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The Accumulation of Digital Transformation Debt through Deferred Process Reconciliation, Proliferating Workarounds, and Unresolved Conflicts between Organizational Systems

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Abstract

Digital transformation often proceeds while organizations continue operating processes, routines, and information systems that were designed under earlier organizational arrangements. Temporary accommodations can preserve continuity during transformation, yet their longer-term consequences depend on whether unresolved process relationships are subsequently reconciled or reproduced through new work practices and system dependencies. This conceptual article develops a path-dependence account of digital transformation debt, defined as the accumulation of unresolved organizational obligations whose continued accommodation progressively affects the feasibility and value of later transformation options. The argument distinguishes digital transformation debt from technical debt, ordinary legacy complexity, implementation difficulty, and temporary workaround use. It theorizes a trajectory in which deferred process reconciliation can stimulate workaround proliferation, cross-system incompatibility, and reinforcing dependencies, while also recognizing alternative trajectories in which workarounds reveal design requirements and enable correction. The contribution is therefore conditional rather than deterministic: unresolved transformation obligations become path-dependent debt only when repeated accommodation changes subsequent organizational choices and makes reversal increasingly dependent on coordinated changes elsewhere. This perspective connects transformation processes occurring at different organizational levels while preserving critical junctures at which reconciliation, redesign, selective retention, or path redirection can prevent compounding.

Keywords Path dependence, Digital transformation debt, Process reconciliation, Organizational workarounds, Legacy systems, Cross-system conflict

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Introduction

Digital transformation increasingly concerns changes in the organizing logic of the firm rather than the installation of isolated digital technologies. Recent conceptual work emphasizes the primacy of digital resources and architectures in differentiating digital transformation from less extensive forms of organizational IT change [1]. Longitudinal research similarly separates digital transformation, in which digital technologies participate in redefining organizational identity and value propositions, from IT-enabled organizational transformation that principally supports or enhances an existing organizational configuration [2]. Such distinctions matter because an expansive use of the term obscures what is actually

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transformed. Reviews of 134 published definitions demonstrate substantial conceptual stretching around digital transformation and the continuing need to distinguish it from neighboring constructs [3]. A broader literature synthesis likewise describes transformation as a process in which digital disruption triggers strategic responses while organizations simultaneously manage structural change and organizational barriers [4].

The resulting transformation problem is inherently temporal. A systematic review of 279 studies characterizes digital transformation as continuous organizational adaptation embedded within wider digital-business ecosystems rather than as a single implementation episode [5]. More recent problematization research argues that several established assumptions in the field constrain how transformation phenomena are framed and what questions are investigated [6]. Process research exposes a related limitation. A critical review of 48 empirical studies identifies a network of interrelated transformation processes spanning core transformation, strategy and governance, and operations, while finding that theorization of their interaction and temporality remains fragmented [7]. Digital ecosystems add another layer because transformation can depend on organizational orientation, cooperation, and orchestration beyond the focal firm's formal boundaries [8].

These observations create a specific theoretical puzzle. An organization may introduce new platforms, workflows, interfaces, governance arrangements, and customer propositions without immediately reconciling all processes and systems inherited from earlier arrangements. Operational continuity can instead be achieved by carrying discrepancies forward. Staff may translate between systems manually, maintain parallel records, preserve old routines inside new applications, or create local solutions around mismatched processes. None of these practices necessarily indicates transformation failure. The unresolved question is what happens when successive accommodations alter the conditions under which later choices are made.

This article uses path-dependence and trajectory reasoning to address that question. It proposes digital transformation debt as an organization-level construct describing unresolved transformation obligations that become consequential because their repeated accommodation changes subsequent option value. The claim is intentionally narrower than the proposition that legacy systems, temporary workarounds, or technological complexity constitute debt by themselves. Path dependence requires a mechanism through which prior choices become self-reinforcing. Accordingly, the article asks how deferred process reconciliation, proliferating workarounds, and cross-system conflict can become connected over time, when those connections restrict later transformation alternatives, and under what conditions organizations instead reconcile, redirect, or abandon an emerging trajectory.

From Technical Debt to Digital Transformation Debt

Technical debt provides a useful conceptual starting point because it makes the temporal consequences of short-run accommodation visible. Research on digital transformation and legacy information systems shows that technical debt cannot always be treated as a purely engineering matter: accumulated legacy obligations can influence transformation strategy, and rapid wholesale replacement may be less viable than gradual remediation [9]. Longitudinal evidence also demonstrates that technical debt can generate organizational consequences beyond immediate software maintenance. In accounting information systems, design and implementation shortcuts have been associated with subsequent maintenance obligations and reduced firm-level performance as systems age [10]. Contemporary AI-enabled systems likewise contain code and architectural debt that require deliberate management across the system lifecycle [11].

Digital transformation debt operates at a different analytical level. Technical debt originates primarily in technological design, development, or implementation choices. Transformation can leave unresolved relationships among technologies, processes, routines, roles, data definitions, and decision rights even when individual technical components remain serviceable. Legacy practices are particularly important because replacing a system does not automatically eliminate the routines formed around it. Comparative research on information-system discontinuance shows that legacy habits can inhibit migration, provide bridges toward a replacement system, or even motivate abandonment of established practices depending on socio-technical conditions [12]. Persistence is therefore neither uniform nor inherently dysfunctional.

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The same distinction applies to technological coexistence. Enterprise digitalization may require new infrastructures to interoperate with legacy platforms, creating continuing translation and integration requirements across generations of technology [13]. Such coexistence can be deliberately designed and economically sensible. Consequently, neither the presence of a legacy system nor the cost of interoperability establishes digital transformation debt.

Here, digital transformation debt is defined as the stock of unresolved process and system obligations carried across transformation episodes whose continued accommodation affects the feasibility, coordination requirements, or organizational value of later transformation choices. Three conditions follow from this definition. First, an unresolved obligation must survive beyond the transitional situation that initially justified it. Second, the organization must continue accommodating that obligation rather than eliminating, formally redesigning, or deliberately institutionalizing it. Third, the accommodation must become consequential for subsequent choices. The third condition is essential: accumulated inconvenience without a change in later option value is legacy burden, not path-dependent transformation debt.

This boundary shifts attention away from counting old technologies and toward examining relationships among successive transformation decisions. A temporary manual bridge between systems may be inexpensive and reversible. The same bridge becomes theoretically different when new workflows, roles, reporting routines, or applications begin relying on it. Digital transformation debt therefore concerns the trajectory of unresolved obligations and the dependencies that form around them, not the age or apparent technical modernity of particular systems.

Deferred Process Reconciliation

Digital transformation frequently changes the assumptions on which processes are organized. Ethnographic research on business process management shows that transformation challenges established logics of process modelling, infrastructural alignment, and procedural agency [14]. When old and new logics coexist, organizations face a reconciliation task: differences in sequence, responsibility, information requirements, exception handling, or system representation must eventually be resolved if the transformed process is to operate as an integrated organizational arrangement.

Immediate reconciliation is not always desirable. Transformation may be staged, business continuity may constrain redesign, requirements may remain uncertain, and local units may need temporary discretion. A workaround can therefore function as an exploratory response. Research on digital desire paths demonstrates that observed workaround behavior can reveal unmet user requirements and become useful input into emergent information-system design [15]. Under this trajectory, temporary deviation contributes to learning. The organization observes the mismatch, interprets the behavior, and modifies the formal process or system.

A different trajectory arises when the local accommodation reproduces the mismatch. Evidence from electronic health-record use demonstrates that work-system–technology misfits and workarounds can become mutually related. Although many workarounds remain beneficial or harmless, some responses aggravated existing misfits through recurring individual or collective practices [16]. This possibility provides a mechanism for distinguishing deferred reconciliation from ordinary phased transformation. Deferred reconciliation occurs when an organization preserves operational continuity without resolving an identified process inconsistency and then allows subsequent activity to depend on that unresolved arrangement.

Deferral still does not imply inevitable debt. Recurrent workarounds can provide diagnostic information about underlying process problems. A problem-focused process-improvement approach can deliberately use recurring deviations to identify misalignment between formal process design and operational goals [17]. Resource conditions also affect why employees work around systems. Research in critical-care information systems shows how cognitive and organizational resource pressures can generate recursive workaround behavior, linking individual coping with deteriorating collective conditions

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[18]. Removing a workaround without addressing the condition that produced it may therefore preserve the underlying reconciliation problem.

The critical distinction is whether continued accommodation preserves or reduces future organizational choice. A temporary bridge remains compatible with trajectory redirection when its purpose is explicit, its dependencies are visible, and its underlying process discrepancy remains open to redesign. The same bridge can move toward debt formation when repeated reliance creates additional routines or systems that assume its continued existence.

The analytical difference between temporary accommodation and debt-producing deferral therefore lies in what the accommodation leaves behind for subsequent transformation decisions, as distinguished in **Table 1.**

Table 1. Reconciliation states through which temporary process accommodation can diverge into learning, continued deferral, or dependency

Reconciliation state	Immediate continuity device	Residual reconciliation obligation	Effect on later option value	Likely next trajectory
Explicit temporary bridge	Bounded manual or system-mediated translation	Known discrepancy remains assigned for resolution	Alternatives remain largely open because the bridge is intentionally reversible	Reconciliation, replacement, or formal redesign
Diagnostic workaround	Users deviate from prescribed process to accomplish legitimate work	Formal process or system does not yet represent operational need	Option value may increase if the deviation reveals requirements that were previously hidden	Learning-driven redesign
Repeated compensatory routine	The same local deviation becomes the normal means of overcoming a mismatch	Original discrepancy persists while dependence on the workaround grows	Later redesign must alter both the original mismatch and the routine developed around it	Continued deferral or corrective intervention
Hybrid process dependency	Legacy and transformed practices are combined into a stable operating arrangement	Multiple process assumptions remain simultaneously active	Removing either side requires coordinated change in connected tasks, roles, or systems	Reinforcing persistence unless deliberately reconciled
Unowned reconciliation obligation	Operational units maintain continuity without a clear enterprise owner for the unresolved relationship	Responsibility for resolution remains dispersed or ambiguous	The feasible correction set narrows as subsequent changes incorporate the unresolved arrangement	Workaround proliferation and cross-system coupling
Reconciled redesign	Temporary accommodation is replaced, formalized, or intentionally retained after redesign	No material unresolved obligation remains from the original mismatch	Future alternatives are not conditioned on an unmanaged transitional dependency	Path interruption or redirection

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Note: The states are an original theoretical synthesis developed in this article. They are not maturity levels and should not be interpreted as an inevitable sequence. A workaround may move directly toward reconciliation, remain a legitimate operating practice, or become part of a reinforcing trajectory depending on subsequent organizational choices.

The theoretical transition occurs when local continuity ceases to be only a temporary bridge and begins to reproduce the organizational conditions that make later reconciliation more dependent on prior accommodations, as represented in **Figure 1.**

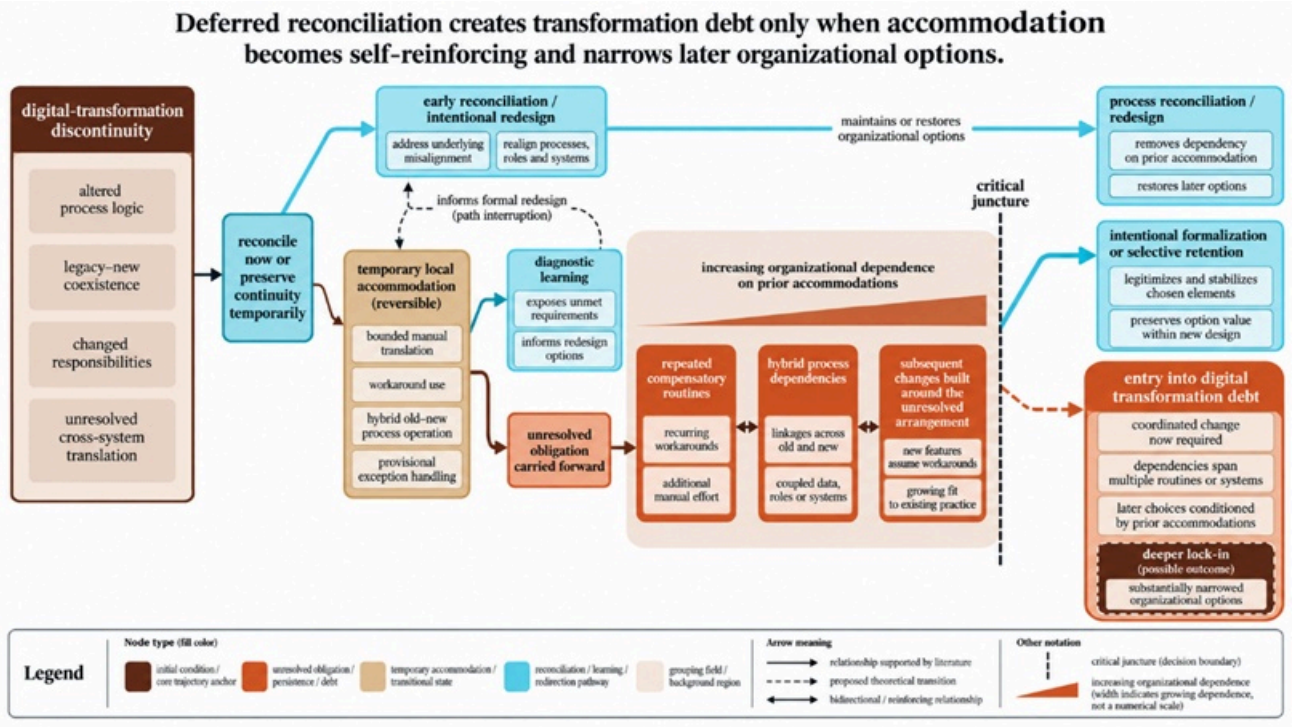

Figure 1. Deferred reconciliation creates transformation debt only when accommodation becomes self-reinforcing and narrows later organizational options

Workaround Proliferation

Deferred reconciliation becomes more consequential when accommodations cease to be isolated responses and begin to structure ordinary work. Evidence from organizations using blockchain in food supply chains identifies several distinct forms of workaround adjustment, including data, procedural, parallel-system, role, and strategic-design adjustments [19]. The significance of this finding for the present argument is not that these practices are necessarily dysfunctional. It is that an unresolved mismatch can be accommodated through several organizational dimensions at once. A process originally bridged through one local deviation may subsequently be supported by parallel records, revised informal responsibilities, alternative data handling, and new procedures.

Workaround proliferation therefore refers here to the reproduction and diversification of accommodations around an unresolved transformation obligation. Proliferation is not defined by a simple count of deviations. A large number of temporary workarounds may remain reversible if they are visible and actively reconciled, whereas a smaller set of highly embedded practices may create strong dependence. The theoretically relevant question is whether subsequent work presumes the continued availability of the workaround and whether additional arrangements become complementary to it.

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Shadow information systems demonstrate why outcomes cannot be inferred from the existence of an unofficial arrangement alone. Configurational research identifies several post-identification outcomes, including phase-out, replacement, continuation under IT management, and continuation under business management [20]. These alternatives indicate that locally developed systems can follow materially different trajectories after they become visible. In the present theory, their debt relevance consequently depends on whether governance action resolves the underlying process relationship, intentionally legitimizes the arrangement, or permits an unresolved dependency to remain embedded while new changes accumulate around it.

Enterprise architecture creates one potential interruption to such proliferation by making relationships among organizational capabilities, processes, information, and technologies more explicit. Research on enterprise-architecture artifacts associates their value with mechanisms, inhibitors, and success factors involved in strategic change [21]. This evidence does not establish enterprise architecture as a universal debt-repayment mechanism. It does, however, identify an organizational capacity through which otherwise dispersed dependencies can become visible enough to evaluate collectively.

Proliferation therefore marks a transition in analytical scale. The initial reconciliation problem may arise inside one process, team, or system. Repeated accommodations can distribute that problem across several arrangements, each of which remains locally defensible. At that point, removing one workaround may simply transfer work to another because the original mismatch has become embedded in a network of practices. The next theoretical question is whether those accommodations remain loosely connected or become mutually incompatible across organizational systems.

Cross-System Conflict

Digital transformation rarely depends on a single organizational condition. Research using technology–organization–environment configurations shows that different combinations of technological, organizational, and environmental conditions can produce successful transformation outcomes [22]. This equifinality is important for conceptualizing cross-system conflict because no individual incompatibility should be assumed to produce the same organizational consequence in every setting. A data mismatch, duplicated process, legacy interface, or parallel workflow can be tolerable under one configuration and consequential under another.

Cross-system conflict is defined here as a condition in which separately workable arrangements embody incompatible process, information, authority, or architectural assumptions that must interact for a later transformation decision to be executed. The emphasis on interaction differentiates conflict from simple heterogeneity. Organizations routinely operate diverse technologies and practices. Conflict becomes relevant when one system presumes a sequence, definition, ownership arrangement, or interface behavior that another system cannot absorb without translation, duplication, or exception handling.

A flow-oriented perspective on digital transformation further cautions against treating these conflicts as interactions among technologies alone. Longitudinal research depicts transformation as intertwined lines of action across multiple organizational levels and identifies transitional moments that change how those lines develop [23]. Local accommodations can therefore propagate beyond their original setting. A workaround developed to preserve one process may change the data supplied to another process; a parallel system may create a second authoritative record; a locally reassigned responsibility may conflict with enterprise governance; an interface designed around a temporary bridge may make later replacement contingent on that bridge.

The proposed debt mechanism begins to sharpen at this point. Cross-system conflict can increase the coordination scope of reconciliation: correcting the original discrepancy may now require simultaneous changes across several linked arrangements. Yet even this condition does not by itself establish path dependence. A well-governed organization may identify the conflict, coordinate redesign, and remove the dependency before subsequent choices are materially

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constrained. The distinction that must be carried into the compounding analysis is whether conflict remains a resolvable configuration or becomes a reinforcing condition that changes the relative feasibility of future transformation paths.

Cross-system incompatibilities differ in their capacity to constrain later choices according to what is coupled through them and what must change together for reconciliation to occur, as specified in **Table 2.**

Table 2. Cross-system conflict configurations that determine whether unresolved transformation obligations remain separable or become mutually dependent

Cross-system conflict configuration	Incompatibility carried across systems	Local accommodation sustaining operation	Coupling created by continued accommodation	Consequence if left unresolved	Non-debt interpretation that must remain possible
Process-sequence conflict	Systems encode different ordering, hand-off, or exception rules	Manual resequencing or repeated exception handling	Downstream activities begin assuming the compensating sequence	Later redesign requires coordinated alteration of multiple dependent process steps	Legitimate process variation between units
Data-definition conflict	Shared entities or states have different meanings, granularity, or update rules	Translation tables, duplicate records, or manual reconciliation	Reports and decisions become dependent on continued conversion between definitions	Replacement of one data model disrupts connected reporting and operations	Deliberate semantic differentiation for distinct purposes
Role-and-authority conflict	Systems embed inconsistent responsibility, approval, or decision-right assumptions	Informal reassignment, shared credentials, or off-system authorization	Operational accountability becomes split between formal and enacted arrangements	Governance redesign must change both system permissions and established work practices	Temporary delegated authority with explicit ownership
Architecture-and-interface conflict	New components depend on legacy interfaces or integration assumptions	Adapters, custom bridges, duplicated services, or maintained legacy endpoints	Subsequent applications incorporate the bridge as an architectural dependency	Removal requires coordinated migration across multiple connected components	Intentionally stable interoperability architecture
Parallel-system conflict	Two systems remain authoritative for overlapping organizational activity	Dual entry, synchronization, or selective use of each system	Users and processes distribute dependencies across both environments	Discontinuing either system requires simultaneous process and data reconciliation	Purposeful redundancy or formally governed specialization

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Temporal-migration conflict	Transformation stages operate under incompatible old and new assumptions for longer than planned	Extended transitional procedures and hybrid routines	Later transformation stages are designed around a transition that no longer remains temporary	The transition itself becomes an input into later design decisions	Planned phased migration with explicit retirement and reconciliation ownership

Note: These configurations are proposed analytical distinctions. Their presence does not demonstrate digital transformation debt. Debt relevance depends on whether continued accommodation generates self-reinforcement and changes subsequent option value, which is examined in the following section.

Debt Accumulation and Compounding

The existence of unresolved obligations does not yet establish path dependence. Organizational path dependence requires self-reinforcing processes through which earlier choices progressively influence the relative attractiveness or feasibility of later alternatives [24]. Applied to digital transformation debt, this condition means that an organization must become increasingly dependent on accommodations originally introduced to preserve continuity. Repetition matters because new routines, interfaces, responsibilities, and systems can become complementary to those accommodations. Reconciliation then concerns a larger configuration than the discrepancy that initially generated the workaround.

Evidence from digital servitization illustrates how historically formed organizational conditions can reinforce transformation barriers while still permitting path-breaking change [25]. The implication is that compounding should be understood as increasing coordination dependence, not as irreversible technological aging. A process discrepancy that originally required one local bridge may later require simultaneous changes to workflows, data structures, system interfaces, and authority arrangements because subsequent transformation decisions incorporated that bridge.

Historical commitments can consequently influence transformation speed without producing identical outcomes across organizations. A longitudinal study of 5,129 record labels across 68 countries found that longer historical paths were associated with slower digitalization, while organizational diversification and environmental conditions altered that relationship [26]. Conversely, research on connected-car business models demonstrates that digital technologies can participate in reshaping established trajectories rather than merely reinforcing them [27]. These findings place an important limit on the debt argument: earlier commitments can constrain future options, but technological and organizational change can also reopen them.

Digital transformation debt therefore compounds when three conditions coincide: unresolved obligations survive successive transformation episodes; new arrangements become complementary to those obligations; and removing the original accommodation requires increasingly coordinated changes elsewhere. Compounding is interrupted when organizations redesign the underlying process, deliberately formalize a useful accommodation, decouple dependent systems, or create a viable alternative trajectory before reliance becomes self-reinforcing.

Digital Transformation Debt Framework

The resulting framework treats digital transformation debt as a trajectory, rather than as an inventory of outdated technologies or accumulated workarounds. Its starting point is an unresolved transformation obligation. Local accommodation may then preserve continuity without immediate harm. The critical theoretical transition occurs only when subsequent organizational choices are made in dependence on that accommodation. Repetition creates reinforcing complementarities; cross-system coupling expands the scope of required reconciliation; and later transformation alternatives become progressively conditioned by prior arrangements.

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Path dependence remains compatible with redirection. Longitudinal evidence shows that peripheral organizational actors can sometimes bypass established resistance and create alternative transformation routes [28]. Such processes demonstrate why the framework must contain critical junctures rather than assume a one-way movement toward lock-in. A trajectory can be interrupted by redesign, selective retention, architectural decoupling, organizational reallocation of authority, or another intervention that expands the feasible option set.

The framework also generates a discriminating implication. Observable digital outcomes do not necessarily demonstrate that underlying organizational transformation has occurred. Legacy firms can achieve digital outcomes while experiencing difficulty transforming established business models [29]. In the present theory, such separation creates a testable possibility: apparent transformation success may coexist with unresolved obligations that remain latent until later changes require coordination across the arrangements built around them. Digital transformation debt is one proposed explanation for that pattern, not an established cause of it.

The framework therefore differentiates transformation states according to how unresolved obligations affect subsequent organizational choice, as synthesized in **Table 3.**

Table 3. Transformation-debt trajectory states distinguished by persistence, reinforcement, option effects, and redirection conditions

Trajectory state	Status of unresolved obligation	Relationship to subsequent transformation choices	Self-reinforcement condition	Interpretation of apparent operational success	Redirection condition
Resolved transition	Original discrepancy has been reconciled, removed, or deliberately redesigned	Later choices do not depend materially on the temporary accommodation	Absent	Operational success reflects an integrated transformed arrangement	No debt-specific redirection required
Reversible accommodation	Obligation persists temporarily and remains visible	Later choices can still be changed without coordinated restructuring elsewhere	Weak or absent	Continuity is compatible with future redesign	Reconcile before complementary dependencies accumulate
Embedded accommodation	Obligation persists and has become incorporated into routine activity	Later decisions increasingly presume continued availability of the accommodation	Emerging through complementary routines, interfaces, or authority arrangements	Short-run performance may conceal increasing dependence	Redesign, decouple, or formalize before wider coupling develops
Compounding transformation debt	Multiple unresolved obligations have become mutually dependent	Changing one element requires coordinated changes across several connected arrangements	Strong enough to narrow feasible alternatives	Continued operation can coexist with increasing future adjustment burden	Coordinated reconciliation or creation of an alternative path
Path-constrained	The unresolved arrangement	Alternatives remain technically possible	Persistent reinforcing	Stable performance	Critical-juncture intervention that

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configuration	structures a substantial portion of later organizational choices	but organizationally difficult because dependencies have accumulated	complementarities	does not demonstrate absence of debt	restores option value
Redirected trajectory	Previous dependencies have been dismantled, recoupled, or deliberately retained under a new design	Later choices no longer depend on unmanaged transitional arrangements	Reinforcing process is interrupted or replaced	Operational continuity is preserved through a different organizational configuration	Continued monitoring for renewed unmanaged dependency

Note: These states are proposed theoretical distinctions, not validated stages, maturity levels, or quantitative debt classes. Organizations may move between states, bypass them, or retain accommodations without entering a debt trajectory.

Debt Recognition and Repayment Conditions

Recognition requires more than observing old technologies, parallel systems, or workaround activity. Governance research shows that digital awareness must be translated into organizational action before it affects transformation outcomes [30]. Applied here, recognition requires identifying a persistent unresolved obligation and demonstrating that subsequent choices have become conditioned by it. A legacy system that remains because it performs a deliberately retained function is analytically different from one that cannot be removed because several later processes were designed around an originally temporary bridge.

Repayment should consequently be defined as **r**estoration of organizational option value, not simply removal of old technology. Recurrent workarounds may reveal the process causes requiring redesign [17]. Shadow systems can follow different governance outcomes rather than a single elimination pathway [20]. Enterprise-architecture mechanisms can help expose relationships among otherwise dispersed organizational elements [21]. Path breaking may arise through technological reconfiguration [27] or through actors who establish a viable route around entrenched arrangements [28]. Repayment can therefore involve reconciliation, redesign, selective formalization, decoupling, retirement, or redirection according to the mechanism sustaining the debt.

Similar unresolved obligations can thus produce different trajectories depending on whether reinforcement, coupling, visibility, and redirection capacity cross the conditions represented in **Figure 2.**

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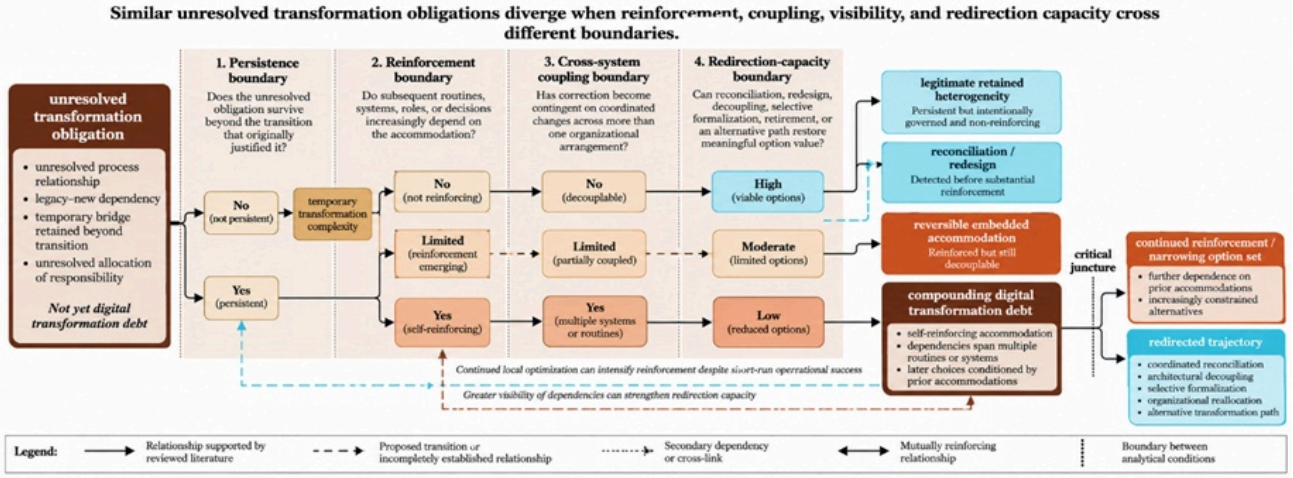

Figure 2. Similar unresolved transformation obligations diverge when reinforcement, coupling, visibility, and redirection capacity cross different boundaries

Managerial Implications and Research Agenda

The principal managerial implication is to govern transformations according to their effects on future option value, not solely according to immediate operational continuity. Workarounds that expose missing requirements can be productive [15], whereas other responses can reinforce work-system misfits [16]. Recurrent deviations may therefore deserve investigation before either formalization or elimination [17]. Managers should ask what later decisions already presume the continued existence of a temporary accommodation, which connected processes would need to change if it disappeared, and whether responsibility for the unresolved relationship remains explicit.

Research should test the framework longitudinally. Existing process scholarship already identifies insufficient attention to temporal interaction among transformation processes [7], while multilevel work demonstrates that transformation unfolds through intertwined lines of action [23]. Future studies can distinguish transformation debt from ordinary legacy burden by tracing whether earlier accommodations actually produce self-reinforcing dependencies [24]. Comparative longitudinal designs could examine critical junctures at which organizations with similar initial conflicts diverge toward reconciliation, compounding, or path breaking [25]. Industry variation is especially important because historical-path effects are context-dependent [26] and digital technologies may themselves enable path reconfiguration [27].

The resulting research agenda should therefore avoid constructing a universal debt index before the construct's mechanisms are empirically established. More informative early tests would compare trajectories: whether unresolved obligations persist, whether complementary dependencies form, when feasible alternatives begin to narrow, and which interventions restore option value.

Conclusion

Digital transformation debt is best understood as a conditional organizational trajectory rather than a synonym for legacy technology, technical debt, implementation difficulty, or workaround use. Deferred reconciliation becomes theoretically consequential when repeated accommodations are incorporated into later organizational choices, cross-system dependencies expand, and correcting an earlier discrepancy requires increasingly coordinated change elsewhere. Under those conditions, earlier transformation decisions alter later option value and create the self-reinforcement required for a path-dependence account.

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The same initial mismatch can nevertheless lead elsewhere. Temporary accommodations may reveal design requirements, heterogeneous systems may be intentionally retained, and critical junctures may enable reconciliation or redirection before dependence becomes entrenched. The contribution of the digital transformation debt construct is therefore not to predict inevitable accumulation. It is to identify when apparently successful continuity begins to reorganize the feasible set of future transformation choices, and when deliberate intervention can reopen that set.

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