1 Theoretical Contributions

This paper makes three theoretical contributions. First, it introduces and conceptualizes innovation interruption as a mechanism distinct from organizational inertia and bureaucratic delay, capturing situations in which motivated employees repeatedly initiate exploration that fails to translate into outcomes. This perspective shifts the analytic and intervention focus from portfolio rebalancing to unblocking the translation from intent to action. Second, the paper extends organizational imprinting analysis to career-stage motivational dynamics by distinguishing between direct and indirect imprinting, explaining how the effects of a historical exploration suppression episode persist across cohort boundaries through path-dependent approval norms and narrative frames (Sydow et al., 2009). This demonstrates why suppression effects cannot be resolved simply through cohort replacement. Third, the paper reframes mid-career conservatism as a structurally contingent response rather than an inherent resistance to exploration. The observed career-recovery spike among the 40–44 cohort, consistent with career shock theory (Akkermans et al., 2018), indicates that these employees respond rationally to an approval architecture misaligned with revised strategic priorities. This reframing links historical investment patterns to current innovation capacity (Ikeuchi, 2022; Hayashida & Takahashi, 2018) and integrates innovation management with career-stage and generational analysis (Pak et al., 2023; Erikson, 1980).

5.2 Practical Interventions

The framework implies four targeted interventions, each addressing a specific mechanism within the innovation interruption cycle (Figure 2).

Micro-budgets without pre-approval allocate small discretionary budgets to individual researchers—on the order of ¥100,000 annually—without standard authorization requirements. By enabling quick exploratory experiments before formal scrutiny is applied, micro-budgets generate the positive outcome narratives whose absence currently sustains learned helplessness and rebuild the organizational memory of what can be accomplished.

Mid-career re-exploration rotations assign mid-career employees—particularly those in the directly imprinted 40–44 cohort—to exploratory projects for bounded periods of three to six months, with explicit protection from standard performance measurement. These rotations provide a legitimized pathway for career recovery and skill re-acquisition without reputational penalty, converting open-ended career risk into a bounded, defined experiment consistent with the career shock recovery logic (Akkermans et al., 2018).

Formalized senior guardianship roles institutionalize the informal protective sponsorship that currently appears only where personal networks permit. Formal

designation—through title, protected time, and explicit linkage to authorization processes—scales and sustains this mechanism by giving seniors a structurally supported channel for their generative motivation (Erikson, 1980).

Structured external exposure programs create legitimized, time-allocated pathways for early-career employees to engage in boundary-spanning activities: secondments to startups or partners, participation in cross-industry study sessions and networking events, and direct customer engagements formally recognized as official work responsibilities. These programs address the institutional barrier that severs external orientation from sanctioned behaviour and directly build the absorptive capacity that future exploration will require (Cohen & Levinthal, 1990).

Collectively, these measures represent a strategic response to repair learned helplessness and generational misalignment—not merely operational adjustments. They do not require dismantling existing approval architectures; they create protected spaces and relational scaffolding within which exploratory activity can proceed despite structural constraints. By activating latent willingness across all three career-stage motivational profiles, they convert intent into sustained exploratory action.

6. Conclusion

This paper argues that innovation stagnation in Japanese incumbent firms is best understood as an innovation interruption dynamic, arising from the interaction of historically shaped intergenerational motivation misalignment and approval friction that converts uncertainty into systematic early termination of exploration.

Path-dependent institutional residues (Sydow et al., 2009) sustain these conditions well after the environmental pressures that created them have passed, producing organizational learned helplessness that suppresses exploratory initiation even when motivation is high and capability is present.

Three theoretical contributions follow. The innovation interruption construct provides a more granular account of innovation failure than inertia or ambidexterity frameworks. The distinction between direct and indirect imprinting—anchored in career shock theory (Akkermans et al., 2018) and path dependence—explains why suppression effects persist across cohort boundaries. And the reframing of mid-career conservatism as structurally contingent shifts the intervention logic from attitudinal change to structural reform. The empirical evidence from Company A, corroborated by contrast with Company B's divergent trajectory, provides detailed support for each element of the framework.

For Japanese incumbents, the measures proposed here—targeted at each node of the innovation interruption cycle—are strategic prerequisites, not operational adjustments. Implementing them converts the latent willingness that already exists throughout these organizations into sustained exploratory action, enabling firms to transform intent into tangible innovation outcomes and regain competitiveness in a rapidly evolving global landscape.

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