

Trilha 1 - Teorias e Desenvolvimento

Tom no Topo, Eco no Meio, Silêncio na Linha de Frente: Um Modelo de Conformidade em Cascata e Fricção à Inovação no Conhecimento Organizacional

Tone at the Top, Echo in the Middle, Silence at the Frontline: A Cascaded Conformity and Innovation Friction Model of Organizational Knowledge

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RESUMO

Objetivo: Formalizar o modelo de Conformidade em Cascata e Fricção à Inovação (CCIF), que explica como expectativas hierárquicas reais ou presumidas podem converter-se em critérios informais de aprovação e transformar o conhecimento usado nas decisões. **Originalidade/Valor:** O modelo integra literaturas que explicam partes do fenômeno em uma arquitetura processual de oito estágios, distinguindo compressão epistêmica de silêncio operacional. **Metodologia:** Ensaio conceitual apoiado por uma revisão integrativa intencional e orientada pela teoria, de natureza não sistemática e sem pretensão de exaustividade. Sete domínios conceituais foram selecionados por relevância explicativa e comparados por fenômeno focal, nível de análise, mecanismo, resultado e lacuna residual. A integração seguiu uma sequência abdutiva de diferenciação de construtos, ordenação processual, especificação de contingências, proposições e operacionalização preliminar. **Resultados:** O CCIF propõe indicadores documentais, condições de contorno e uma agenda cumulativa de validação; o modelo ainda não foi validado empiricamente. **Implicações Práticas:** Salvaguardas de integridade do conhecimento podem preservar ressalvas, alternativas e rastreabilidade em rotinas hierárquicas de aprovação.

PALAVRAS-CHAVE: Governança do Conhecimento, Conformidade em Cascata, Fricção à Inovação, Silêncio Organizacional, Compressão Epistêmica.

ABSTRACT

Objective: To formalize the Cascaded Conformity and Innovation Friction (CCIF) model, explaining how real or presumed hierarchical expectations may become informal approval criteria and transform decision-relevant knowledge. **Originality/Value:** The model integrates literature that explains separate parts of the phenomenon into an eight-stage process architecture and distinguishes epistemic compression from operational silence. **Methodology:** This conceptual paper is supported by a purposeful, theory-driven, non-systematic integrative review that makes no claim to exhaustive coverage. Seven conceptual domains were selected for explanatory relevance and compared by focal phenomenon, level of analysis, mechanism, outcome and residual gap. Integration followed an abductive sequence of construct differentiation, process ordering, contingency specification, proposition development and preliminary operationalization. **Results:** The CCIF proposes documentary indicators, boundary conditions, and a cumulative validation agenda; however, the model has not yet been empirically validated. **Practical Implications:** Knowledge integrity safeguards may preserve caveats, alternatives, and traceability in hierarchical approval routines.

KEYWORDS: Knowledge Governance, Cascaded Conformity, Innovation Friction, Organizational Silence, Epistemic Compression.

1. INTRODUCTION

Mature organizations develop sophisticated mechanisms to reduce variation, coordinate units, prepare decisions, and avoid surprises at senior levels. Pre-meetings, review cycles, executive comments, presentation scripts, and successive refinements increase coherence and can be indispensable in industrial, regulated, and capital-intensive environments that depend on quality, safety, financial discipline, and reliable execution of work.

The same system may produce unintended effects on organizational knowledge. As people learn what leadership expects to hear, the preparation process no longer tests only the quality of a proposal; it also tests its compatibility with an informal-approval script. Middle managers may reproduce the vocabulary, concerns, and presumed resistance of senior leaders as evidence of their alignment. Professionals close to operations may conclude that certain information will be poorly received or will have no consequences. The organization continues to produce polished presentations but loses part of the interpretive variety required for sound decisions. Knowledge does not merely circulate upward; it is transformed as it crosses positions of authority.

This problem is particularly relevant to innovation and transformation. Execution seeks to reduce variation, whereas exploration must preserve useful variation long enough for alternatives to be tested. Execution values predictability; innovation requires experimentation, qualified divergence, and tolerance for incomplete learning. Innovation friction emerges when governance designed to exploit known certainties is applied without adaptation to the exploration of new possibilities. Tone at the top defines what may be said, echo in the middle defines what will be repeated, and silence at the front line hides what should be known.

This study addresses the following question: How are real or presumed hierarchical expectations converted into informal approval criteria and, through middle layers, transformed into epistemic compression, operational silence, and innovation friction? It formalizes the Cascaded Conformity and Innovation Friction (CCIF) model, differentiates productive alignment from epistemically destructive conformity, specifies the middle-management transmission mechanism, distinguishes framing from the final knowledge artifact, and proposes constructs, propositions, safeguards, and a program for empirical validation of the model. Knowledge integrity is defined as the extent to which material evidence, uncertainty, alternatives, assumptions, and technical reservations remain visible and traceable throughout the decision-making process.

2. THEORETICAL FOUNDATIONS

The CCIF model integrates established literature that explains distinct parts of the phenomenon. Its proposed contribution is not to rename them but to connect them into a process architecture centered on how knowledge is modified for hierarchical approval.

2.1 Organizational Learning and Knowledge Flow

Huber (1991) categorizes organizational learning into knowledge acquisition, information distribution, interpretation, and memory. Crossan, Lane, and White (1999) describe a dynamic linking of intuition, interpretation, integration, and institutionalization across levels. The CCIF focuses on a vulnerability within this flow: content reaching senior decision-makers may become more coherent yet less decision-useful because it has passed through successive filters of approvability. The relevant problem is therefore not only whether information moves but also what survives its movement.

2.1.1 CCIF as a Pathology of Knowledge Conversion

CCIF can be considered a pathology of knowledge conversion. In terms of Nonaka and Takeuchi (1995), the cascade disrupts externalization because tacit operational knowledge is never articulated when it would not survive approval, and it distorts combination because explicit knowledge is recombined for approvability rather than for decision quality, so that the organization internalizes an approval script rather than operational reality. Carlile (2004) sharpens the same point: his most demanding knowledge boundary, the pragmatic boundary, arises precisely where interests diverge, and knowledge must be transformed rather than merely transferred. The middle-management hinge sits on exactly such a boundary, between operational truth and hierarchical acceptability, and CCIF predicts that under high approval dependence, the transformation will systematically favor the latter.

2.2 Exploration, Exploitation, and Organizational Ambidexterity

March (1991) distinguishes the exploration of new possibilities from the exploitation of existing certainties and warns that adaptive systems tend to refine exploitation more rapidly, producing short-term efficiency and long-term fragility. Organizational ambidexterity research argues that exploration and exploitation require different structures and disciplines (O'Reilly and Tushman, 2011), and a recent review maps how organizations attempt to reconcile them (Kassotaki 2022). CCIF specifies an approval-oriented social mechanism behind this tension: when convergence and predictability are rewarded throughout the same review architecture, alternatives may be eliminated before the formal choice, allowing execution excellence to coexist with weak exploration capability.

2.3 Organizational Silence, Voice, and Anticipatory Self-Censorship

Morrison and Milliken (2000) define organizational silence as the widespread withholding of information about potential problems. Edmondson (1999) links psychological safety to learning behavior, Detert and Burris (2007) show that managerial openness affects voice, and Detert and Edmondson (2011) demonstrate that employees hold implicit voice theories: taken-for-granted beliefs about when speaking is risky or inappropriate. More recent work reinforces two distinctions relevant to CCIF: that voice and silence are related but distinct rather than simple opposites (Sherf, Parke, and Isaakyan, 2021), and that voice is an interactional process whose survival depends on how others cultivate or abandon issues over time (Satterstrom, Kerrissey, and DiBenigno, 2021). Reviewing a decade of research, Morrison (2023) calls for a broader conceptualization that is attentive to their organizational antecedents and consequences. CCIF moves the analytical starting point earlier: before explicit withholding, individuals may modify an idea, soften a caveat, remove an alternative, or decide not to create a formal record because they have internalized an approval script.

2.4 Issue Selling and Middle-Management Sensemaking

Issue selling research examines how managers package and time issues to gain top-management attention (Dutton and Ashford, 1993). Sensemaking research shows that middle managers interpret, translate, and reshape strategic change rather than merely transmitting it (Balogun and Johnson, 2004), and integrative reviews of strategy implementation position them as active shapers rather than passive conduits of strategic intent (Weiser, Jarzabkowski, and Laamanen, 2020). CCIF examines the boundary between legitimate translation and conformity-producing alteration. Middle managers may preserve nuance and test assumptions or convert a senior preference into a practical veto by repeatedly presenting it as an established constraint.

2.5 Knowledge Hiding, Groupthink, and Threat Rigidity

Knowledge hiding concerns intentional attempts to conceal requested knowledge (Connelly et al., 2012; Connelly et al., 2019), a field consolidated by recent systematic reviews and meta-analytic evidence (Anand, Offergelt, and Anand, 2022; Shen et al., 2025). CCIF differs because it includes non-deceptive, locally rational knowledge loss. Groupthink explains defective consensus under strong cohesion (Janis, 1982) but does not trace the document-by-document transformation of knowledge across the layers. Threat-rigidity theory predicts restricted processing and centralized control under perceived threats (Staw, Sandelands, and Dutton, 1981). The CCIF incorporates these insights while locating the observable mechanisms in approval routines, language convergence, caveat attrition, and anticipatory veto.

2.6 Normalization, Legitimacy, and Double-Loop Learning

Vaughan (2016) shows how risky practices become normal through locally rational decisions, culture and history. Ashforth and Anand (2003) describe how institutionalization, rationalization, and socialization make problematic conduct routine in organizations. Meyer and Rowan (1977) explain that formal structures may secure legitimacy while being decoupled from practice. Argyris (1977) distinguishes correction within existing rules from learning that questions the rules. CCIF applies these insights to knowledge integrity: omissions may be normalized as fine-tuning, innovation rituals may be decoupled from decision rights, and review cycles may perfect an answer without letting the organization question the approval standard.

2.7 The Knowledge Governance Approach

The knowledge governance approach examines how organizations deploy formal and informal mechanisms - structures, coordination modes, incentives, and authority relations - to influence knowledge processes such as sharing, creation, transfer, and retention (Foss, 2007; Foss, Husted, and Michailova, 2010). This literature establishes that governance choices are not neutral to knowledge outcomes and that the same mechanism can enable or inhibit desirable knowledge behaviors. CCIF is positioned within this tradition but addresses a comparatively underdeveloped question. Most knowledge governance research asks how mechanisms can be designed to promote knowledge sharing or creation. The CCIF asks how an ordinary, legitimate approval architecture can degrade knowledge integrity as an unintended byproduct and traces this degradation dynamically across successive versions of a decision artifact rather than treating governance as a static design lever. Its dependent variable is therefore not the volume of knowledge shared but the traceability of caveats, alternatives, assumptions, and technical reservations as knowledge crosses the hierarchy.

Table 1 - CCIF Compared with Adjacent Constructs

Adjacent construct	Shared concern	What it does not explain	Specific CCIF contribution
Organizational silence and implicit voice theories	Withholding and self-censorship when the voice appears risky or futile.	The documentary is a version-by-version process through which caveats attrite before withholding becomes observable.	It adds a hierarchical process through which approval scripts cause caveat attrition before silence is observable.
Knowledge hiding	Knowledge is intentionally withheld from other people.	Non-deceptive, locally rational knowledge loss that no one intends to conceal.	This includes intentional and non-intentional knowledge loss produced by translation, simplification, and anticipatory adjustment.

Adjacent construct	Shared concern	What it does not explain	Specific CCIF contribution
Issue selling	Managers package issues to obtain senior attention and support.	The point at which packaging crosses into approval optimization rather than persuasion.	It explains when packaging becomes approval-optimized and how repeated reviews alter the knowledge artifact.
Groupthink	Consensus pressures reduce the critical evaluation of alternatives.	Multilevel hierarchical filtering across successive document versions over time.	It focuses on executive comment codification and traceable changes across versions, not only group decision dynamics.
Threat rigidity and organizational ambidexterity	Threat narrows processing, and exploration and exploitation require different arrangements.	The social mechanism that transfers execution logic into exploratory work by default.	Specifies approval dependence as a mechanism that eliminates useful variation before formal choice.
Institutional decoupling	Formal structures and symbols may differ from substantive practices.	The microprocess inside a single decision cycle generates symbolic transformation.	Traces how approval routines generate symbolic transformation by separating innovation language from autonomy and decision-making rights.
Uncertainty absorption	Evidence is lost as information ascends the hierarchy, and inferences replace it.	The loss varies with approval dependence and authority ambiguity, and it leaves a version-by-version trace.	It adds a motivated, approval-anticipating trigger and a traceable attrition signature and predicts different compressions of the same information under different approval regimes.
MUM effect	Reluctance to pass unwelcome information upward:	Gradual, artifact-level reshaping occurs even when people continue to speak.	Extends from suppressing discrete bad news to version-by-version transformation of the whole knowledge artifact, tied to an anticipatory approval script.
Knowledge governance approach	Governance mechanisms shape the knowledge processes and outcomes.	How legitimate approval governance can unintentionally degrade knowledge integrity, version by version.	Reframes knowledge governance around protecting the traceability of caveats, alternatives, and reservations, and specifies the meso-approval mechanism that erodes them.

Source: Author's preparation.

3. THEORETICAL GAP AND POSITIONING

The literature above explains important fragments of the phenomenon, but no single framework has been designed to trace the successive transformation of organizational knowledge for hierarchical approval. Silence research explains why people do not speak; issue selling explains how issues are packaged; upward filtering and the MUM effect explain the selective transmission of unfavorable information; impression management explains strategic self-presentation; groupthink explains consensus pressure; threat rigidity explains narrowing under threat; and institutional theory explains symbolic decoupling. The CCIF does not treat

these accounts as deficient. Its candidate contribution is narrower: to reconstruct the trajectory of material knowledge items across successive editorial transitions and to determine whether cumulative changes reduce fidelity, functional recoverability, or authority exposure in a direction associated with authority-specific-approval expectations.

CCIF is a candidate meso-organizational process theory of knowledge governance that incorporates multilevel antecedents and distinct units of observation. It does not replace the source theories or constitute a validated global organizational construct. Its distinctive claims are that: (a) comments and presumed expectations may be codified into authority-, domain-, and time-specific approval rules; (b) material knowledge can lose fidelity or functional exposure after entering a decision trajectory; (c) middle-management transmission may change those rules, but similarity alone does not demonstrate causal echo; and (d) the trajectory can be reconstructed item-by-item across versions. Organizational CCIF can be inferred only from recurrent directional patterns across multiple actors, episodes, and time, not from one episode or a cross-sectional perceptual score.

Two further neighbors sharpen what is distinctive about CCIF: Uncertainty absorption (March and Simon, 1958) holds that as information ascends a hierarchy, inferences progressively replace the evidence on which they rest, leaving recipients with conclusions that they cannot independently evaluate. CCIF shares this concern with evidence loss across levels but differs in trigger and trace: where uncertainty absorption is largely a byproduct of summarization under communication load, CCIF specifies a motivated mechanism in which content is reshaped in anticipation of what a specific approving authority wants. The MUM effect (Rosen and Tesser, 1970) describes the reluctance to transmit unwelcome information. The CCIF operates more broadly and earlier, concerning not the suppression of discrete bad news but the version-by-version softening of caveats, merging of scenarios, and untraceable removal of alternatives, which can occur even while frontline members continue to speak.

Therefore, the model's sharpest point of divergence from adjacent theories is empirical rather than definitional. Whereas organizational silence and institutional decoupling predict end-states—information withheld or a gap between formal structure and substantive practice - CCIF predicts an observable, version-by-version attrition of material caveats and alternatives that precedes and partly produces silence, leaving a documentary trace. This yields a direct falsification test: holding the underlying information constant, uncertainty absorption predicts comparable summarization regardless of approval dependence, whereas the CCIF predicts systematically greater caveat and alternative attrition as approval dependence, authority-source ambiguity, and echo intensity rise. The CCIF would be disconfirmed if attrition showed no

such association or if the documentary indicators failed to predict innovation-friction outcomes beyond the established measures of silence, psychological safety, knowledge hiding, and uncertainty absorption.

4. METHODOLOGICAL APPROACH

4.1 Research Design

This study adopts a conceptual theory-building design that combines theory synthesis and theory adaptation (Jaakkola, 2020). Theory synthesis connects previously separate explanatory traditions into an integrated process architecture, while theory adaptation uses the knowledge integrity lens to reconsider how hierarchical approval routines reshape organizational knowledge. The unit of theorizing is the review-and-transmission process through which decision artifacts move across organizational hierarchies. The intended output is construct differentiation, process ordering, propositions, and preliminary operationalization rather than estimates of the frequency or prevalence of findings in bounded literature.

4.2 Construction of the Theoretical Corpus

The theoretical corpus was constructed through a purposeful, theory-driven, integrative review. This is not a systematic literature review and does not claim to provide exhaustive coverage of the literature. The process begins with the focal phenomenon: the progressive modification of decision-relevant knowledge as proposals move through hierarchical approval routines. Seven domains were selected for their explanatory relevance: organizational learning and multilevel knowledge flow, exploration, exploitation, and ambidexterity, organizational silence, voice, and implicit self-censorship, issue selling and middle-management sensemaking, knowledge hiding, groupthink, and threat rigidity, normalization of deviance, and legitimacy, decoupling, and double-loop learning. Seminal contributions established original construct definitions and boundaries, and adjacent theories were retained when they offered a complementary mechanism or a plausible rival explanation. A source was considered relevant when it clarified an antecedent, transmission mechanism, knowledge transformation process, outcome, moderator, boundary condition, or path to empirical operationalization.

4.3 Comparative Analysis and Theory Integration

The selected contributions were compared using five questions: what phenomenon the theory explains, its principal level of analysis, its central mechanism, its expected outcome, and what part of the hierarchical knowledge transformation process remains unexplained. This comparison differentiates CCIF from organizational silence, knowledge hiding, issue selling, groupthink, threat rigidity, uncertainty absorption, and institutional decoupling. Integration

followed an abductive sequence comprising reflective observation, confrontation with established literature, construct differentiation, process ordering, specification of contingencies, proposition development and preliminary operationalization. Reflective executive practice served only as a generative trigger for theorizing; it was not treated as empirical evidence, a case study, or a basis for estimating the prevalence of the proposed mechanisms.

4.4 Quality Criteria and Methodological Limitations

The model was assessed using criteria appropriate for conceptual research: internal coherence, construct distinctiveness, parsimony, measurability, explanatory reach, and predictive usefulness (MacInnis, 2011). Because the review is purposive and interpretive, it does not support bibliometric claims, prevalence estimates, or the conclusion that the corpus represents the complete universe of studies on focal constructs. Therefore, the CCIF should be read as a theoretically grounded and falsifiable candidate model, not as an empirically validated causal account. These limitations inform the staged validation agenda presented in Section 9.

5. THE CASCADED CONFORMITY AND INNOVATION FRICTION MODEL

5.1 Formal Definition and Construct Architecture

The CCIF model explains how real or presumed hierarchical expectations are translated into informal approval criteria, codified by executive review, echoed by middle layers, and converted into a representation of reality and a final knowledge artifact that is optimized for acceptance. The process may strengthen execution consistency, but under uncertainty, it may compress knowledge diversity, silence operational expertise, and increase resistance to innovation. The model is process-oriented rather than moralistic: the cascade can arise from locally rational behaviors such as avoiding rework, protecting a career, respecting hierarchy, preserving consensus, or simplifying complexity for a distant audience. Systemic risk appears when these adaptations reinforce one another, become difficult to contest, and leave weak traceability behind.

The model spans several analytical levels, from institutional actors outside the firm to individual professionals, knowledge items, decision artifacts, and organizational outcomes. Its explanatory center remains meso-organizational: the review routines and transmission interfaces through which cross-level influences alter decision artifacts. Tone Above the Top is not the external expectation itself but the locally attributed interpretation of what an external or higher authority is believed to require. An Approval Code is an actor-specific conditional rule regarding what a particular authority is expected to approve within a defined domain and

period. Code Existence, Code Accuracy, and Code Distortion are analytically distinct: an accurate expectation is not a distortion. Approval-Optimized Knowledge refers to codified organizational knowledge embedded in a decision artifact rather than the totality of knowledge held by organizational members.

5.1.1 Scope and Explanatory Boundaries

CCIF is intended to explain the systematic and directionally patterned transformation of decision-relevant knowledge across hierarchical approval routines. The elementary unit of observation is the material knowledge item, such as a risk, alternative, assumption, uncertainty, reservation, causal claim, or success condition, followed by the sequence of interactions and document versions. The eligible baseline is finite; it includes only material, verifiable knowledge documented, formally introduced, or functionally accessible within the bounded decision trajectory. The model is expected to be most applicable when proposals pass through multiple review layers, approval authority is concentrated, and successive decision artifacts can be observed.

The model does not claim that all hierarchical alignments produce conformity, that all simplifications constitute epistemic compression, or that every instance of silence results from an approval cascade. Ordinary summarization, legitimate quality control, evidence-based elimination of alternatives, and necessary convergence in high-reliability settings should not be classified as CCIF. Epistemic Compression requires a material knowledge item, loss of fidelity through transformation, and loss of functional exposure or recoverability. Textual shortening alone is insufficient, and an item that remains functionally accessible through a traceable alternative route should not be treated as lost.

Its explanatory value should be weaker when decision rights are distributed, disagreement is institutionally protected, review changes remain traceable, exploratory work operates under separate governance, or outcomes are dominated by exogenous constraints. CCIF will gain support only if prospective approval rules predict new cases, version-by-version transformations show temporal and directional correspondence, materiality can be rated reliably by independent assessors, and the trajectory adds explanatory or predictive value beyond upward filtering, organizational silence, issue selling, impression management, knowledge hiding, evidence quality, time and space constraints, and other rival accounts.

Table 2 - Candidate Constructs and Positions in the CCIF Model

Model position	Construct	Operational definition	Primary level / unit of analysis	Observable manifestations
Antecedent	Tone Above the Top	Locally attributed interpretation of expectations ascribed to headquarters, shareholders, founders, regulators, or markets, especially when the source or binding force is ambiguous.	External institution to organization (attribution)	"Headquarters will not approve"; external preference treated as instruction.
Antecedent	Tone at the Top	Local interpretation of the acceptable direction, narrative, priorities, tolerated risks and contestable topics.	Top leadership	Final framing, preferred vocabulary, and topics that can or cannot be reopened.
Transmission	Executive Approval Codification	Conversion of executive comments, questions, and prior decisions into an informal approval code for use in later reviews.	Top-middle interface	Meeting notes become a checklist; preferences are treated as precedents.
Transmission	Echo in the Middle	Reproduction and amplification of perceived preferences by middle management to signal prudence, loyalty or control.	Middle management	Lexical convergence, preventive correction, local veto attributed upward.
Knowledge deformation	Epistemic Compression	Reduction of alternatives, caveats, contradictory evidence, and uncertainty are needed to understand trade-offs.	Document / knowledge artifact	Caveats move to the appendices; scenarios merge; and assumptions lose traceability.
Knowledge deformation	Operational Silence	Relevant knowledge is withheld, abandoned, unrecorded, or not escalated by personnel close to operations.	Individual / frontline	"There is no point raising it"; absent technical record; weak upward escalation.
Representation	Audience-Optimized Reality	A framing process that adjusts the representation of reality to the presumed expectations and attention limits of the decision audience.	Process (dyad / group)	Strategic simplification, selective ordering of true facts, and uncertainty reframed as control.
Artifact	Approval-Optimized Knowledge	The final presentation, report, or recommendation, embedded in a decision artifact, is organized primarily to survive approval rather than to maximize decision quality.	Document / knowledge artifact	Polished artifacts with weak traceability of options, dissent, and unresolved evidence.
Outcome	Innovation Friction	Social, cognitive, and procedural costs inhibit the generation, testing, selection, and adoption of alternatives.	Organization / unit	Multiple previews, anticipatory veto, and novelty filtered before testing.
Outcome	Symbolic Transformation	Innovation language and rituals advance faster than autonomy, evidence standards,	Organization / unit	Start-up discourse with legacy approvals; experts or seals used as symbolic endorsements.

Model position	Construct	Operational definition	Primary level / unit of analysis	Observable manifestations
		incentives, capabilities, and decision-making rights.		

Source: Author's preparation.

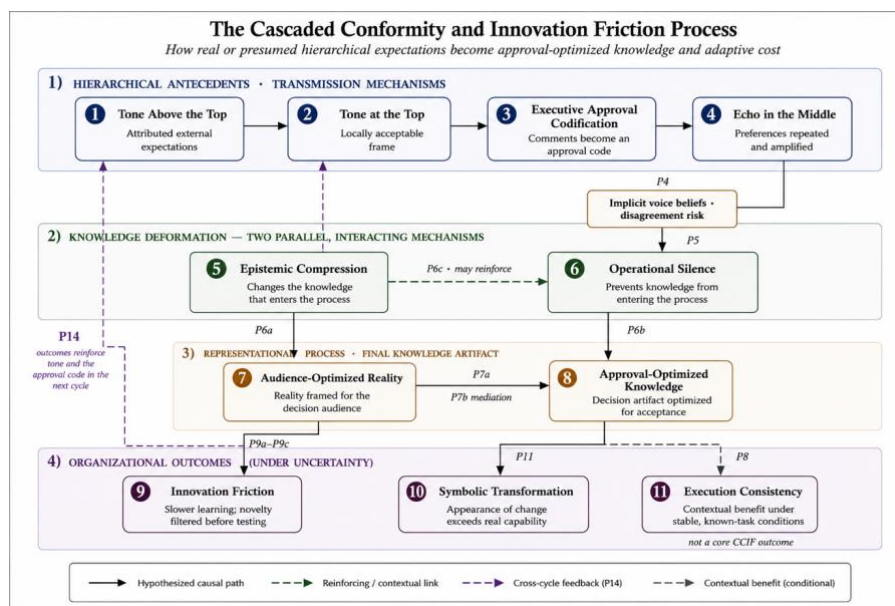
5.2 Process Architecture: The Eight-Stage Cascade

The cascade begins with Tone Above the Top, when formal guidance, memories of prior decisions, and assumptions about actors above or outside local leadership are treated as equivalent to one another. Local leaders translate these expectations into an acceptable framework through Tone at the Top. Executive comments and recurring review patterns then harden into Executive Approval Codification. A question can become a conclusion, a preference can become a precedent, and a past decision can become a rule that is applied to a different context.

Middle management occupies a potentially decisive position. Echo in the Middle is treated as a relational change mechanism, not as an autonomous trait or a conclusion drawn from lexical similarity. A causal echo claim requires a measured pre-exposure Approval Code, documented interpersonal transmission, a subsequent directional change in the receiver's code, and later application while controlling direct authority contact and shared formal rules. Without this temporal evidence, the observation should be described only as a similarity or possible diffusion. Epistemic Compression and Operational Silence remain distinct: compression concerns the material loss of fidelity and functional exposure after knowledge enters the trajectory, whereas silence prevents knowledge from entering it. Because silence has its own antecedents, it can occur without prior compression, and compression can occur while frontline professionals continue speaking.

The process then separates framing from the artifact and the artifact from exposure. Audience-Optimized Reality is the active representation of facts, assumptions, and uncertainties for a particular authoritative audience. Approval-Optimized Knowledge is the resulting presentation, budget, recommendation or transformation narrative. Document presence, potential recoverability, actual recovery, functional exposure, and authority recognition are not equivalent to each other. Therefore, the exposure Gap is an episode-level outcome: the materiality-weighted difference between eligible knowledge and the knowledge functionally exposed to the authority across all relevant routes. It identifies what was not exposed, but does not, by itself, establish that an Approval Code caused the gap.

Figure 1 - The Eight-Stage Cascaded Conformity and Innovation Friction Process



Note. Epistemic compression and operational silence are modeled as parallel, interacting mechanisms fed by Echo in the Middle; P6c denotes reinforcement across successive review cycles. Audience-optimized reality is the representational process, and approval-optimized knowledge is the resulting decision artifact. Execution consistency is shown as a contextual benefit under stable, known-task conditions outside the two core organizational outcomes (innovation friction and symbolic transformation). The dashed feedback path (P14) indicates that approval-optimized knowledge and symbolic transformation reinforce the tone and approval code in subsequent review cycles.

Source: Prepared by the author.

Box 1 - Illustrative Process Trace (hypothetical scenario; not empirical evidence)

Stage	Illustrative event
Initial proposal	Three technical alternatives and two unresolved caveats are discussed.
Executive review	A question is recorded about the cost of Alternative C.
Middle interpretation	The recorded question becomes "leadership will not approve C."
Version revision	Alternative C is removed, and one caveat is softened.
Frontline response	The technical specialist stops restating the reservations.
Final artifact	Two alternatives remain: the caveat is diluted, and the apparent consensus increases.

This trace is for illustrative purposes only. It is intended to make the cascade concrete and is not offered as data or as evidence for the propositions.

5.3 Explanatory Mechanisms

Several mechanisms sustain this cascade. Hierarchical anticipation leads people to estimate the authority's response and adjust a proposal before formal assessment; implicit voice rules define what appears risky to raise; lexical convergence reduces visible conflict and signals belonging; impression management presents control even when learning is incomplete; and surprise aversion removes topics that might expose public disagreement. Risk asymmetry operates throughout: the personal cost of challenging is immediate and concentrated, whereas

the organizational cost of silence is diffuse and delayed. Omissions are then justified through pro-organization rationalization—simplifying the message, protecting leadership time, avoiding rework—while approval dependence turns approvability into a practical survival criterion, and symbolic decoupling lets innovation rituals, external experts, and transformation vocabulary expand without equivalent changes in autonomy, evidence standards, and decision rights. None of these mechanisms require deliberate falsification; the cascade can produce distortion through sequences of defensible local choices.

6. PROPOSITIONS FOR FUTURE VALIDATION

The propositions are candidate empirical statements and should be converted into hypotheses with explicit populations, units of analysis, measures, temporal orderings, and boundary conditions. They were grouped into antecedents and transmission (P1-P3), knowledge deformation and artifact formation (P4-P7), contingent organizational outcomes (P8-P9c and P11), and moderators or safeguards (P10 and P12a-P12d). Following the principle of one proposition, one main causal relationship, statements that combine a direct effect with a moderator or mediator are disaggregated into lettered sub-propositions. P2a-P2b separates the direct link from its moderator; P6a-P6c separates the two paths into audience-optimized reality from a temporally ordered cross-mechanism effect; and P7a-P7b separates the direct link from the mediation claim. The outcome statement for uncertain environments is likewise separated into distinct dependent variables (P9a-P9c), and each safeguard is stated independently because it is manipulable and should be tested on its own causal path rather than as a bundle. Two further groups make the model's scope and dynamics explicit: boundary conditions specifying when the cascade is strong or weak (P13a-P13c), and a feedback proposition capturing self-reinforcement across recurring review cycles (P14).

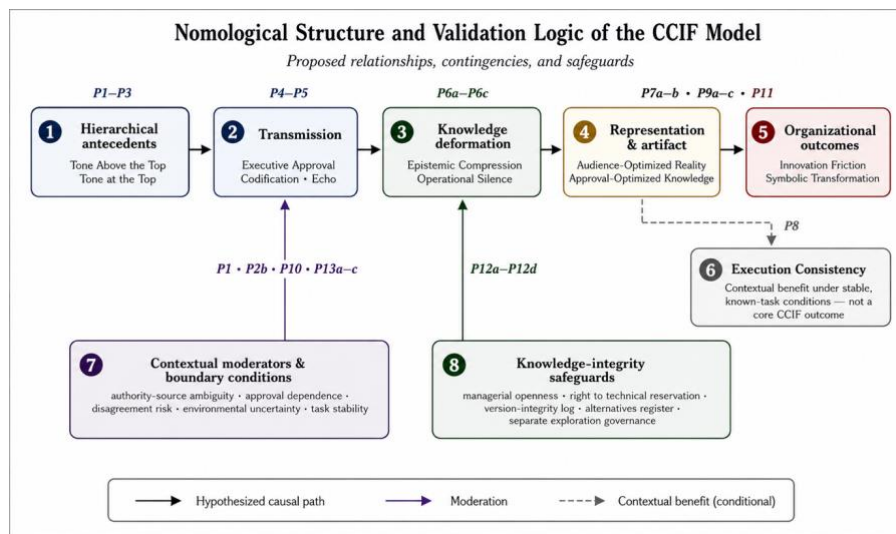
Table 3 - Propositions of the CCIF Model

Code	Proposition
P1	The greater the ambiguity surrounding the expectations of a higher authority, the more likely it is that attributed expectations will be treated locally as formal constraints.
P2a	Tone at the top is positively associated with the codification of executive approval.
P2b	Executive comment ambiguity strengthens the positive relationship between tone at the top and executive approval codification; ambiguity is higher when recurrent, high-status comments are weakly differentiated among questions, preferences, recommendations, and decisions.
P3	Documented interpersonal transmission of an authority-specific Approval Code is associated with a subsequent directional change in the receiver's code and its later application after controlling for direct authority contact and shared formal rules.
P4	Across successive versions, the application of an authority-specific Approval Code is associated with a greater materiality-weighted loss of knowledge fidelity and functional exposure for

Code	Proposition
	misaligned items than for aligned items, net of evidence quality and legitimate synthesis requirements.
P5	The stronger employees' implicit beliefs that speaking up is risky or futile, the greater the operational silence, particularly when that belief is shared across the immediate workgroup rather than held individually.
P6a	Epistemic compression is positively associated with the production of audience-optimized realities.
P6b	Operational silence is positively associated with audience-optimized reality production.
P6c	Epistemic compression in one review cycle is positively associated with operational silence in subsequent cycles.
P7a	Audience-optimized reality was positively associated with approval-optimized knowledge.
P7b	Audience-optimized reality mediates the effects of epistemic compression and operational silence on approval-optimized knowledge.
P8	In stable, repetitive tasks with known criteria, moderate cascaded convergence is positively associated with execution consistency, which is a contextual benefit rather than a core CCIF outcome.
P9a	In uncertain or transformational environments, approval-optimized knowledge is negatively associated with the novelty of alternatives that reach decisions.
P9b	In uncertain or transformational environments, approval-optimized knowledge is negatively associated with the learning velocity.
P9c	In uncertain or transformational environments, approval-optimized knowledge is negatively associated with adaptive responses.
P10	Psychological safety and managerial openness weaken the relationship between echoes in the middle and operational silence.
P11	When innovation rhetoric increases without equivalent changes in experimental autonomy, evidence standards, tolerance for bounded failure, and decision-making rights, symbolic transformation increases.
P12a	A formal right to technical reservation weakens the relationship between perceived disagreement risk and operational silence.
P12b	Version integrity logs weaken the relationship between the echo in the middle and epistemic compression.
P12c	Expectation-source classification weakens the relationship between the tone above the top and its treatment as a formal constraint.
P12d	Separate exploration governance weakens the relationship between approval-optimized knowledge and reduced novelty.
P13a	Boundary condition: The model's predicted relationships hold more strongly when authority is distant, ambiguous, or personalized than when authority is proximate, clearly specified, and impersonal.
P13b	Boundary condition: The model's predicted relationships hold more strongly when access to the budget, promotion, and information is concentrated in a few approvers than when it is distributed.
P13c	Boundary condition: The model's predicted relationships hold more strongly when disagreement carries concentrated, immediate personal risk than when the cost of dissent is low or shared.
P14	In recurring review systems, approval-optimized knowledge and symbolic transformation in one cycle are positively associated with the strength of tone at the top and executive approval codification in subsequent cycles (self-reinforcement across cycles).

Source: Prepared by the author.

Figure 2 - Nomological Structure and Proposed Validation Logic of the CCIF Model



Note. Solid arrows denote the hypothesized causal paths, and the two lower boxes act on the chain as contextual moderators and knowledge integrity safeguards. P7b represents mediation through an audience-optimized reality. Execution consistency is placed outside the organizational outcome set as a conditional contextual benefit (P8). Boundary conditions (P13a-P13c) enter as contextual moderators of cascade strength, and a cross-cycle feedback proposition (P14) reinforces the approval code over successive cycles.

Source: Prepared by the author.

7. DISCUSSION

The model does not treat discipline or hierarchy as problems. Its purpose is to distinguish the knowledge regime appropriate for execution from that needed for exploration. Execution begins after the objectives, processes, and criteria have been defined. Exploration begins when some of these definitions must be questioned. Applying one governance logic to both regimes creates innovation friction because a process designed to remove variation begins to remove the alternatives from which learning depends.

Table 4 - Execution Governance versus Exploration Governance

Dimension	Execution governance	Exploration governance
Central question	How do we deliver according to the standard?	What must we learn before defining or revising standards?
Variation	Reduce and control.	Generate, test, compare, and select.
Error	Deviation to prevent.	Information was captured within safe and ethical limits.
Authority	Clarity of command, accountability, and escalation are essential.	Experimental autonomy, contestability, and reversible decisions are also important.
Metrics	Time, cost, quality, safety, and compliance.	Learning rate, hypotheses tested, options created, and evidence were accumulated.
Presentation	It demonstrates readiness, commitment, and control.	It exposes uncertainty, assumptions, alternatives, and pending decisions.

Source: Prepared by the author.

Middle management deserves particular attention because it is the structural hinge of this cascade. As a critical translator, the middle manager preserves nuance, distinguishes a leader's question from a decision, and returns operational evidence upward. As a repeater, the same manager copies the dominant interpretation to signal alignment and converts preferences into constraints. Therefore, the model does not assume that the middle is inherently resistant; it predicts that the quality of translation determines how much knowledge survives the ascent to the decision.

Because these reviews recur, the cascade does not merely repeat across cycles; it can accelerate the process. Proposition 14 captures the basic feedback, but the three compounding effects deserve emphasis. Caveats that survive one cycle as footnotes may not survive the next because the prior artifact's silence is read as a confirmed consensus. The lexical convergence of one cycle can become the mandatory vocabulary of the next, making alternative framing harder to voice. Over time, those who echo well tend to advance, while those who preserve caveats are marginalized; thus, the system gradually selects its own future agents. Therefore, the model predicts that the cascade is hardest to reverse not at its onset but after several cycles, once the approval code has been institutionalized.

A recognizable failure is the coexistence of startup rhetoric and legacy governance models. An organization may adopt squads, hackathons, laboratories, agile vocabulary, and disruption narratives while preserving multiple previews, rigid budgets, error aversion, weak rights to challenge, and anticipatory hierarchical vetoes. In such a system, an organization may not select the most transformative ideas. It selects ideas that appear new while remaining compatible with the inherited, approval architecture.

The same pattern recurs wherever there is high reputational pressure and information asymmetry. It is directly relevant to knowledge management in sustainability and carbon markets, where technical complexity, long time horizons and information asymmetry favor symbolic endorsement. Certificates, roadshows, impact language, and the presence of an expert can occupy the space that should be filled by methodology, traceability, and independent verification. CCIF distinguishes an expert engaged to analyze and formally record limitations from an expert whose presence is used as borrowed legitimacy for an unvalidated claim. The managerial issue is not whether experts or certifications are used, but whether their evidence, scope, limitations, and decision consequences are explicit.

8. CONTRIBUTIONS AND KNOWLEDGE-INTEGRITY SAFEGUARDS

Theoretically, CCIF integrates fragmented literatures into an approval-oriented process chain, contributing to the four distinctions developed above: expectations attributed from above or outside local leadership; the codification of executive comments into an informal approval code; epistemic compression as analytically prior to and distinct from silence; and audience-optimized reality as the representational process behind approval-optimized knowledge. It also frames symbolic transformation as a form of institutional decoupling, in which the appearance of innovation advances faster than adaptive capability.

Practically, the model provides a diagnostic vocabulary and documentary indicators that allow organizations to detect knowledge loss before it becomes a failed decision-making process. The proposed safeguards do not abolish the hierarchy or consensus. They create traceability and contestability so that alignment does not erase the evidence needed for learning.

The safeguards are subject to the cascade they are meant to interrupt. A version-integrity log or an alternative register can decay into performative compliance if it records changes without creating a genuine obligation to justify them, reproducing symbolic transformation at the level of the safeguard itself. Their value, therefore, depends on pairing documentary traceability with real contestability: a preserved caveat matters only if someone retains the standing and the occasion to act on it.

Table 5 - Knowledge-Integrity Safeguards and Points of Intervention

Safeguard	Cascade stage interrupted	Primary owner	Evidence produced
Expectation-source classification	Tone Above the Top	Proposal owner or governance office	Records whether a constraint is formal guidance, a prior decision, stakeholder expectation, or a local assumption.
Question-preference-decision tagging	Executive Approval Codification	Meeting chair or secretary	It distinguishes executive questions, preferences, recommendations, and binding decisions.
Version-integrity log	Epistemic Compression	PMO, strategy, or knowledge governance	Records material additions, removals, softening caveats, changed assumptions, and the reasons for each change.
Alternatives register	Epistemic Compression / Approval-Optimized Knowledge	Decision owner	Preserves options considered, evidence, trade-offs, and reasons for exclusion of the options.
Right to technical reservation	Operational Silence	Technical or operational specialist	It allows a signed qualification or dissenting assessment to remain attached to the decision record.

Safeguard	Cascade stage interrupted	Primary owner	Evidence produced
Independent challenge role	Echo in the Middle	Review committee or designated challenger	Tests whether repeated claims are evidence-based or merely attributed to authority.
Separate exploration governance	Innovation Friction	Executive leadership	It provides reversible decision rights, bounded experimental budgets, and learning metrics before full approval standards are applied.

Source: Prepared by the author.

9. SCOPE, LIMITATIONS AND RESEARCH AGENDA

CCIF should not be used to conclude that every executive preparation process is theater, every repetition is conformity, or every hierarchy is incapable of innovation. The cascade is expected to be stronger when the authority is distant, ambiguous, or personalized; approval dependence is concentrated; disagreement carries personal risk; and version changes are weakly traceable. Convergence may be functional in routine or high-reliability work when alternatives, assumptions, and technical reservations are recoverable. Therefore, the mechanism must be observed rather than inferred from the hierarchy or consensus alone.

Brazilian organizational settings constitute a theoretically relevant context for future validation rather than an assumed model demonstration. Power distance, relational authority, concentrated ownership, subsidiary dependence, and informal negotiation practices may strengthen, weaken, or redirect the different stages of the cascade. Their effects should be examined comparatively and treated as empirical questions rather than inferred from national culture alone.

Because the CCIF has not yet been empirically validated, its propositions are expected relationships, and its indicators are candidate operational definitions, not established measures. Validation should proceed cumulatively: refine definitions and coding rules, establish independent materiality ratings and inter-rater reliability, prospectively register authority-specific Approval Codes, observe transmission, version trajectories, recoverability, and multiple exposure routes, test temporal ordering and rival explanations, and only afterward examine safeguards and generalization. No global reflective CCIF scale has been proposed.

A feasible first study would prospectively examine bounded, multi-layer decision episodes. Before focal edits, participants registered conditional Approval Codes for a specified authority and domain. Independent, outcome-blind coders identified material knowledge items and coded every version transition for faithful condensation, correction, displacement, fidelity loss, and recoverability. Exposure was assessed across documents, meetings, technical

channels, and direct communication. Confirmatory claims would require acceptable reliability, temporal ordering, directional comparison of aligned and misaligned items, and tests against evidence quality, time pressure, space limits, upward filtering, impression management, and common-source explanations.

Table 6 - Staged Empirical Validation Program for CCIF

Phase	Primary question	Recommended method	Decision criterion
1. Refinement and observability	Are the constructs distinct, and are their traces identifiable?	Focused scoping review, expert review, cognitive interviews, and multiple cases	Stable definitions and a replicable coding protocol
2. Measurement and discriminant validity	Can materiality, Approval Codes, version transitions, recoverability, and exposure be reliably coded as distinct entities?	Blind double coding, inter-rater reliability, cognitive interviews, and prospective vignette prediction	Reliable coding and out-of-sample prediction without a global CCIF score
3. Process and incremental validity	Do the stages unfold as proposed and add to the explanatory value?	Longitudinal document analysis, process tracing, and multilevel models with rival explanations	Temporal evidence and incremental prediction
4. Safeguard tests	Can targeted safeguards interrupt specific links in cascades?	Field experiments or quasi-experiments	Intervention effects on traceability, caveat survival, or alternative retention
5. Replication and boundaries	Where does the model travel and where does it weaken?	Comparisons across sectors, countries, ownership, and governance systems	Explicit limits of generalization

Source: Prepared by the author.

Table 7 - Candidate Documentary Indicators for Process Validation

Candidate indicator	Initial definition	Preliminary operationalization
Version convergence ratio	Semantic similarity among final versions from different functions after common executive comments.	Text similarity or embedding-based comparison was interpreted using qualitative coding.
Caveat attrition rate	The share of material caveats removed, softened, or displaced after the review.	See formula below.
Alternative survival rate	Share of initial alternatives remaining visible in the final decision.	See formula below.
Documented alternative disposition rate	Share of excluded alternatives whose evidence, rationale, and responsible authorities are preserved in the final record.	See formula below.
Unattributed authority rate	Frequency of authority-based constraints without identifiable formal sources.	See formula below.
Echo density	Concentration of identical expressions, assumptions, and arguments across middle-management review.	Lexical concentration combined with the coded repetition of attributed preferences.

Candidate indicator	Initial definition	Preliminary operationalization
Operational knowledge loss	Gap between risks known close to operations and risks recorded in the approved artifacts.	Matched comparison of operational records, interviews, and final decision documents.
Approval cycle burden	The review effort required before a decision is authorized.	Number of previews, revisions, executive hours, elapsed time and rework cost.
Transformation symbolism gap	The distance between innovation language and substantive changes in capability.	Differences between discourse intensity and changes in autonomy, experimental budget, evidence, and decision rights.

Source: Prepared by the author.

Four of the indicators above admit a direct preliminary formula, expressed as a ratio between zero and one:

Caveat Attrition Rate = caveats removed, softened, or displaced / initial caveats;
 Alternative Survival Rate = initial alternatives visible in the final artifact / initial alternatives;
 Documented Alternative Disposition Rate = excluded alternatives with preserved evidence, rationale, and authority / excluded alternatives; Unattributed Authority Rate = authority-based claims without an identifiable formal source / authority-based claims in the final artifact.

These formulas are preliminary item- and episode-level operational definitions, not validated scales, and are not interchangeable with one another. Therefore, they should not be combined into a global CCIF index. The exposure gap should be estimated separately using materiality-weighted eligible knowledge and all observed exposure routes. Causal attribution requires temporal correspondence between a prospectively recorded Approval Code, its application, and the resulting transformation.

The application of these indicators requires a preregistered coding protocol. Materiality should be assessed before coders know the outcome using independent raters and dimension-specific reliability. Every transition should distinguish faithful condensation and legitimate correction from the loss of material transformation. The document presence, potential recoverability, actual recovery, functional exposure, and authority recognition were coded separately. Reliability must be reported before disagreements are resolved, and items with insufficient agreement should be excluded from the confirmatory tests. Placebo, permutation, sensitivity, and aligned-versus-misaligned item tests should be used to identify findings that would defeat, rather than merely illustrate, the model.

10. CONCLUSIONS

CCIF formalizes how organizational knowledge may be deformed without deliberate falsification: attributed expectations become approval rules, middle layers echo those rules,

caveats and alternatives disappear, silence is misread as consensus, and the final artifact preserves only part of what the organization knew. The model does not consider hierarchy or alignment as inherently dysfunctional. Convergence can support reliable execution; however, risk arises when the same architecture governs exploration and demands premature certainty from unfamiliar ideas. Therefore, knowledge governance must preserve traceability, alternatives, uncertainty, and technical reservations while maintaining execution discipline. The practical challenge is to build a dual architecture in which delivery does not suppress the contestability required for learning and for adaptation.

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