Beyond Unitary Organizations:

Why Multi-level Technology Acceptance Research Requires Organizational Boundary-Crossing Contexts

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Abstract

The study of technology acceptance has reached a critical juncture following Venkatesh et al.'s (2016) call for multi-level research to understand cross-level interactions in technology adoption. However, traditional organizational contexts confound the multi-level effects that researchers seek to understand because individual, group, and organizational interests are typically aligned. This paper argues that boundary-crossing organizational contexts—temporary organizations, joint ventures, and inter-organizational collaborations—provide natural experiments in multi-level dynamics that reveal phenomena invisible in unitary organizational research. Building on MacVaugh and Schiavone's (2010) innovation diffusion framework, this paper develops a theoretical foundation for understanding technology acceptance in complex organizational environments where competing interests and multi-level agency problems become visible. The analysis demonstrates why traditional UTAUT research has struggled to identify consistent multi-level effects and outlines a research agenda for advancing technology acceptance theory through the study of boundary-crossing organizational contexts.

I Introduction

The study of technology acceptance has reached a critical juncture. Venkatesh, Thong, and Xu's (2016) comprehensive synthesis of the Unified Theory of Acceptance and Use of Technology (UTAUT) literature revealed both the theory's remarkable success and its fundamental limitations. While UTAUT has generated over 1,200 citations and demonstrated robust explanatory power across diverse contexts, the authors identified a crucial gap: the need for multi-level research that examines how individual, group, and organizational factors interact to influence technology acceptance.

Venkatesh et al.（2016, p.346）explicitly called for researchers to “theorize the cross-level influences of the environment factors, the organization factors, and the location factors” and to “conduct multi-level research to empirically examine the impacts of these contextual factors.” Their proposed multi-level framework represents a significant theoretical advancement, acknowledging that technology acceptance cannot be fully understood through individual-level analysis alone.

However, this paper argues that the traditional organizational contexts in which UTAUT research has been conducted are fundamentally unsuited to revealing the multi-level dynamics that Venkatesh and colleagues seek to understand. In unitary organizations—where employees share common organizational goals, reporting structures, and performance incentives—individual, group, and organizational levels tend to be aligned, creating what we term “confounded multi-level effects.” This alignment obscures the very mechanisms that multi-level theory seeks to illuminate.

This theoretical limitation has profound implications for technology acceptance research. If we cannot clearly distinguish between levels of analysis because they are naturally aligned, how can we understand when and why multi-level factors matter? How can we identify the conditions under which cross-level interactions become critical determinants of technology acceptance or rejection?

The solution, this paper contends, lies in studying technology acceptance in organizational boundary-crossing contexts—temporary organizations, joint ventures, inter-organizational collaborations, and start-ups—where individual, group, and organizational goals diverge, creating natural experiments in multi-level dynamics. In these contexts, the agency problems and competing interests that remain hidden in traditional organizational research become visible, revealing technology acceptance patterns that single-level models cannot explain.

Building on MacVaugh and Schiavone’s（2010）multi-level framework for innovation diffusion, this paper develops a theoretical argument for why boundary-crossing organizational contexts are essential for advancing multi-level technology acceptance theory. Through analysis of existing literature and illustration with empirical examples, we demonstrate how these contexts reveal the limitations of current UTAUT research and point toward a more sophisticated understanding of technology acceptance in complex organizational environments.

Ⅱ The Problem with Traditional Organizational Contexts

The challenge facing multi-level technology acceptance research runs deeper than methodological complexity—it reflects a fundamental theoretical problem with the organizational contexts typically studied. To understand why Venkatesh et al.'s (2016) call for multi-level research has proven difficult to operationalize, we must examine the nature of the organizations in which UTAUT studies are conducted.

The Unitary Organization Assumption

Traditional UTAUT research has predominantly focused on what we term "unitary organizations"—established firms with clear hierarchies, shared goals, and aligned incentive structures. In these contexts, employees at different levels of the organization theoretically work toward common objectives: individual performance contributes to group success, which in turn supports organizational effectiveness. This alignment creates what Burton-Jones and Gallivan (2007, p. 658) describe as "nested levels" where "higher-level phenomena emerge from, but are not reducible to, lower-level phenomena."

While this nested structure appears ideal for multi-level analysis, it creates a fundamental confounding problem. When individual, group, and organizational interests are largely aligned, it becomes difficult to isolate the independent effects of each level. Does an employee adopt a new technology because of individual performance expectations, group norms, or organizational mandates? In unitary organizations, these factors often point in the same direction, making causal attribution problematic.

The Confounding Problem

Consider a typical UTAUT study in a traditional corporation implementing a new enterprise system. Individual employees are motivated to adopt the technology to maintain job performance; work groups encourage adoption to meet collective targets; and the organization provides training and support to ensure implementation success. All three levels operate in concert, creating what appears to be strong multi-level effects but may simply reflect aligned interests rather than true cross-level interactions.

This confounding manifests in several ways:

Methodological Confounding: Individual-level measures (performance expectancy, effort expectancy) become proxies for organizational-level factors (management support, resource allocation) because both are directed toward the same outcome.

Theoretical Confounding: Social influence from peers reinforces rather than conflicts with

organizational directives, making it impossible to determine which level of analysis provides the primary explanatory power.

Temporal Confounding : Implementation stages that appear to demonstrate changing multi-level dynamics may simply reflect the natural progression of aligned interests rather than evolving cross-level interactions.

The Limits of Current Multi-level Research

Frambach and Schillewaert's (2002) influential framework for multi-level innovation adoption exemplifies both the promise and limitations of current approaches. Their model elegantly demonstrates how organizational facilitators, social influences, and individual characteristics interact to drive technology adoption. However, their empirical applications have consistently been conducted in contexts where these factors are fundamentally aligned—organizations implementing technologies that serve clear organizational purposes with management support and employee incentives pointing in the same direction.

Similarly, Burton-Jones and Gallivan's (2007) sophisticated multi-level framework for system usage acknowledges the importance of cross-level effects but relies on organizational contexts where "system usage that benefits individuals is also likely to benefit groups and organizations" (p. 664). This assumption of aligned interests, while reasonable for many organizational settings, limits the framework's ability to reveal the true nature of multi-level dynamics.

Hidden Agency Problems

The theoretical problem runs even deeper than methodological challenges. In unitary organizations, agency problems—situations where agents (employees) may have interests that diverge from principals (organizations)—are typically managed through organizational design, incentive alignment, and cultural integration. While these mechanisms are crucial for organizational effectiveness, they obscure the very conflicts of interest that make multi-level analysis theoretically interesting.

When individual and organizational interests are successfully aligned, technology acceptance becomes a relatively straightforward optimization problem. Employees adopt technologies that help them perform better, which serves organizational objectives. The interesting theoretical questions arise when these interests diverge: What happens when technology that benefits the organization imposes costs on individuals? How do group dynamics evolve when different organizational stakeholders have competing interests in technology outcomes?

The Need for Divergent Contexts

MacVaugh and Schiavone (2010) recognized this limitation in their analysis of innovation diffusion, arguing that non-adoption—often ignored in traditional adoption studies—reveals critical dynamics that remain hidden when adoption is assumed to be the natural outcome. They demonstrated how "limits to diffusion" emerge from conflicts between individual, community, and market-level interests, suggesting that understanding innovation requires examining contexts where these levels diverge rather than align.

Building on this insight, we argue that meaningful multi-level technology acceptance research requires organizational contexts where individual, group, and organizational interests naturally diverge, creating the conditions under which cross-level interactions become visible and theoretically interesting. These contexts exist in abundance in the modern economy, but they have been largely ignored by mainstream technology acceptance research.

Ⅲ Boundary-Crossing Organizations as Natural Experiments

The solution to the confounding problem in multi-level technology acceptance research lies not in more sophisticated analytical techniques, but in studying fundamentally different organizational contexts. Boundary-crossing organizations—organizational forms that span traditional organizational boundaries and involve multiple stakeholders with potentially divergent interests—provide natural experiments in multi-level dynamics that reveal phenomena invisible in unitary organizational contexts.

Defining Boundary-Crossing Organizations

Boundary-crossing organizations encompass a variety of organizational forms characterized by three key features: (1) multiple organizational identities and loyalties among participants, (2) temporary or project-based structures that create time-bounded relationships, and (3) goal divergence between individual, group, and organizational levels. These include temporary organizations (Burke and Morley, 2016), joint ventures, strategic alliances, inter-organizational collaborations, consortium projects, and certain types of start-ups.

Unlike traditional organizations where members share a single organizational identity and presumably aligned interests, boundary-crossing organizations bring together individuals who maintain primary loyalties to different "home" organizations while collaborating on shared objectives. This creates inherent tensions between local optimization (serving home organization interests) and collective optimization (serving collaborative project interests).

Temporary Organizations as Exemplars

Temporary organizations represent perhaps the purest form of boundary-crossing context for technology acceptance research. As Burke and Morley（2016, p. 1241）define them, temporary organizations are "a set of organizationally diverse parties collaborating on a complex task over a limited time period." Construction projects, film productions, consulting engagements, and disaster response teams all exemplify this organizational form.

In temporary organizations, technology acceptance decisions become complex multi-level phenomena because different levels of analysis have genuinely different objectives：

Individual Level： Professionals maintain careers and reputations that extend beyond the temporary organization. Their technology adoption decisions must consider not only immediate project requirements but also skill development, professional networks, and future employability in their permanent career contexts.

Group Level： Project teams must coordinate effectively to deliver on temporary organization objectives, but team members represent different organizational cultures, standards, and technological preferences from their home organizations.

Organizational Level： The temporary organization itself has project-specific goals, but it exists within a broader ecosystem of permanent organizations（clients, contractors, regulators）whose interests may conflict with optimal project outcomes.

Natural Experiments in Multi-level Dynamics

Boundary-crossing organizations create what Bakker（2010, p. 468）describes as "natural experiments" in organizational behavior because they "isolate particular organizational phenomena by temporarily bracketing them from their usual organizational context." For technology acceptance research, this isolation is theoretically invaluable because it reveals multi-level dynamics that remain confounded in traditional organizational settings.

Consider the adoption of project management information systems in large construction projects—a context where multiple contractors, consultants, and client organizations must collaborate using shared technology platforms. Unlike enterprise system implementations in single organizations, project management system adoption in construction projects reveals genuine conflicts between levels：

Individual contractors may resist detailed progress reporting that benefits project coordination but exposes competitive information to rivals.

Contractor organizations may prefer their own established systems that integrate with their permanent organizational processes rather than project-specific systems that require

additional training and data migration.

The temporary project organization requires integrated information flows for effective coordination, but lacks the authority to mandate adoption across independent organizational participants.

The client organization desires transparency and control but may not fully understand the operational implications for contractors and consultants.

Agency Theory in Action

These contexts make visible the agency problems that remain hidden in traditional organizational research. In temporary organizations, the classical agency relationship between principals and agents becomes a complex multi-principal, multi-agent problem where different stakeholders serve as both principals and agents depending on the relationship in question（Goodman and Goodman, 1976）.

Technology acceptance in these contexts cannot be understood through individual-level analysis because adoption decisions are embedded in webs of competing organizational interests. An individual engineer's decision to use or resist a collaborative technology reflects not only personal preferences and capabilities（traditional UTAUT factors）but also strategic considerations about information sharing, competitive positioning, and organizational loyalty that operate at group and organizational levels.

Start-ups and Entrepreneurial Contexts

Start-up organizations provide another powerful example of boundary-crossing contexts. Early-stage ventures typically involve participants with divided loyalties—founders maintaining other professional commitments, employees considering multiple career options, investors with portfolio-level concerns, and advisors with their own strategic interests.

Technology adoption decisions in start-ups often reflect these competing interests：founders may prefer technologies that demonstrate innovation and attract investment, employees may favor tools that build transferable skills, and investors may push for proven solutions that reduce risk. The resulting technology acceptance patterns reveal multi-level dynamics that remain invisible when studying technology adoption in established organizations with aligned interests.

Inter-organizational Collaborations

Strategic alliances, joint ventures, and other inter-organizational collaborations create similar conditions for natural experiments in multi-level technology acceptance. Participants in these arrangements must balance competing demands from their home organizations while

contributing to collaborative objectives.

Technology acceptance in these contexts often involves explicit negotiations between organizational interests that remain implicit in traditional organizational settings. Should collaborating organizations adopt common platforms that facilitate coordination but require abandoning proprietary systems? How do power dynamics between collaborating organizations influence technology choices? These questions reveal the political dimensions of technology acceptance that multi-level theory seeks to understand but that remain hidden in unitary organizational contexts.

Methodological Advantages

Beyond their theoretical value, boundary-crossing organizations offer significant methodological advantages for multi-level research. Because different levels of analysis have genuinely different objectives, researchers can more clearly isolate the effects of individual, group, and organizational factors. The natural variation in interests and incentives provides better identification of causal mechanisms than post-hoc statistical controls in traditional organizational settings.

Furthermore, the temporary nature of many boundary-crossing organizations allows researchers to observe complete technology adoption cycles within reasonable timeframes, something difficult to achieve in studies of permanent organizations implementing enterprise-wide systems over multi-year periods.

Ⅳ Theoretical Framework: Multi-level Innovation Diffusion in Boundary-Crossing Organizations

The limitations of traditional technology acceptance models in boundary-crossing organizational contexts necessitate a more sophisticated theoretical framework. This section develops an integrated multi-level framework that builds on MacVaugh and Schiavone's (2010) innovation diffusion model while incorporating insights from agency theory and temporary organization research to explain technology acceptance in boundary-crossing contexts.

Beyond UTAUT: The Need for Multi-Domain Analysis

While UTAUT and its extensions have provided valuable insights into individual-level technology acceptance, their theoretical foundations assume relatively stable organizational contexts with aligned interests. Venkatesh et al.'s (2016) call for multi-level research recognizes this limitation but does not address the fundamental problem: traditional organizational con-

texts confound the very multi-level effects that researchers seek to understand.

MacVaugh and Schiavone（2010）offer a more promising starting point with their multi-level framework for innovation diffusion that explicitly acknowledges conflicts between different levels of analysis. Their model identifies three "conditions"—technological, social, and learning—that operate across three "domains"—individual, community, and market/industry. Crucially, their framework allows for non-adoption as a rational outcome when conditions and domains are misaligned, providing theoretical space for the conflicts of interest that characterize boundary-crossing organizations.

The Three-Domain Framework in Boundary-Crossing Contexts

In boundary-crossing organizations, MacVaugh and Schiavone's three domains take on particular significance because they correspond to genuinely different organizational identities and interests:

Individual Domain: Professionals operating in boundary-crossing contexts must manage multiple identities—their role in the temporary organization, their position in their permanent "home" organization, and their broader professional career considerations. Technology adoption decisions in this domain reflect not only immediate task requirements but also long-term career implications, skill development needs, and professional network effects that extend beyond the boundary-crossing organization.

Community Domain: The community domain in boundary-crossing contexts becomes particularly complex because multiple communities operate simultaneously. Project teams form temporary communities with their own norms and practices, but team members also maintain membership in their home organizational communities and broader professional communities. Technology acceptance must therefore navigate potentially conflicting community expectations.

Market/Industry Domain: In boundary-crossing contexts, the market/industry domain includes not only the immediate project or collaborative context but also the broader ecosystem of organizations, competitors, and institutional actors that influence technology choices. Unlike traditional organizational contexts where market pressures are mediated through organizational strategy, boundary-crossing contexts often expose participants directly to competing market pressures.

Multi-Level Agency Problems

The key theoretical insight that emerges from applying this framework to boundary-crossing organizations is the prevalence of multi-level agency problems. Traditional agency theory

focuses on principal-agent relationships within hierarchical organizations. However, boundary-crossing organizations create what we term "multi-principal, multi-agent" problems where individuals simultaneously serve as agents for multiple principals with potentially conflicting interests.

Consider a senior engineer working on a temporary construction project who must decide whether to adopt a new collaborative technology platform. This individual serves as:

- An **agent** for the temporary project organization (principal), expected to contribute to project success
- An **agent** for their home contracting organization (principal), expected to protect proprietary information and maintain company standards
- An **agent** for their professional community (principal), expected to advance best practices and maintain professional competence
- A **principal** in their own right, managing their career trajectory and professional development

Each of these relationships creates different incentives regarding technology adoption, and these incentives may conflict. The temporary project benefits from standardized information sharing, the home organization prefers maintaining established systems and protecting competitive information, the professional community values innovation and learning, and the individual seeks to balance all these concerns while advancing their career.

The Three Conditions in Multi-Agency Contexts

MacVaugh and Schiavone's three conditions—technological, social, and learning—take on new complexity in multi-agency contexts:

Technological Conditions: Technology evaluation must consider not only immediate functionality but also compatibility with multiple organizational systems, competitive implications of information sharing, and long-term strategic positioning across different organizational relationships. The technological complexity that MacVaugh and Schiavone identify as a barrier to adoption becomes even more problematic when individuals must master technologies that serve different organizational purposes.

Social Conditions: Social influence operates simultaneously across multiple social contexts with potentially conflicting norms. An individual may face pressure from project teammates to adopt new collaborative technologies while receiving contrary pressure from home organization colleagues to maintain established practices. These competing social influences create the conditions for resistance that MacVaugh and Schiavone identify but that remain largely

invisible in traditional organizational research.

Learning Conditions: Learning requirements multiply in boundary-crossing contexts because individuals must acquire not only technical competence but also understanding of how technology adoption affects multiple organizational relationships. The absorptive capacity constraints that Cohen and Levinthal (1990) identify become more binding when learning must serve multiple organizational contexts simultaneously.

Dynamic Multi-Level Interactions

Unlike traditional models that assume relatively stable relationships between individual, group, and organizational factors, the boundary-crossing context creates dynamic interactions that evolve over time. Temporary organizations have distinct life cycles (formation, norming, performing, dissolving) that change the relative importance of different levels and domains.

During project formation, individual domain concerns may dominate as participants negotiate roles and establish working relationships. As the temporary organization develops shared norms and practices, community domain factors become more influential. Near project completion, market/industry domain concerns may resurface as participants consider how project outcomes affect their permanent organizational relationships.

This temporal dynamic helps explain why single-point-in-time studies of technology acceptance often fail to capture the full complexity of adoption and non-adoption patterns. The multi-level effects that Venkatesh et al. (2016) seek to understand are not static but evolve as the relative salience of different domains changes over the organizational life cycle.

V Implications for UTAUT Research: Revealing Hidden Multi-Level Dynamics

The theoretical framework developed in the previous section has profound implications for how UTAUT research should evolve to capture the multi-level dynamics that Venkatesh et al. (2016) identified as critical for advancing technology acceptance theory. This section outlines specific ways that studying boundary-crossing organizational contexts can address current limitations and reveal phenomena invisible in traditional organizational research.

Deconfounding Multi-Level Effects

The primary contribution of boundary-crossing organizational contexts lies in their ability to deconfound multi-level effects that remain entangled in traditional organizational set-

tings. When individual, group, and organizational interests naturally diverge, researchers can observe the independent operation of factors that appear unified in unitary organizations.

Consider the construct of "facilitating conditions" in UTAUT—defined as "the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system" (Venkatesh et al., 2003, p. 453). In traditional organizational research, facilitating conditions typically operate uniformly: organizations either provide support infrastructure or they do not. However, in boundary-crossing contexts, facilitating conditions become multi-dimensional and potentially conflicting.

In a temporary project organization, an individual contractor might perceive strong facilitating conditions for adopting project management software from the temporary organization (training provided, technical support available, organizational mandate clear) while simultaneously perceiving weak facilitating conditions from their permanent organization (no integration with existing systems, additional administrative burden, potential competitive exposure). This divergence allows researchers to examine how conflicting facilitating conditions affect adoption decisions—a question that cannot be meaningfully studied in traditional organizational contexts.

Revealing the Political Dimensions of Technology Acceptance

Traditional UTAUT research has largely ignored the political dimensions of technology acceptance, treating adoption decisions as primarily technical and individual choices. However, as MacVaugh and Schiavone (2010) demonstrate in their analysis of innovation non-adoption, political considerations—conflicts of interest, power dynamics, and strategic behavior—often dominate purely technical considerations.

Boundary-crossing organizations make these political dimensions visible because they create contexts where technology adoption has clear winners and losers across different organizational levels. A project collaboration platform that increases transparency and coordination may benefit the temporary organization's objectives while disadvantaging individual contractors who prefer to maintain information asymmetries that provide competitive advantages.

These political dynamics help explain phenomena that traditional UTAUT models struggle to address: Why do technically superior solutions sometimes fail to gain adoption? Why do organizations sometimes persist with inferior technologies despite available alternatives? Why do the same individuals exhibit different technology acceptance patterns in different organizational contexts?

Understanding Resistance as Multi-Level Phenomenon

Lapointe and Rivard's (2005) influential work on resistance to information technology implementation provides a foundation for understanding how boundary-crossing contexts reveal multi-level resistance dynamics. Their model identifies resistance as emerging from perceived threats to individual or group interests, but their empirical applications focus primarily on resistance within single organizations.

Boundary-crossing contexts reveal more complex resistance patterns because threats operate simultaneously across multiple levels and domains. An individual may support technology adoption at the project level while resisting it at the organizational level, or may resist adoption individually while supporting it as a group member. These apparent contradictions reflect rational responses to multi-level agency problems rather than irrational resistance to technological change.

Understanding resistance as a multi-level phenomenon has important implications for implementation strategies. Traditional approaches that focus on individual-level interventions (training, communication, incentives) or organizational-level interventions (mandates, resource allocation, cultural change) may fail in boundary-crossing contexts where resistance operates across multiple levels simultaneously.

Temporal Dynamics and Technology Acceptance Evolution

The temporary nature of many boundary-crossing organizations provides unique opportunities to study how technology acceptance patterns evolve over organizational life cycles. Unlike traditional organizational research that typically captures technology acceptance at single points in time, boundary-crossing contexts allow researchers to observe complete adoption cycles within manageable research timeframes.

This temporal perspective reveals that technology acceptance is not a static decision but an evolving process that changes as organizational contexts and relationships develop. Early-stage resistance based on uncertainty and competing loyalties may give way to acceptance as shared norms develop, only to reemerge as project completion approaches and participants refocus on their permanent organizational relationships.

These temporal dynamics help explain why traditional UTAUT research sometimes finds inconsistent results across studies and contexts. What appears to be measurement error or contextual variation may actually reflect the natural evolution of multi-level relationships over time.

Expanding the Scope of Technology Acceptance Theory

Perhaps most importantly, studying boundary-crossing organizational contexts expands

the scope of technology acceptance theory beyond its current focus on individual adoption decisions within stable organizational settings. The multi-level agency problems, political dynamics, and temporal evolution observed in these contexts suggest that technology acceptance is fundamentally an organizational and inter-organizational phenomenon that cannot be fully understood through individual-level analysis.

This expanded scope aligns with broader trends in organizational research toward understanding complex, networked, and temporary organizational forms that increasingly characterize the modern economy. As traditional organizational boundaries become more porous and collaborative relationships more common, the boundary-crossing contexts examined in this paper may become more representative of technology acceptance challenges than the traditional organizational contexts that have dominated UTAUT research.

Ⅵ Conclusion and Research Agenda

This paper has argued that the future of multi-level technology acceptance research lies not in more sophisticated analysis of traditional organizational contexts, but in studying fundamentally different organizational forms where multi-level dynamics become visible and theoretically meaningful. Venkatesh et al.'s（2016）call for multi-level UTAUT research identified a crucial gap in technology acceptance theory, but the organizational contexts in which UTAUT research has traditionally been conducted are ill-suited to revealing the cross-level interactions that multi-level theory seeks to understand.

Theoretical Contributions

The primary theoretical contribution of this paper is the identification of boundary-crossing organizational contexts as natural experiments in multi-level technology acceptance dynamics. By extending MacVaugh and Schiavone's（2010）multi-level innovation diffusion framework to technology acceptance research, we have demonstrated how temporary organizations, joint ventures, strategic alliances, and similar organizational forms create conditions where individual, group, and organizational interests naturally diverge, revealing phenomena that remain hidden in traditional organizational research.

The multi-level agency framework developed in this paper provides a theoretical foundation for understanding why technology acceptance patterns in boundary-crossing contexts differ systematically from those observed in unitary organizations. When individuals serve as agents for multiple principals with potentially conflicting interests, technology adoption

decisions become complex strategic choices that cannot be understood through individual-level analysis alone.

Research Agenda

The theoretical framework developed in this paper suggests several promising directions for future research:

Empirical Validation Studies: The most immediate need is for empirical studies that test the multi-level agency framework in various boundary-crossing organizational contexts. Comparative studies that examine the same technology adoption process in both traditional and boundary-crossing contexts would be particularly valuable.

Longitudinal Process Studies: The temporal dynamics identified in this paper require longitudinal research designs that can capture how technology acceptance patterns evolve over organizational life cycles. Process studies that follow temporary organizations from formation through dissolution would provide insights into how multi-level relationships change over time.

Cross-Context Comparative Research: Systematic comparison of technology acceptance patterns across different types of boundary-crossing organizations would help identify which aspects of the theoretical framework generalize across contexts and which are specific to particular organizational forms.

Implementation Strategy Development: Action research studies that develop and test implementation strategies specifically designed for boundary-crossing contexts would bridge the gap between theory and practice while providing insights into how multi-level agency problems can be managed rather than eliminated.

Conclusion

The study of technology acceptance stands at a crossroads. Traditional approaches have reached the limits of their explanatory power, while new organizational forms and technologies create challenges that existing theories cannot adequately address. This paper has argued that the path forward lies not in incremental refinements to existing models, but in studying fundamentally different organizational contexts that reveal the multi-level dynamics essential for understanding technology acceptance in complex organizational environments.

Boundary-crossing organizations provide natural experiments in multi-level technology acceptance that can advance both theory and practice. By studying these contexts systematically, researchers can develop more sophisticated understanding of how individual, group, and organizational factors interact to influence technology adoption decisions, while practitio-

ners can develop more effective strategies for implementing technologies in complex organizational environments.

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