

EMPIRICAL ARTICLE

Breaking the Constraint Loop in B2G Environmental Services: Marketing Capabilities, Digital Conversion, and Cash-Cycle Conflicts

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Abstract

Environmental services are increasingly delivered through sustainability-critical B2G and B2B markets in which suppliers must demonstrate they can deliver credible environmental value in a contractual environment characterized by tender-based competition, high accountability, and long payment cycles. We still know too little about how procurement rules, legitimacy barriers, and cash-cycle conflicts shape the development of marketing capabilities in such settings. This study examines how these conditions influence the marketing strategy of a regional environmental service provider in China. The study uses a mixed-method single-case design, combining semi-structured interviews, internal archival records, a structured client survey, competitor benchmarking, and expert validation to analyze how external constraints affect capability development and market outcomes. The findings identify a constraint transmission mechanism in which procurement price pressure and delayed payments suppress firms' discretionary investment, leading to weakened digital conversion governance, customer relationship management discipline, and capabilities to articulate solutions and value-added. These capability deficits reduce differentiation, constrain transfer of legitimacy across regions, and reinforce dependence on familiar government channels. This study contributes a constraint-sensitive marketing capability framework for sustainability-oriented service markets, by showing how institutional access conditions, financial conflicts, and capability development interact in policy-shaped environmental services. It also offers actionable implications for legitimacy-transfer entry strategies, enterprise-customer development, solution-based selling, and closed-loop digital conversion systems.

KEYWORDS

environmental services; sustainability-oriented marketing; B2G procurement; marketing capabilities; digital conversion; value-based selling; China.

1 | INTRODUCTION

Environmental services and eco-industrial solutions are increasingly delivered through policy-shaped, sustainability-critical B2G and B2B

markets in which suppliers must demonstrate environmental value under tender-based competition, with long contracting cycles, and multi-stakeholder scrutiny (Leonidou et al. 2013, Crittenden et al. 2011). In these settings, marketing is not merely promotional activity. It is a capability configuration that allows firms to translate technical and environmental performance into credible value propositions, and to mobilize legitimacy with public sector and corporate buyers, and sustain renewal in high-accountability service systems (Day 1994, Vorhies and Morgan 2005, Morgan and Hunt 1994).

Recent research has expanded the sustainability debate beyond conventional market-orientation arguments, by emphasizing such concepts

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as ESG governance, sustainable supply chain management, and practice-based sustainability learning (Boyer 2024, Purvis and Fernandez 2024, Lissillour and Silva 2024, Lissillour 2024, Vavrina and Drdla 2024). This broader dialogue is important for environmental services because the value being marketed is inseparable from governance, accountability, and operational credibility. In parallel, studies of hybrid organizations and policy-market coordination in China show that organizations operating under multiple institutional cultures often rely on selective coupling, negotiated compliance, and locally embedded coordination arrangements rather than pure market rationality (Wang 2024, Weng et al. 2025). These insights suggest that environmental service firms cannot be analyzed as standard service marketers alone; they are simultaneously market actors, governance intermediaries, and legitimacy seekers.

Two gaps motivate this study. Firstly, digital marketing and digital transformation research provides influential frameworks for designing digital engagement and data-enabled marketing processes. However, much of this work remains under-specified for sustainability-critical B2G/B2B services where proof requirements are high and procurement rules constrain behavior (Kannan and Li 2017, Homburg and Wielgos 2022, Payne and Frow 2005, Trainor et al. 2014). Evidence from Chinese industrial settings further indicates that social media and digital information sharing can support knowledge circulation and customer interface processes, but only when embedded in routines and practices that convert information into relational and commercial outcomes (Guechtouli and Purvis 2024, Desmarchelier 2024). Secondly, relationship marketing research shows that relational investments improve exchange outcomes under complexity and risk (Morgan and Hunt 1994, Palmatier et al. 2006). However, it is not well understood how environmental service firms operationalize relationship-building when informal access must coexist with formal tendering procedures and public accountability requirements.

An additional gap concerns constraint interaction. The literature has established that marketing capabilities explain performance differences beyond industry effects (Morgan et al. 2009, Vorhies and Morgan 2005). But far less is known about how procurement cost compression, working-capital lock-in, and legitimacy barriers jointly suppress capability development in regional sustainability-oriented service firms. This issue becomes especially salient when firms attempt cross-regional expansion, enterprise customer diversification, and digital marketing professionalization under tight cash conditions. A practice-oriented view of sustainability also reminds us that capability formation is embedded in routines, field conditions, and power asymmetries rather than simply chosen *ex ante* (Lissillour and Silva 2024, Lissillour 2024 2025).

Responding to these gaps, this study examines how a regional environmental service provider adapts its marketing strategy under procurement constraints, legitimacy barriers, and cash-cycle pressure, and how it can reconfigure its capabilities to support cross-regional expansion, customer diversification, and more effective digital execution. The study addresses three research questions: (RQ1) How do sustainability-critical procurement and industry constraints shape marketing strategy

choices in regional environmental service firms? (RQ2) Which marketing capability gaps, particularly in digital conversion, customer management, and solution/value articulation, are most consequential for growth and differentiation in this setting? (RQ3) Which capability re-configurations can improve market access, customer diversification, and marketing effectiveness under cash-cycle pressure? In doing so, the paper develops a constraint-sensitive marketing capability framework that explains how institutional conditions and financial conflicts shape the feasibility and sequencing of capability development in policy-shaped environmental service markets.

2 | LITERATURE BACKGROUND AND CONCEPTUAL FRAMING

2.1 | Sustainability-Oriented Marketing in Environmental Service Industries

Marketing in environmental protection industries differs from classic consumer markets because value is multi-stakeholder, policy-embedded, and delivered through long-cycle service systems rather than discrete products (Suchman 1995, Vargo and Lusch 2004). In B2G and B2B environmental services such as municipal sanitation, waste sorting, and industrial waste-water solutions, demand is frequently shaped by regulation, public procurement rules, and shifting policy priorities. This heightens exposure to legitimacy concerns and to the need to communicate not only technical performance but also public value, compliance assurance, and continuity of service delivery (Suchman 1995). This paper does not treat sustainability-oriented marketing as promotional green communication alone. Rather, it views it as the organizational capacity to provide evidence for environmental value credibly under high-accountability procurement conditions.

This view is consistent with recent sustainability research stressing that environmental and social performance claims must be anchored in governance arrangements and inter-organizational coordination, rather than communicated as generic green promises (Boyer 2024, Purvis and Fernandez 2024, Lissillour and Silva 2024, Lissillour 2024, Vavrina and Drdla 2024). For instance, work on sustainable supply chains underscores the importance of interdisciplinary framing, practice-based learning, and a critical awareness of power and inequality in sustainability implementation (Boyer 2024, Lissillour and Silva 2024, Lissillour 2024 2025). More broadly, recent research on digital-financial development also suggests that the relationship between modernization and sustainability is not uniformly positive. For example, Bajwa et al. (2025) show in the ASEAN context that digital financial inclusion can support economic growth while also generating environmental costs. This underscores the need to examine how digitally enabled market development translates into sustainability outcomes under specific institutional conditions. In policy-shaped service sectors, these issues translate directly into marketing because differentiation depends on whether the firm can make sustainability outcomes visible, auditable, and buyer-relevant.

2.2 | Industry Pain Points as Contextual Constraints on Marketing Strategy

Research in strategy and marketing has long recognized that firm performance depends not only on internal resources but also on the opportunity structure and constraints of the environment (Day 1994, Teece 2007). In environmental services, several recurring constraints are especially consequential for regional firms: relationship-dependent market access, long payment cycles and working-capital exposure, and structurally thin margins that limit discretionary investment in brand building, digital systems, and sales enablement.

From an institutional perspective, relationship dependence can be interpreted as an informal mechanism of legitimacy and risk reduction in high-stakes service contracting. Buyers rely on trust proxies such as track record, embedded ties, and local presence when outcomes are uncertain and monitoring is costly (Morgan and Hunt 1994, Suchman 1995). Recent work on hybrid organizations and policy-market coordination in China strengthens this argument by showing that organizational action often depends on selective coupling across contradictory institutional demands, and on negotiated alignment between policy priorities and market incentives (Wang 2024, Weng et al. 2025). This helps explain why regional firms may struggle with cross-regional expansion even when their technical solutions are competitive. Legitimacy is locally produced and not automatically transferable across jurisdictions (Suchman 1995).

2.3 | A Capabilities-Based View of Marketing Strategy under Resource Constraints

A robust stream in marketing views competitive advantage as grounded in capabilities that allow firms to sense markets, build relationships, and deliver superior customer value (Day 1994). Market-orientation research likewise argues that systematically generating and using market intelligence improves performance, particularly when competition is intense and customer needs evolve (Kohli and Jaworski 1990, Narver and Slater 1990). In project-based environmental services, these capabilities translate into identifying tenders and private-sector demand early, shaping solution fit and risk narratives, mobilizing reference cases and partners, and managing post-award delivery and renewal opportunities.

Extending this logic, marketing capability research emphasizes that firms differ in their ability to deploy coherent processes across pricing, communication, service development, and customer management, and that these differences explain performance beyond industry effects (Morgan et al. 2009, Vorhies and Morgan 2005). For regional environmental protection enterprises, this suggests that industry pain points are not only barriers; they are selection pressures that make certain capabilities particularly valuable, especially relationship portfolio management, value-based selling, and customer lifecycle management. Studies of industrial information sharing and organizational learning under emerging technologies further suggest that digital routines become

strategically meaningful only when they are embedded in organizational learning processes and managerial discipline (Guechtouli and Purvis 2024, Desmarchelier 2024).

2.4 | Value-Based Selling and Solution Articulation in B2B Environmental Markets

Environmental services often involve complex benefits including risk reduction, compliance, public value, and lifecycle cost savings. A central marketing challenge is therefore translating technical and environmental performance into buyer-relevant value metrics. B2B research on value-based selling shows that firms and sales-people often struggle to operationalize value selling because it requires diagnostic discovery, quantification of customer-specific benefits, and cross-functional alignment behind solution delivery (Terho et al. 2012).

In sustainability-critical service contexts, value-based selling also interacts with legitimacy. Credible value claims require proof through data, monitoring, third-party validation, and reference projects, and they must remain consistent over time (Suchman 1995, Terho et al. 2012). This is why practice-based sustainability research is useful here. It reminds us that sustainability is enacted through repeated processes of measurement, classification, verification, and coordination (Lissillour and Silva 2024, Lissillour 2025). A regional firm that cannot codify these processes into a persuasive solution narrative remains trapped in cost-led bidding and cannot justify investment in smart systems or upgraded service bundles.

2.5 | Digital and CRM Capabilities as Mechanisms for Breaking the Vicious Cycle

Digital marketing and Customer Relationship Management (CRM) research suggests that performance gains come less from being online than from building organizational capabilities which integrate customer data, processes, and engagement channels (Payne and Frow 2005, Trainor et al. 2014). A strategic CRM view emphasizes alignment, cross-functional integration, and process design to manage acquisition, development, and retention (Payne and Frow 2005). Social CRM capability research similarly shows that customer relationship performance improves when technology use is coupled with customer-centric management systems (Trainor et al. 2014).

For regional environmental protection enterprises, digital and CRM capability is theoretically important because it can reduce dependence on relationship-only acquisition by enabling systematic lead generation in enterprise markets, segmentation and targeted content for solution categories, codification of references and proof points, and lifecycle communication which supports renewal and upselling (Payne and Frow 2005, Trainor et al. 2014). Evidence from the Chinese automotive industry indicates that digital information sharing platforms can facilitate knowledge exchange and coordination, but that managerial value depends on how those platforms are embedded in industrial

processes (Guechtouli and Purvis 2024). Emerging-technology research also points to organizational learning as a precondition for extracting strategic benefit from digital tools (Desmarchelier 2024). Under contractual requirements characterized by long payment cycles and thin margins, these mechanisms are especially salient because improved retention and conversion efficiency can release resources for further capability investment.

2.6 | Integrated Theoretical Framing: A Constraint-Sensitive Marketing Capability Framework

This study integrates three streams of literature that are often discussed separately but are tightly connected in sustainability-critical environmental service markets. These include sustainability-oriented B2B marketing, legitimacy, and capability development under constraint. Recent B2B sustainability research argues that sustainable marketing should not be understood merely as green communication, but as the organizational capacity to generate business value while contributing to broader social and environmental objectives (Vrontis et al. 2025). In parallel, climate- and sustainability-focused B2B research has emphasized that firms increasingly need to translate environmental and social risks into credible customer-facing value propositions, stakeholder reassurance, and commercially viable service models (Khan et al. 2023, Sairanen and Aarikka-Stenroos 2024). This perspective is especially relevant in environmental services, where marketing claims are inseparable from compliance, continuity, and the audibility of environmental value.

The second relevant stream of research concerns dynamic and marketing capabilities. Recent studies show that in B2B contexts, capabilities related to adaptation, intelligence use, relationship management, and customer-facing digitalization are not peripheral, but central to performance and renewal (Bag et al. 2023, Dayangan and Aykol 2024). More specifically, research on AI- and technology-enabled B2B capabilities shows that technological readiness, AI-supported CRM, and customer-facing information capabilities can enhance relationship performance and sustainability-related outcomes when they are embedded in routines and processes rather than treated as stand-alone tools (Rahman et al. 2023). Likewise, process-oriented work on data-driven marketing capability in B2B firms shows that digital marketing value depends on an established process for the generation of ideas, analysis, and deployment mechanisms, rather than on mere digital presence (Ravat et al. 2024). These insights are directly relevant to environmental service firms whose digital activity often remains superficial unless integrated with customer management, proof-building, and value articulation.

The third stream of research concerns legitimacy. In policy-shaped and high-accountability markets, especially where government procurement and public scrutiny are salient. Market success depends not only on technical competitiveness but also on whether the firm is seen as a credible and appropriate provider. Recent work shows that dynamic

marketing capabilities can support legitimacy-building by improving local sensitivity, relationship management, anticipation of contractual opportunities, and demonstrating exemplary practice, particularly in unfamiliar or externally constrained markets (Rivero-Gutiérrez et al. 2024). For regional environmental service firms, this is critical because legitimacy is often locally embedded and not automatically transferable across jurisdictions. As a result, marketing in such settings must be understood not simply as demand generation but as a process of legitimacy mobilization and value stabilization.

Synthesizing these streams, we define a constraint-sensitive marketing capability framework as an analytical lens explaining how institutional access conditions, procurement rules, and cash-cycle conflicts shape both the feasibility and sequencing of marketing capability development in sustainability-critical service markets. In this framework, procurement institutions and relationship-dependent access conditions influence market participation; long receivables cycles, pre-funding requirements, and cost compression reduce discretionary investment capacity. Reduced discretionary capacity weakens the development of capabilities that are particularly valuable in this context, including digital conversion governance, customer relationship discipline, and solution/-value articulation. These weaker capabilities then reduce differentiation, constrain cross-regional legitimacy transfer, and reinforce dependence on familiar public channels.

This framing also clarifies the theoretical contribution of the paper. The study does not claim to test a universal causal model from a single case. Rather, it develops a process explanation of how institutional conditions, payment pressures, and marketing capability formation become mutually reinforcing in regional environmental service markets. In this sense, the paper contributes to sustainability-oriented marketing by showing that the communication of environmental value is conditioned by organizational processes, relational credibility, and financial feasibility, not merely by strategic intent or promotional effort.

3 | MATERIALS AND METHODS

This study adopts a theory-building single-case design and pursues analytical rather than statistical generalization. The purpose is not to estimate population-level effects across all environmental service firms, but to examine a theoretically relevant case in depth in order to elaborate a mechanism that may be transferable to comparable organizations operating under similar institutional and financial conditions. In line with case-study logic, the focal case was selected because it displays the key tensions central to the research problem: dependence on policy-shaped procurement, cross-regional growth ambitions, resource constraints, and the need to communicate credible environmental value in B2G and B2B settings. The study therefore aims to generate context-bounded yet conceptually portable insights for regional environmental service providers facing similar combinations of legitimacy barriers, procurement pressure, and cash-cycle conflicts.

3.1 | Case Selection and Research Context

The focal firm, Hunan Meizhong Environmental Ecology Technology Co., Ltd., was selected purposively for theoretical rather than statistical reasons. Firstly, it represents a regional environmental service provider operating in a policy-intensive B2G/B2B market, which is central to the research problem addressed in this paper. Secondly, it displays salient strategic tensions relevant to theory development, including high dependence on government-linked channels, limited cross-regional legitimacy transfer, constrained enterprise-customer penetration, and weak digital marketing intensity under long payment cycles. Thirdly, the case offered unusually rich access to multiple forms of evidence, including managerial interviews, archival operational and financial data, survey feedback, competitor information, and expert validation. The case was therefore suitable for examining how procurement institutions, legitimacy barriers, and financial pressures jointly shape the development of marketing capabilities in sustainability-critical service markets.

3.2 | Data Sources and Collection Procedures

To improve robustness, the study draws on four complementary sources of evidence: semi-structured interviews and field engagement, a structured client survey, documentary and archival materials, and competitor benchmarking with expert validation.

Firstly, we conducted semi-structured interviews with 11 informants between July 2024 and March 2025. The interviewees included one marketing director, three project managers, five client managers, and two government representatives involved in procurement or service oversight. Interviews typically lasted between 60 and 120 minutes and focused on market access, bidding practices, customer development, pricing logic, value proposition construction, digital routines, and perceived growth constraints. Site visits to the company headquarters and branches complemented the interviews by enabling observation of coordination and implementation practices.

Secondly, a structured questionnaire was administered to current and potential clients in order to capture perceptions of service quality, brand awareness, satisfaction, and channel preferences. A total of 500 questionnaires were distributed and 410 valid responses were retained. The valid sample comprised 150 government-related respondents, 120 enterprise-client respondents, and 140 potential-client respondents, with the majority located in Hunan Province. The survey was designed as a diagnostic and triangulation instrument rather than as a basis for formal causal modelling. Items were measured primarily with five-point Likert-type scales, and the questionnaire achieved satisfactory internal consistency at the overall level.

Thirdly, we collected documentary and archival evidence, including internal operational and financial summaries, bidding records, project acquisition logs, website and social-media materials, and publicly available competitor information. These sources were used to establish objective

indicators of channel structure, receivables pressure, digital conversion, customer concentration, and market expansion performance.

Fourthly, the study included competitor benchmarking and expert validation. The benchmarking exercise focused on two salient competitors selected for their relevance to the focal firm's strategic comparison environment. In addition, a two-round Delphi process was conducted with five experts, including industry association researchers, marketing academics, and an industry marketing executive, in order to validate the diagnosis and the plausibility of the recommended strategic responses.

3.3 | Measures and Operationalization

Variables were operationalized at three levels. Firstly, contextual constraints included relationship-dependent market access, payment-cycle exposure, procurement cost compression, and competition intensity. These were captured through secondary industry data and firm-specific indicators such as the out-of-province bid win-rate, the accounts receivable period, and the working-capital gap derived from records and triangulated with manager accounts. Secondly, marketing strategy and capability indicators captured targeting and segmentation practices, value proposition articulation and pricing logic, channel mix and channel governance, promotion content consistency and proof mechanisms. Customer lifecycle practices included tiering, renewal processes, complaint handling, and post-project development. Thirdly, marketing outcomes included cross-regional market penetration, customer portfolio structure, and proxies for marketing efficiency such as digital conversion, retention, and survey-based satisfaction and advocacy.

3.4 | Data Analysis Procedures

Qualitative and quantitative evidence were analyzed through a convergent mixed-method logic. Interview transcripts, observation notes, and documentary materials were first coded deductively based on the study's sensitizing categories, including contextual constraints, capability gaps, and market outcomes. A second cycle of coding consolidated these patterns into higher-order themes such as relationship-based market access, payment-induced investment suppression, weak value articulation, and under-integrated digital conversion governance. These higher-order themes were then used to reconstruct within-case process narratives.

Survey responses were analyzed using SPSS 26.0 and were used primarily for descriptive statistics, reliability checking, and group comparisons across respondent categories. The survey was not used to test a formal latent-variable model; rather, it served to corroborate or challenge patterns emerging from the qualitative and archival evidence. The benchmarking exercise further helped situate the focal firm's performance relative to comparable actors.

The study used a convergence logic for inference. Claims were treated as analytically stronger when they were supported by at least two independent sources, such as interviews and archival records,

TABLE 1 Data sources and collection procedures.

Data source / procedure	Purpose in the study	Sample / coverage	Period	Outputs used in analysis
Semi-structured interviews and field engagement	Reconstruct marketing strategy choices, constraints, and capability gaps; capture process mechanisms	Internal informants (e.g., marketing director, project/client managers) and external stakeholders; site visits and observations	July 2024-March 2025	Transcripts and field notes coded into constraint, capability, and outcome themes; within-case causal narratives
Client survey	Quantify client perceptions and compare patterns across client groups relevant to segmentation, channel preferences, and satisfaction	500 distributed; 410 valid responses (82% effective response rate); three client groups	Fielded during primary collection window	Descriptive statistics, group comparisons, reliability assessment (overall alpha = 0.85), segmentation-relevant indicators
Document and archival data	Establish objective baselines of marketing inputs/outcomes; triangulate interview claims; reconstruct bidding, customer structure, and financial constraints	Internal operational/financial summaries (2022-2024); bidding records; project acquisition logs; marketing materials and digital artifacts	2022-2024 records plus 2024-2025 artifacts	Key indicators (e.g., channel mix, bid success, receivables cycle, pre-funding intensity); corroboration and discrepancy checks
Competitor benchmarking and expert validation (Delphi)	Situate the focal firm relative to peers; validate diagnosis and feasibility/transferability of recommendations	Two salient competitors and a two-round Delphi with five experts	Benchmarking: 2022-2024; Delphi during primary study window	Comparative profiles; validation of problem map and action modules; convergence indicator (Kendall's W = 0.72)

or survey patterns and benchmarking evidence. Where discrepancies appeared, these were retained rather than eliminated and were interpreted as possible indicators of implementation gaps, perception asymmetries, or bias in specific source types.

adult participants only, did not involve medical or psychological intervention, and reporting procedures ensured anonymous responses. Supporting documentation, including participant information and institutional exemption materials, was prepared for the study.

3.5 | Rigor, Trustworthiness, and Ethics

Several measures were used to enhance rigor and trustworthiness. Firstly, the study employed data triangulation across interviews, survey evidence, archival records, benchmarking materials, and expert validation. Secondly, informant triangulation was used to reduce the overreliance on a single perspective by including both internal actors and external stakeholders. Thirdly, process transparency was supported by a documented chain of evidence linking interview themes, survey patterns, archival indicators, and interpretive conclusions. Fourthly, the Delphi process helped assess the plausibility and relevance of the diagnostic interpretation and recommended action modules.

At the same time, we recognize that the study remains subject to several limitations typical of case-based research. Interview data may reflect retrospective opinion to make sense of past actions and self-justification, and the survey sample was regionally concentrated and not designed for population-level inference. These issues are acknowledged explicitly in the limitations section.

All interviews and survey activities were conducted on a voluntary basis with informed consent. Participants were informed of the academic purpose of the study, the confidential treatment of their responses, and their right to decline participation. The study involved

4 | RESULTS

The empirical evidence shows a consistent pattern: the focal firm's market expansion and customer-diversification outcomes are not best explained by isolated tactical weaknesses, but by a reinforcing set of constraints linking procurement conditions, cash-cycle pressure, and uneven capability development. Across interviews, archival indicators, survey patterns, and benchmarking evidence, three recurring features stand out. These are firstly the relationship-gated market access in public procurement, secondly the severe working-capital exposure caused by long receivables and pre-funding requirements, and thirdly the underinvestment in scalable marketing capabilities, especially digital conversion governance, customer management processes, and solution/value articulation. The following sections present the empirical evidence in relation to these patterns before turning to their theoretical interpretation. Table 2 consolidates the core indicators and shows where the firm underperforms relative to management's strategic intent of cross-regional growth, stronger enterprise share, and improved marketing productivity.

4.1 | Process Evidence for the Constraint Transmission Mechanism

The evidence suggests a temporal sequence rather than a merely static association. Across 2022–2024 archival indicators and 2024–2025 interview accounts, procurement price pressure and delayed payment cycles appeared first as antecedent conditions shaping managerial decisions about discretionary spending. Long receivables periods, high pre-funding requirements, and thin margins reduced available liquidity and increased the perceived risk of non-essential investment. Interviewees repeatedly described how this financial pressure led management to defer or narrow spending on brand building, CRM routines, enterprise-market development, and digital conversion systems.

The consequences of this investment suppression were then visible in downstream capability patterns. Digital channels remained weakly integrated with offline follow-up, customer management was insufficiently tiered and process-driven, and solution articulation remained underdeveloped outside familiar local contexts. These capability limitations, in turn, coincided with low enterprise penetration, low out-of-province bid success, and continued dependence on government-linked channels. For this reason, the evidence supports the direction of the proposed mechanism as procurement and payment pressure leading to investment suppression, then to capability weakening, and then to deeper dependence and constrained growth, rather than the reverse sequence.

Taken together, these indicators show that the firm's marketing outcomes are less a function of isolated tactical shortcomings and more the product of a reinforcing constraint structure. Cross-regional underperformance (25% win-rate) co-occurs with a channel architecture dominated by government projects (58%) and a low non-government share (<15%), while digital channels contribute only 9% of project acquisition and display weak conversion effectiveness (8%). The brand indicator reveals meaningful local gains, but the absence of comparable out-of-province traction is consistent with a legitimacy deficit in new jurisdictions rather than a lack of general promotional activity.

Figure 1 (constraint transmission mechanism) should be read as a causal chain with feedback loops rather than a static diagnostic. It depicts how procurement cost compression and intense bidding competition reduce margin and pricing discretion, while long receivables and high pre-funding requirements increase working-capital lock-in and liquidity risk. These financial constraints, in turn, restrict investment in marketing capability development (brand building outside the home province, enterprise solution selling, CRM, and digital conversion systems), which weakens differentiation and raises customer acquisition costs, thereby increasing reliance on relationship-based public channels and reinforcing the initial conditions. In the evidence provided by the case, this loop is observable in the co-movement of cash-cycle indicators (182-day receivables; 45% pre-funding; 25-million-yuan cash-flow gap) with capability outcomes (low digital share and conversion; limited enterprise penetration) and expansion outcomes (low out-of-province tender success).

5 | DISCUSSION

5.1 | Theoretical Implications

This study shows that, in policy-shaped environmental service markets, marketing outcomes are best understood not as the result of isolated tactical choices but as the consequence of an interaction between institutional access conditions, financial pressures, and capability development. This finding extends established capability-based views of marketing by showing that the issue is not simply whether firms possess marketing capabilities, but whether they are able to invest in, sequence, and sustain those capabilities under procurement and cash-cycle constraints. Recent research has similarly emphasized that B2B marketing capabilities are shaped by broader institutional and environmental conditions and should be analyzed as dynamic, context-sensitive processes rather than as static bundles of resources (Bag et al. 2023, Dayangan and Aykol 2024).

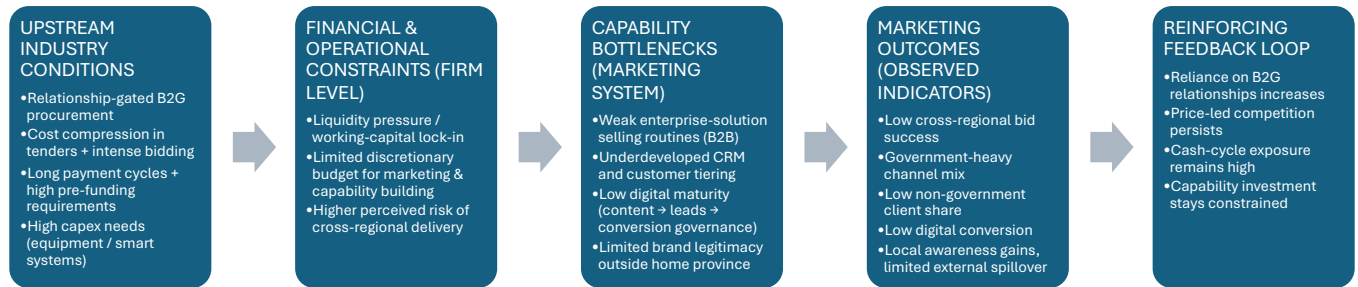
The findings also contribute to sustainability-oriented marketing research. Recent work in Industrial Marketing Management has argued that sustainable B2B marketing remains underdeveloped conceptually and empirically, despite growing pressure on firms to align commercial performance with environmental impact and social value creation (Vrontis et al. 2025). Our results speak directly to that gap. In the focal case, sustainability-oriented marketing could not be reduced to environmental claims or green brand language. Instead, it depended on the firm's ability to make environmental value credible, documented, buyer-relevant, and operationally defensible in tender-based and relationship-mediated markets. This interpretation aligns with recent work showing that climate- and sustainability-focused B2B strategies generate value only when they connect risk management, customer engagement, and stakeholder value creation in a coherent way (Khan et al. 2023).

A central contribution of the paper is to theorize payment friction as a mechanism linking market structure to marketing capability weakness. The case suggests that procurement price pressure and delayed payments did not merely reduce short-term liquidity; they constrained the firm's ability to build the very processes needed for differentiation, enterprise-customer diversification, and more systematic digital conversion. This mechanism is consistent with recent evidence showing that late payments undermine the opportunities for SMEs to access finance by increasing credit rationing and worsening loan conditions, thereby weakening firms' investment capacity (Kaya 2024). It also resonates with recent research on procurement showing that SME participation in public procurement remains deeply shaped by structural barriers, administrative asymmetries, and uneven access conditions, rather than by competitive efficiency alone (?). In our case, those pressures translated into a conservative and reactive marketing posture, reinforcing dependence on familiar public channels and reducing the scope for firms to invest in upgrading their capabilities.

The findings further enrich the literature on legitimacy and market expansion. Cross-regional underperformance in the case could not be explained by price or technical quality alone. Instead, it reflected the

TABLE 2 Key empirical indicators (Hunan Meizhong).

Indicator	Operational definition	Observed value	Interpretation for the case
Cross-regional bid success	Win rate for out-of-province tenders	25% (8 wins / 32 bids, 2024)	Expansion is impeded despite competitive pricing and technical claims, consistent with relationship barriers in B2G procurement.
Channel mix (project acquisition)	Share of projects sourced by channel	Government 58%; Enterprise 18%; Partners 15%; Digital 9% (2024)	The pipeline is structurally dependent on public channels; enterprise and digital channels remain underdeveloped as scalable growth engines.
Client structure (non-government share)	Share of non-government clients in the customer base/revenue mix	<15% non-government share (2024)	Concentration heightens exposure to policy/-payment volatility and limits margin expansion associated with enterprise solutions.
Digital conversion	Share of website inquiries converting to signed contracts	8% conversion (2024)	Digital presence functions primarily as an information brochure; weak CRM and closed-loop conversion governance constrain ROI.
Brand awareness (home province)	Recognition rate in Hunan Province	35% (2020) to 68% (2024)	Awareness improved locally, but the evidence indicates limited spillover beyond Hunan, aligning with weak cross-regional legitimacy.
Accounts receivable cycle	Average receivables period (days)	182 days (2024)	Long payment cycles constrain discretionary investments in brand, digital tools, and sales enablement.
Pre-funding intensity	Proportion of advance funds tied up in projects	45% (2024)	High working-capital lock-in increases financing pressure, and reinforces conservative, bid-centric marketing behavior.
Cash-cycle exposure	Cash-flow gap attributable to working-capital constraints	25 million yuan (2024)	Liquidity stress provides a concrete mechanism linking industry conditions to capability underinvestment.

**FIGURE 1** Constraint transmission mechanism linking industry conditions to marketing 414 outcomes in regional environmental service firms (case: Hunan Meizhong).

difficulty of transferring legitimacy beyond the home region. This is consistent with recent research showing that dynamic marketing capabilities support legitimacy in new markets through flexibility, local sensitivity, relationship management, anticipation, and exemplariness (Rivero-Gutiérrez et al. 2024). Our study extends this argument by showing that legitimacy transfer is not only a relational and symbolic issue; it is also shaped by the firm's financial ability to invest in portable proof systems, customer documentation, local presence, and consistent value articulation.

Another theoretical implication concerns digital marketing. The case confirms that weak digital outcomes are not well explained by low online visibility alone. Rather, they reflect a deeper absence of process-oriented data use, coordinated follow-up, and customer lifecycle governance. This interpretation is supported by recent B2B research showing that AI-enabled CRM capability, technology readiness, and data-driven marketing processes affect performance only when they are embedded

in repeatable processes and cross-functional learning mechanisms (Rahman et al. 2023, Ravat et al. 2024). In other words, brochure-like digital presence is not a capability. Capability begins when data, processes, and organizational learning are linked to conversion, retention, and value communication.

The study also has implications for how sustainability transitions are understood in B2B environmental services. Recent work on low-carbon business models emphasizes that value creation in decarbonizing B2B settings requires new logics of organizing, customer engagement, and business-model alignment rather than simple extensions of traditional offerings (Sairanen and Aarikka-Stenroos 2024). Our findings complement this perspective by suggesting that regional environmental service firms may remain trapped in low-differentiation, procurement-led competition unless they can translate environmental service capacity into codified solution logic, relational credibility, and auditable performance

proof. This is especially important in markets where sustainability is politically important but commercially mediated through tenders, and contracts awarded are associated with payment delays, and administrative risk aversion.

5.2 | Managerial Implications

From a managerial perspective, the findings suggest that market entry in new regions should be treated as a legitimacy-transfer process rather than solely due to competitive positioning. Local partners, local operating structures, codified proof of performance, and visible commitments to service continuity are likely to matter as much as technological or pricing advantages. The results further suggest that a working-capital strategy and marketing strategy should not be separated in firms exposed to long receivables cycles. Managers may need to prioritize customer segments with more manageable payment terms, redesign pricing logic to reflect financing burdens, and sequence capability investment toward marketing strategies with visible conversion and retention effects. At the capability level, digital marketing should be designed as a closed-loop conversion architecture, while solution selling should be built through repeatable diagnosis–design–evidence processes rather than ad hoc proposal writing.

Overall, the discussion suggests that the “constraint loop” identified in the case is best interpreted not as a universal model, but as an analytically generalizable mechanism. It helps explain why regional environmental service firms may struggle to convert technical and environmental competence into market differentiation, when legitimacy is localized, payment cycles are long, and marketing capability formation is financially constrained. In that sense, the paper contributes to sustainability research by showing that sustainable value communication in B2G and B2B environmental services depends on the interplay of institutions, finance, and capabilities, rather than on green messaging alone.

5.3 | Limitations and Future Research

This study has several limitations. Firstly, it is based on a single-case design and therefore does not support statistical generalization. The value of this study lies in theory building and elaboration of mechanisms rather than population-level inference. Secondly, although the study triangulates multiple sources of evidence, some interview accounts may still reflect retrospection or self-justification in making sense of past actions. Thirdly, the survey sample was concentrated largely in one regional context and functioned as a diagnostic instrument rather than as a basis for formal causal modelling. Fourthly, while the paper addresses sustainability-oriented marketing in environmental service markets, it does not directly measure environmental-effectiveness outcomes. The study therefore cannot demonstrate whether financial and procurement frictions degrade the environmental performance itself. The study can

only show how these factors constrain the development of the capabilities needed to articulate, provide evidence for, and scale environmental value.

Future research could build on this study in several ways. Multi-case comparisons across regions and sub-sectors could assess the boundary conditions of the proposed mechanisms. Larger-sample studies could test the links between payment pressure, capability investment, and customer diversification more formally. Further research could also examine how environmental service firms convert verified sustainability outcomes into procurement legitimacy and buyer value perceptions over time. Future research could also examine whether the constraint transmission mechanism operates differently across hidden market or policy states. In this respect, regime-identification approaches such as those used by Li et al. (2026) may offer useful methodological inspiration for modeling state-dependent variation in how financial pressure, information flows, and strategic responses interact over time.

6 | CONCLUSIONS

This study examined how a regional environmental service provider in China adapts its marketing strategy where market access is focused on relationship building, procurement price pressure, and long receivables cycles. Using a mixed-method single-case design, the paper shows that the core bottleneck is not simply weak promotion or insufficient managerial intent. Rather, it is a constraint-sensitive capability problem: procurement and cash-cycle conflicts suppress discretionary investment, which weakens digital conversion governance, customer relationship routines, and solution/value articulation capabilities. These deficits reduce differentiation, constrain cross-regional legitimacy transfer, and reinforce dependence on familiar public channels.

The study makes three main contributions. Firstly, this study contributes to sustainability-oriented B2B marketing by showing that environmental value must be credible, documented, and relevant to buyers through organizational competence and routines, not simply communicated through generic claims of the potential benefits to the environment. This point is increasingly central in recent B2B sustainability research, which stresses that firms must connect commercial viability with social and environmental value creation in much more concrete ways than earlier marketing frameworks assumed (Khan et al. 2023, Vrontis et al. 2025). Secondly, this study contributes to capability research by showing that capability development is shaped by feasibility and sequencing under constraint. Recent research on dynamic capabilities, AI-enabled CRM, and data-driven B2B marketing suggests that capabilities emerge through coordinated actions and learning processes, rather than through isolated investments in tools or visibility (Rahman et al. 2023, Ravat et al. 2024, Dayangan and Aykol 2024). Thirdly, this study contributes to legitimacy research by clarifying how localized legitimacy and financial capacity jointly influence whether a firm can scale beyond its home region (Rivero-Gutiérrez et al. 2024).

The paper does not claim universal inference from a single case. Its contribution is instead to elaborate a mechanism through which institutional conditions, payment frictions, and marketing capability formation become mutually reinforcing in policy-shaped environmental service markets. Future research should test this mechanism across multiple regions, ownership forms, and environmental-service sub-sectors. Future research should further examine how firms verified sustainability outcomes, and translate these outcomes into procurement legitimacy, stakeholder confidence, and value perceptions of buyers over time. It would also be useful to connect this line of inquiry more closely with emerging work on public procurement constraints, payment frictions, and low-carbon business-model development in B2B contexts (Kaya 2024, Flynn 2026, Sairanen and Aarikka-Stenroos 2024).

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

- Bag, S., Srivastava, G., Gupta, S., Zhang, J.Z. & Kamble, S. (2023) Change adaptation capability, business-to-business marketing capability and firm performance: Integrating institutional theory and dynamic capability view. *Industrial Marketing Management*, 115, 470–483. doi:10.1016/j.indmarman.2023.11.003.
- Bajwa, F.A., Fu, J., Bajwa, I.A., Rehman, M. & Abbas, K. (2025) Digital financial inclusion and its dual impact on economic and environmental outcomes in asean countries. *Data Science in Finance and Economics*, 5(1), 53–75. doi:10.3934/DSFE.2025004.
- Boyer, A. (2024) Navigating complexity: Interdisciplinary approaches to sustainable supply chain management. *Management Research Quarterly*, 1(1), 1–3. doi:10.63029/78v84162.
- Crittenden, V.L., Crittenden, W.F., Ferrell, L.K., Ferrell, O.C. & Pinney, C.C. (2011) Market-oriented sustainability: A conceptual framework and propositions. *Journal of the Academy of Marketing Science*, 39(1), 71–85. doi:10.1007/s11747-010-0217-2.
- Day, G.S. (1994) The capabilities of market-driven organizations. *Journal of Marketing*, 58(4), 37–52. doi:10.1177/002224299405800404.
- Dayangan, C. & Aykol, B. (2024) Dynamic capabilities research in international marketing: A systematic literature review and direction for future research. *International Marketing Review*, 41(7), 1618–1672. doi:10.1108/IMR-08-2023-0168.
- Desmarchelier, B. (2024) Exploring organizational learning in the era of emerging technologies. *Management Research Quarterly*, 1(2), 1–3. doi:10.63029/n1pprk28.
- Flynn, A. (2026) Research on sme involvement in public procurement: A review, critique and conceptual framework. *Journal of Purchasing and Supply Management*, 32(2), 101052. doi:10.1016/j.pursup.2025.101052.
- Guechtouli, M. & Purvis, B. (2024) Social media for information sharing in an industrial setting: Evidence from the chinese automotive industry. *Management Research Quarterly*, 1(1), 4–13. doi:10.63029/td1je276.
- Homburg, C. & Wielgos, D.M. (2022) The value relevance of digital marketing capabilities to firm performance. *Journal of the Academy of Marketing Science*, 50(4), 666–688. doi:10.1007/s11747-021-00833-8.
- Kannan, P.K. & Li, H.A. (2017) Digital marketing: A framework, review and research agenda. *International Journal of Research in Marketing*, 34(1), 22–45. doi:10.1016/j.ijresmar.2016.11.006.
- Kaya, O. (2024) The impact of late payments on smes' access to finance: Evidence from credit rationing and loan terms. *Economic Modelling*, 141, 106896. doi:10.1016/j.econmod.2024.106896.
- Khan, H., Gupta, S., Kumar, V. & Kumar, B. (2023) Managing climate change risks and creating stakeholders' value via sustainability-focused b2b brand strategies. *Industrial Marketing Management*, 115, 198–213. doi:10.1016/j.indmarman.2023.09.017.
- Kohli, A.K. & Jaworski, B.J. (1990) Market orientation: The construct, research propositions, and managerial implications. *Journal of Marketing*, 54(2), 1–18. doi:10.1177/002224299005400201.
- Leonidou, L.C., Katsikeas, C.S. & Morgan, N.A. (2013) "Greening" the marketing mix: Do firms do it and does it pay off? *Journal of the Academy of Marketing Science*, 41(2), 151–170. doi:10.1007/s11747-012-0317-2.
- Li, Z., Chen, Z. & Huang, Z. (2026) Modelling the data-generating mechanism of china's commodity market by identifying hidden information flow regimes. *Financial Innovation*, 12(1), 28. doi:10.1186/s40854-025-00804-w.
- Lissillour, R. (2024) Exposing power and inequality in sustainable supply chains: A critical research agenda for transformative change. *Management & Prospective*, 41(5), 58–75. doi:10.3917/g2000.415.0058.
- Lissillour, R. (2025) Reframing sustainability learning through certification: A practice-perspective on supply chain management. *Sustainability*, 17(13), 5761. doi:10.3390/su17135761.
- Lissillour, R. & Silva, M.E. (2024) Going forward and beyond: On the track of a practice turn in supply chain sustainability studies. *RAUSP Management Journal*, 59(2), 138–153. doi:10.1108/RAUSP-09-2023-0181.
- Morgan, N.A., Slotegraaf, R.J. & Vorhies, D.W. (2009) Linking marketing capabilities with profit growth. *International Journal of Research in Marketing*, 26(4), 284–293. doi:10.1016/j.ijresmar.2009.06.005.
- Morgan, R.M. & Hunt, S.D. (1994) The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20–38. doi:10.1177/002224299405800302.
- Narver, J.C. & Slater, S.F. (1990) The effect of a market orientation on business profitability. *Journal of Marketing*, 54(4), 20–35. doi:10.1177/002224299005400403.
- Palmatier, R.W., Dant, R.P., Grewal, D. & Evans, K.R. (2006) Factors influencing the effectiveness of relationship marketing: A meta-analysis. *Journal of Marketing*, 70(4), 136–153. doi:10.1509/jmkg.70.4.136.
- Payne, A. & Frow, P. (2005) A strategic framework for customer relationship management. *Journal of Marketing*, 69(4), 167–176. doi:10.1509/jmkg.2005.69.4.167.
- Purvis, B. & Fernandez, D.B. (2024) Sustainability in global industrial shipping chains: A positivist perspective of international relations. *Management Research Quarterly*, 1(1), 12–22. doi:10.63029/6s5ee610.
- Rahman, M.S., Bag, S., Gupta, S. & Sivarajah, U. (2023) Technology readiness of b2b firms and ai-based customer relationship management capability for enhancing social sustainability performance. *Journal of Business Research*, 156, 113525. doi:10.1016/j.jbusres.2022.113525.
- Ravat, L., Hemonnet-Goujot, A. & Hollet-Haudebert, S. (2024) Exploring how to develop data-driven innovation capability of marketing within b2b firms: Toward a capability model and process-oriented approach. *Industrial Marketing Management*, 118, 110–125. doi:10.1016/j.indmarman.2023.12.015.
- Rivero-Gutiérrez, L., Cabanelas, P., Díez-Martín, F. & Blanco-González, A. (2024) How can companies boost legitimacy in

- international markets? a dynamic marketing capabilities approach. *International Marketing Review*, 41(2), 273–301. doi:10.1108/IMR-09-2022-0215.
- Sairanen, M. & Aarikka-Stenroos, L. (2024) Low-carbon business models: Review and typology. *Industrial Marketing Management*, 123, 222–250. doi:10.1016/j.indmarman.2024.10.001.
- Suchman, M.C. (1995) Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571–610. doi:10.2307/258788.
- Teece, D.J. (2007) Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350. doi:10.1002/smj.640.
- Terho, H., Haas, A., Eggert, A. & Ulaga, W. (2012) “it is almost like taking the sales out of selling”: Conceptualizing value-based selling in business markets. *Industrial Marketing Management*, 41(1), 174–185. doi:10.1016/j.indmarman.2011.11.011.
- Trainor, K.J., Andzulis, J.M., Rapp, A. & Agnihotri, R. (2014) Social media technology usage and customer relationship performance: A capabilities-based examination of social crm. *Journal of Business Research*, 67(6), 1201–1208. doi:10.1016/j.jbusres.2013.05.002.
- Vargo, S.L. & Lusch, R.F. (2004) Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68(1), 1–17. doi:10.1509/jmkg.68.1.1.24036.
- Vavrina, J. & Drdla, M. (2024) Governance of social attributes behind esg concepts in business entities: An empirical evidence based on the benchmarking approach. *Management Research Quarterly*, 1(1), 33–39. doi:10.63029/67mqjk39.
- Vorhies, D.W. & Morgan, N.A. (2005) Benchmarking marketing capabilities for sustainable competitive advantage. *Journal of Marketing*, 69(1), 80–94. doi:10.1509/jmkg.69.1.80.55505.
- Vrontis, D., Shams, R., Kotabe, M. & Kumar, V. (2025) B2b marketing for people, planet and profit: Theoretical advancement and empirical insights. *Industrial Marketing Management*, 130, A1–A9. doi:10.1016/j.indmarman.2025.08.003.
- Wang, J. (2024) Selective coupling in hybrid organization: Institutional logic contradiction in the context of erp post-implementation. *Management Research Quarterly*, 1(2), 15–35. doi:10.63029/x78va191.
- Weng, Y., Charman, K.P. & Vann, R. (2025) Unlocking the growth of prefabricated construction in china: Policy-market synergy as a strategic lever. *Management Research Quarterly*, 2, 4–22. doi:10.63029/xjq49j12.
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