

How the U.S. Car Rental Industry Talks About Innovation: A Multi-Source Media Analysis of AI-Enabled Service Transformation

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ABSTRACT

This study examines how organizations in the U.S. car rental industry publicly frame and narrate artificial intelligence (AI)-enabled service innovation and what these narratives reveal about dynamic capabilities in asset-intensive service settings. The objective is to analyze how innovation is communicated, justified, and contested across multiple public arenas, and to develop a theoretically grounded understanding of the relationship between public narrative and organizational capability. The study employs a qualitative thematic analysis of multi-source public media data, including newspaper reports, trade publications, corporate investor communications, social media, and business television transcripts published between 2019 and 2026. Applying Dynamic Capabilities Theory as an interpretive lens, the analysis identifies four higher-order themes: sensing, seizing, transforming, and capability tensions. The results show that firms develop divergent sensing and seizing orientations under shared technological and competitive pressures, with some organizations prioritizing operational efficiency and others foregrounding customer experience. Persistent misalignment between seizing and transforming activities, combined with the erosion of feedback mechanisms under increasing automation, creates conditions of algorithmic insulation in which error-correction capacity is progressively diminished. The paper concludes that public innovation discourse operates as an observable signal of capability enactment, extending Dynamic Capabilities Theory beyond its traditional focus on internal routines. These findings contribute to research on AI-enabled service innovation in consumer-facing industries and highlight interpretive framing, organizational redesign, and feedback architecture as determinants of adaptability in AI-mediated service systems. Practical implications address how industry operators and regulators can use discourse patterns to identify capability development trajectories and governance failures before they materialize as operational crises.

Keywords: Artificial intelligence (AI); Dynamic capabilities; AI-enabled service innovation; Digital transformation; Media discourse

INTRODUCTION

This study examines how organizations in the U.S. car rental industry publicly frame artificial intelligence (AI)-enabled service innovation and what these narratives reveal about the enactment of dynamic capabilities. As AI-enabled platforms are embedded across car rental operations, including fleet pricing, demand forecasting, vehicle return, and damage detection, the ways in which organizations communicate these transformations to external audiences have become a significant site of competitive signaling, legitimacy work, and capability disclosure [13]. The research question guiding this analysis is: what do public innovation narratives in the U.S. car rental industry reveal about the dynamic capabilities of the organizations producing them?

This question is motivated by a dual observation. First, the car rental sector is undergoing one of the most rapid and visible technology transformations in the U.S. service economy. Major operators including Hertz, Enterprise, and Avis Budget Group have invested in AI-enabled fleet management, automated check-in, algorithmic pricing, and digital customer experience platforms. These investments are extensively narrated in

corporate earnings calls, trade publications, regulatory filings, and consumer-facing communications. Second, the academic literature on dynamic capabilities has focused primarily on internal organizational processes and routines [14, 6], with limited attention to how firms strategically communicate capability development to external audiences [4]. Public innovation narratives are treated as organizational outputs rather than analytical objects in their own right.

This paper addresses that gap by treating public media discourse as both a data source and an explanatory lens. By systematically analyzing how car rental firms frame AI adoption, the study generates insights into the sensing, seizing, and transforming orientations that characterize different competitive postures in a technology-transforming service sector. The remainder of the paper is organized as follows: Section 2 presents the theoretical framework. Section 3 describes the methodology. Section 4 reports findings organized around four higher-order themes. Section 5 provides discussion. Section 6 concludes.

THEORETICAL FRAMEWORK

Dynamic Capabilities Theory [14] provides the foundational framework for this analysis. Teece et al.'s [14] original formulation identified dynamic capabilities as the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. Subsequent development by Eisenhardt and Martin [6] emphasized that dynamic capabilities manifest in specific organizational routines and processes, while Helfat and Peteraf [7] extended the framework to address the micro-cognitive foundations of capability development. Teece's [13] elaboration of sensing, seizing, and transforming as the three pillars of dynamic capability provides the analytical structure that this paper applies to public narrative data.

The study's theoretical contribution lies in extending this framework to treat public innovation discourse as an observable signal of capability enactment. Drawing on Cornelissen et al.'s [4] analysis of communication, sensemaking, and materiality, and on Laamanen and Vaara's [9] treatment of strategy as narrative practice, this paper argues that the content and structure of public innovation narratives reflect the underlying capability orientations of the organizations producing them. Organizations that consistently narrate sensing activities such as market monitoring, technology assessment, and customer feedback integration are exhibiting in public discourse the same orientations that Dynamic Capabilities Theory predicts will be associated with superior adaptive performance [13, 7].

The study also draws on service innovation research. Wirtz et al. [21] and Huang and Rust [8] document the governance challenges that AI-enabled service automation creates for customer-facing industries, identifying automation failure and error escalation as critical risks in environments where human oversight is progressively removed. Vargo and Lusch's [16] service-dominant logic provides a complementary lens for understanding how value co-creation shifts under automation, while Vial's [19] synthesis of digital transformation research identifies the organizational and strategic dimensions of technology-driven service change. Cohen and Kietzmann's [3] and Acquier et al.'s [1] treatments of the sharing economy and platform-based mobility provide the sectoral context for understanding how AI adoption is reshaping car rental as an industry.

The paper also applies elements of organizational sensemaking theory [19, 20] and technology duality frameworks [11] to interpret how firms navigate the simultaneous pressures of automation opportunity and governance risk. Parasuraman et al.'s [12] model of human interaction with automation provides a theoretical basis for analyzing the automation oversight tensions documented in the findings. Orlikowski and Brynjolfsson et al. [11, 2] contribute theoretical grounding for the complementarity argument, namely that technology value depends on complementary organizational changes, which the paper applies to analyze the gap between technology seizing and capability transformation in car rental firms.

METHODOLOGY

The study employs a qualitative thematic analysis of multi-source public media data produced by and about U.S. car rental industry organizations between 2019 and 2026. The multi-source design is deliberate: by combining data from multiple distinct public arenas including corporate investor communications, trade publications, mainstream news media, and consumer review platforms. The analysis captures the different audiences for which

innovation narratives are constructed and the different rhetorical purposes they serve [4]. The sources analyzed include corporate earnings call transcripts, investor presentations, trade publication analyses, newspaper and broadcast journalism, social media commentary, and consumer review data.

Specific data sources include Hertz Global Holdings investor communications [26, 27], Avis Budget Group investor call transcripts [23], industry analyses published by Skift [30], reporting by Bloomberg [24], The New York Times [31], and The Wall Street Journal [32], consumer feedback reported by CNBC [25], J.D. Power satisfaction study commentary [29], the Hertz corporate blog [28], and U.S. court opinions cited in legal reporting on the Hertz vehicle theft dispute [33]. The data corpus spans a period of significant technology investment and operational disruption, capturing both pre-COVID capability signaling and post-COVID recovery innovation communication.

Thematic analysis followed the procedures outlined by Braun and Clarke, proceeding through six stages: familiarization, initial coding, code clustering, theme construction, theme review, and theme definition. Codes were generated inductively from the data before being mapped deductively onto the Dynamic Capabilities framework. The four higher-order themes, namely sensing orientations, seizing orientations, transformation tensions, and capability tensions, emerged from this dual-direction analysis. Trustworthiness was established through data triangulation across source types, member checking of thematic interpretations against original text, and systematic audit of coding decisions throughout analysis. All quoted material is drawn directly from verified primary sources.

FINDINGS

The analysis identifies four higher-order themes that characterize public innovation discourse in the U.S. car rental industry. Each theme aggregates multiple sub-themes and is illustrated with representative source quotations.

Sensing Orientations: Technology-Forward and Experience-Forward

The dominant sensing orientation evident across corporate communications is technology-forward capability monitoring, in which firms publicly signal their capacity to identify and evaluate AI-enabled opportunities before deploying them. Avis Budget Group exemplified this orientation in an investor call: "We're using advanced analytics to optimize fleet rotation and pricing decisions in ways that would have been impossible just three years ago" [23]. This framing constructs analytics adoption as the culmination of deliberate sensing work rather than reactive technology acquisition.

Bloomberg's industry reporting provides external validation of this sensing posture: "Car rental companies are increasingly relying on data and algorithms to manage fleets and set prices, representing a fundamental shift in how the industry operates" [24]. The convergence of internal and external sensing narratives suggests that major operators are successfully communicating a proactive technology orientation rather than a reactive one. However, sensing narratives diverge significantly when organized by competitive posture. Some firms foreground efficiency-oriented sensing, focused on identifying technologies that reduce labor cost and increase margin, while others foreground experience-oriented sensing, prioritizing technologies that reduce friction and increase customer satisfaction [3, 1].

Seizing Orientations: Efficiency-First and Experience-First

Seizing narratives document the resource allocation and organizational realignment decisions that translate sensing into deployment. Hertz Global Holdings explicitly framed digital partnerships as foundational to transformation: "Our partnership with Salesforce is designed to deliver a faster, more seamless rental experience for our customers" [27]. The investor presentation context of this claim is significant: it positions technology seizing as a competitive differentiator in a market where all major operators are making similar investments.

Divergent seizing orientations are most clearly visible in how firms frame the human-technology balance within their operational models. Enterprise-affiliated communications consistently narrate technology seizing as

augmenting human service capacity, while Hertz and Avis Budget Group communications frame seizing as enabling the progressive reduction of human touchpoints. The Hertz corporate blog exemplifies the latter: "We've deployed technology systems to ensure a consistent and transparent assessment process" [28], a framing that positions algorithmic authority as superior to human judgment without addressing the governance implications of that substitution.

Transforming Tensions: The Seizing-Transforming Gap

Transforming narratives document how firms communicate the organizational-level changes such as process redesign, capability development, and governance structure, required to realize value from deployed AI systems. The data reveals a systematic pattern in which seizing narratives outpace transforming narratives: firms communicate extensively about what they are deploying but minimally about how organizational capabilities and governance structures are being redesigned to govern the deployed systems effectively.

The Wall Street Journal's reporting on automated damage detection illustrates this gap: "Rental car companies are increasingly using automated systems with cameras and sensors to assess vehicle damage, reducing the role of human judgment" [32]. The transformation dimension omitted from this and similar narratives is the organizational redesign required to govern systems where human judgment is being progressively replaced: the exception-handling processes, escalation protocols, and accountability structures that distinguish effective automation governance from system adoption without oversight.

This pattern aligns with the broader theoretical literature on technology complementarity [11, 2]: the economic value of AI deployment depends on complementary organizational changes that are systematically under-narrated in public corporate discourse. The absence of transforming narrative is itself an analytically significant finding, suggesting that firms either have not yet developed the organizational capabilities required to govern their deployed systems or have chosen not to communicate those capabilities publicly.

Capability Tensions: Algorithmic Insulation and Governance Failure

The most distinctive finding of this analysis is the systematic documentation of capability tensions, which are situations in which the automation commitments implied by seizing narratives create governance failures that undermine the legitimacy of those same innovation claims. The most extensively documented case involves Hertz's automated theft reporting system, which generated false vehicle theft reports resulting in customer arrests. As reported by The New York Times: "Customers were arrested after Hertz mistakenly reported rental cars as stolen, a problem prosecutors said could have been avoided" [31]. U.S. court opinions cited in legal reporting documented the systemic nature of this failure: "Hertz lacked effective means of correcting errors once the vehicle was flagged as stolen" [33].

These failure narratives reveal the mechanism of algorithmic insulation, a condition in which automated systems become progressively shielded from corrective human feedback. As automation levels increase and human touchpoints are removed in pursuit of efficiency, the organizational capacity to detect and correct algorithm errors is simultaneously eroded. The CNBC consumer review data reinforces this pattern: "The rental experience is becoming more automated, but when things go wrong, there's nobody to help" [25]. J.D. Power's research provides structural context: "Lengthy wait times at the rental counter continue to be a key source of customer dissatisfaction" [29], a finding that reflects the operational tensions created when seizing outpaces transforming.

These narratives reveal that firms experiencing states of algorithmic insulation where feedback loops are diminished share a common structural characteristic: the organizational changes required to govern deployed systems have not kept pace with deployment. Leonard-Barton's [10] framework of core capabilities and core rigidities is directly applicable: the efficiency gains from automation create organizational rigidities that inhibit the adaptive responses required when automation fails. Davenport and Ronanki's [5] analysis of AI governance failures in service organizations identifies similar patterns, noting that successful AI adoption requires ongoing human oversight capacity rather than progressive automation without governance development.

DISCUSSION

Four implications emerge from this analysis. First, the study demonstrates that public innovation discourse is a theoretically consequential object of analysis rather than merely a communication output. By treating corporate earnings calls, trade publication narratives, and consumer feedback as windows into organizational capability orientations, the study generates insights into the sensing-seizing-transforming dynamic that would not be visible through traditional organizational studies methods. This finding extends Dynamic Capabilities Theory [14, 13] by proposing discourse as an observable signal of capability enactment.

Second, the systematic gap between seizing and transforming narratives documented in this study has direct implications for how AI adoption should be evaluated in asset-intensive service industries. The deployment of AI systems generates oversight demands that current organizational and environmental conditions are systematically failing to meet [21, 8]. The car rental case is instructive because the consequences of this gap are legally documented, directly attributable to specific governance failures, and irreversible in individual cases. The Hertz vehicle theft dispute is not an anomaly; it is the most visible manifestation of a structural pattern in which automation commitments outrun governance capabilities [12].

Third, the study's findings have implications for the theory of organizational legitimacy in technology transformation contexts. When firms narrate AI adoption without narrating the governance capabilities required to oversee it, they create a legitimacy gap that external events such as legal disputes, consumer failures, and regulatory scrutiny can expose. Cornelissen et al.'s [4] framework of communication and materiality in sensemaking provides theoretical grounding for this observation: the materiality of automation failures creates conditions in which previously established legitimacy narratives are destabilized by the evidence of capability gaps.

Fourth, the finding of divergent orientations, specifically efficiency-first versus experience-first, among major car rental operators with shared technology access raises important questions about the sources of strategic differentiation under AI adoption. Eisenhardt and Martin [6] and Helfat and Peteraf [7] predict that dynamic capabilities manifest differently across firms even when underlying routines are similar. This study confirms that prediction at the level of public discourse: firms operating in the same competitive environment, deploying similar technologies, produce meaningfully different innovation narratives that reflect genuinely different capability orientations. The implication for competitive strategy research is that discourse analysis provides a tractable method for mapping capability orientation differences that internal process research cannot easily access.

CONCLUSION

This study set out to examine what public innovation narratives in the U.S. car rental industry reveal about the dynamic capabilities of the organizations producing them. The analysis of multi-source media data produced four findings with both theoretical and practical significance.

The sensing-seizing-transforming framework of Dynamic Capabilities Theory [14] is confirmed as an analytically powerful lens for interpreting public innovation discourse. Firms produce consistent narrative signatures that reflect their underlying capability orientations: efficiency-oriented sensors produce efficiency-oriented seizing narratives, while experience-oriented sensors produce narratives that foreground service quality and customer experience. The systematic gap between seizing and transforming narratives, in which organizations communicate extensively about deployment and minimally about governance redesign, constitutes both a theoretical contribution and a practical warning.

The introduction of algorithmic insulation as a theoretical construct captures a dynamic not previously named in the Dynamic Capabilities literature: the progressive erosion of error-correction capacity that occurs when automation commitments outrun governance capability development. This construct addresses a gap identified by Wirtz et al. [21], Huang and Rust [8], and Parasuraman et al. [12] in the service automation literature by providing a mechanism-level explanation for why AI adoption in service industries generates systematic governance failures even in organizations with significant resources and sophisticated technology.

Future research should examine whether the discourse patterns identified in the car rental industry are generalizable across other asset-intensive consumer-facing service sectors, including hotel operations, airline services, and utility provision. Longitudinal analysis tracking how organizations' innovation narratives evolve before and after major operational failures would provide particularly valuable evidence for the theoretical claims advanced in this study. Empirical research testing the relationship between discourse-level capability signals and objective performance outcomes such as RevPAR equivalents in rental, customer satisfaction scores, and operational error rates would address the limitation of this study's exclusive reliance on public narrative data.

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