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Platform development in incumbent firms: The interplay of data and actor interests in adding platforms to existing businesses

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Abstract

Research Summary: Despite growing interest in platform transitions, limited research examines how firms navigate challenges of building platform businesses alongside existing products. Through a longitudinal case study of a financial services firm launching a platform, we develop a process model revealing how data bottlenecks shape platform development. These bottlenecks arise from the interplay of technological limitations and control tensions over data aggregation, sharing, and usage. We identify five sequential bottlenecks, where resolving one reconfigures constraints, giving rise to the next. We theorize how data heterogeneity, variation in strategic sensitivity, and actors' absorptive capacity create opportunities for platform sponsors to capture value without competing with complementors. We extend resource dependency theory by showing how peripheral units overcome power imbalances by demonstrating value creation potential with limited data.

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Managerial Summary: When established firms launch platforms alongside existing product businesses, they face significant data-related obstacles. Drawing on a four-year study of a financial services firm building a platform connecting SMEs with lenders, we show how firms must navigate challenges in collecting data from internal units and customers, making incompatible data sources work together, and persuading partners to share and use data in new ways. We find that these obstacles emerge in sequence, where resolving one creates the conditions for the next. We also find that not all data is equally useful to all partners, and that these differences can open market segments the platform sponsor can serve without competing with its own partners. Managers can maintain momentum by combining short-term data workarounds with longer-term structural solutions.

KEYWORDS

data bottlenecks, digital transformation, ecosystem governance, incumbent firms, platform development

1 | INTRODUCTION

Platforms have emerged as a dominant organizational form in the 21st century. Platform-based companies, such as Airbnb, Alibaba, Uber, Deliveroo, and Amazon, have generated significant economic value by leveraging platforms in business models that connect actors in new and efficient ways, with a profound impact on the global economy and society. Through the provision of infrastructure and rules (Gawer, 2021; Parker et al., 2016; Van Alstyne et al., 2016), platforms bring market participants together, allowing for transactions and innovation. Platforms can generate significant value for complementors (Boudreau, 2010), customers (Parker et al., 2016), and the organizations that manage platform governance, commonly known as 'platform sponsors' (Adner & Kapoor, 2010; Boudreau & Hagiu, 2009; Gawer, 2021). For many incumbent firms, developing platform capabilities has become a central digital transformation opportunity as they seek to add platform sponsor positions to their portfolios (Hess et al., 2016; Majchrzak et al., 2016).

Extant studies on platforms establish a central role for data in mediating platform interactions, enabling innovation, and incentivizing platform participation (Bhargava et al, 2020). They emphasize a digital platform's role as a "conduit of data" (Gawer, 2021: 3), facilitating interactions between actors on both sides of a market through information exchange. From the viewpoint of platforms as a data conduit, a critical challenge for researchers is to understand how platform sponsors aggregate, share, and use data to foster platform growth. Customers' attitudes toward their own data are shaped by a variety of concerns about trust, security, and privacy

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(Acquisti et al., 2016; Barrett et al., 2016; Lin, 2022) and the usage of their data (Athey et al., 2017). Similarly, complementors' attitudes toward sharing data with emerging platforms may be shaped by concerns about trust (Bhargava et al., 2020) and competition, and especially whether their data is being used in ways that aid competitors on the platform (Bhargava et al., 2020) or enable competition from the platform itself. Some scholars theorize that customers and complementors are more likely to share data on established platforms (vs. emerging ones), since the benefits of engaging with an established platform are higher (Krämer et al., 2019), and concerns about trust are lower (Barrett et al., 2016). This raises a potential chicken-and-egg scenario for emerging platforms: data sharing by customers and complementors is both a prerequisite for and a consequence of platform growth. Further research is needed to understand how a platform's early decisions, particularly regarding data, may shape third parties' actions, and also how third parties' actions may shape platform data strategies.

We argue that these issues can be further complicated when the platform sponsor is an incumbent firm developing a platform business alongside existing product businesses. The development of platform capabilities has become a central topic in the digital transformation literature (Hess et al., 2016; Majchrzak et al., 2016). The rise of platform-based businesses has led firms to re-evaluate value propositions of standalone products; introducing platform models can enable them to harness innovative capabilities of complementors and potentially build network effects (Cennamo & Santaló, 2013; Katz & Shapiro, 1994). Extant research emphasizes that a large customer base or existing supplier relationships can provide a good stepping stone for launching a platform business (Eisenmann et al., 2011).

What is less present in the literature, however, is that in these contexts, platform sponsors must make decisions about the aggregation, sharing, and usage of data, which may require navigating internal power dynamics between new and existing business units regarding which data will be used and how it will be managed. In addition, an incumbent firm may also need to redefine relationships with existing customers and suppliers with whom they may have conducted business in set ways for a long time. Extant research has fallen short of understanding how firms introducing platforms alongside product or service businesses can develop strategies for managing these critical dynamics to jumpstart network effects with an emerging platform. This presents two critical questions: *How do incumbent firms manage data aggregation, sharing, and usage when developing platforms alongside existing businesses? How do they leverage and adapt existing relationships with customers and suppliers in this process?* Understanding these mechanisms is essential for organizations to successfully adapt their business models and capitalize on the benefits of platform-based strategies. It also sheds necessary light on a potential path of digital transformation for many incumbent firms.

To address this gap, we conducted a qualitative, 4-year longitudinal, field-based case study of a product-oriented U.S. firm (Fincorp—a pseudonym) as it introduced a platform-based business alongside its existing financial product offerings. Fincorp is a leading provider of financial software for small- and medium-enterprises (SMEs). In 2012, driven by competitive pressures and recognizing the potential for higher revenues, Fincorp began developing a platform to connect its large customer base with third-party lenders. Our research involved 89 semi-structured interviews with stakeholders from Fincorp and its partner ecosystem. Interviewees included executive team members, senior functional managers, and executives from complementor organizations. Combined with archival documents and observational data, this data informed our process model of how firms transition to platform business models while managing existing data assets and internal and external stakeholders.

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Our findings identify five distinct data bottlenecks that emerge sequentially across the platform development process. How the firm navigated these bottlenecks through a combination of technological workarounds, data strategy adaptations, and stakeholder management, shaped both the platform's development trajectory and the evolving behavior of complementors and customers. Our findings challenge and extend existing theory in several ways. Existing typologies distinguish among different forms of ecosystem constraints, for example, upstream versus downstream challenges (Adner & Kapoor, 2010), bottleneck positions (Baldwin, 2015; Jacobides & Tae, 2015), and technology versus control bottlenecks (Furr et al., 2025). We find that data bottlenecks combine technological and control dimensions in ways that are not analytically separable, and that resolving one gives rise to new bottlenecks at subsequent ecosystem levels. While research on platform-complementor competition highlights risks of sponsor entry (Gawer & Henderson, 2007; Zhu & Liu, 2018), we show that data heterogeneity creates business segments the sponsor can occupy without directly competing with its own complementors. Data types vary in their strategic sensitivity (i.e., the degree to which sharing exposes the owner to competitive risk), and in the absorptive capacity they demand from potential users. These differences mean that some data goes unused by established complementors, opening opportunities for the sponsor. For instance, behavioral data (e.g., software login frequency) proved highly predictive of creditworthiness but could not be integrated into established lenders' standardized underwriting models, enabling the platform sponsor to leverage it without competitive overlap. Finally, resource dependency theory emphasizes formal authority and bargaining leverage as the primary mechanisms for influencing resource allocation (Pfeffer & Salancik, 1978). Our findings reveal an alternative path: a peripheral platform unit can overcome power imbalances by demonstrating superior data-based value creation potential, even with limited data access. Together, these findings contribute to research on platform transitions and digital transformation, while offering practical insights for incumbent firms seeking to adopt platform business models.

2 | THEORETICAL BACKGROUND

Early platform research, inspired by the industrial organization tradition, understood platforms as a form of market, typically facilitating transactions between customers and complementors (Parker & Van Alstyne, 2005; Rochet & Tirole, 2003; Rysman, 2009). Actors benefit from the emergence of network effects, where the utility of participation in the marketplace increases with the number of users on the opposing side (indirect network effects) or the same side (direct network effects) of the market (Katz & Shapiro, 1994). This industrial organization economics perspective emphasized the role of market forces, such as pricing and scarcity, in accounting for the growth of both platforms and, by extension, network effects for users (Evans, 2009; Parker & Van Alstyne, 2005). By eschewing the notion of platforms as a distinct organizational form (Saadatmand et al., 2019), this literature developed a limited perspective of platform sponsors' agency, or their role in shaping customer and complementor engagement (Gawer & Cusumano, 2014). Adjacent work has begun to develop an organizational perspective, placing a greater emphasis on the decisions made by platforms and complementors that influence platform development (Kretschmer et al., 2022). Under this perspective, platforms are the result of intentional organizing efforts both within and between firms: "platforms...do not simply emerge without deliberate, firm-driven agency or deliberate managerial decisions and actions" (Gawer & Cusumano, 2014: 420).

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2.1 | Platform development

A central challenge in platform development is jumpstarting network effects (Cennamo & Santaló, 2013; Eisenmann et al., 2011). Recent work has emphasized data as critical to this process where transaction platforms are "conduits of data," facilitating interactions through algorithmic matchmaking and providing information about participants on each side to the other (Gawer, 2021). Data collection fuels platform growth by improving user experiences, enhancing matching (Chen et al., 2022), and enabling innovation by complementors (Boudreau, 2010).

However, emerging platforms face a two-sided challenge regarding data sharing. Customers may hesitate to contribute data due to privacy concerns (Lin, 2022) and uncertainty over how it will be utilized (Athey et al., 2017). Complementors may withhold data over fears it could benefit rivals or the sponsor itself (Bhargava et al., 2020). Yet, substantial data sharing is a prerequisite for growth. This creates a chicken-and-egg dynamic where data sharing is required to start and grow network effects, which once started then encourages further sharing (Krämer et al., 2019). Platform sponsors thus need strategies to overcome early participant reluctance. These hurdles may be further complicated for incumbents developing a platform alongside existing product businesses that do not rely on network effects.

2.2 | Platform development alongside existing product or service businesses

While platform research has primarily focused on firms that originate as platform businesses (Eisenmann et al., 2011; Parker et al., 2016; Zhao et al., 2020), recent research has begun to examine how established firms transition toward or add platform-based business models (Cozzolino et al., 2021; Hagiu & Altman, 2017; Khanagha et al., 2022). Van Dyck et al. (2024) find that incumbents' beliefs about their legacy businesses fundamentally shape their platform strategies. When firms see platforms as extensions of their existing business, they build product-centric platforms that attract specialized complementors but remain tied to legacy constraints. In contrast, firms that create independent platforms reach broader ecosystems but struggle to leverage existing advantages. Cozzolino et al. (2018) examine incumbent firms adapting business models when confronted with digital disruption, revealing a two-phase process as firms experiment independently with platform models, then shift to alliances and acquisitions as disruptive entrants threaten their core businesses. Their study shows that incumbents face tensions between open platform logics and traditional closed business models, with new platform units requiring different approaches to value creation through external knowledge access while competing for resources with established units optimized for production.

A related stream of literature on business model diversification provides insights into how firms manage multiple business models (Helfat & Eisenhardt, 2004; Snihur & Tarzijan, 2018; Visnjic et al., 2021). This literature highlights that new units must often compete for resources and executive attention with established, powerful business units (Helfat & Eisenhardt, 2004). Operational requirements of a new unit can clash with a firm's established processes, metrics, and resource allocation models, which are typically optimized for existing product businesses (Visnjic et al., 2021). This creates significant hurdles, as the very structures that promote efficiency in the core business can stifle exploration and risk-taking needed to grow a new one.

These hurdles are particularly acute when developing a platform, which requires a fundamental shift from product development to contributor orchestration and building network

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effects (Cusumano & Gawer, 2002; Parker et al., 2016). This involves transitioning from focusing solely on customers to balancing the diverse needs of contributors in a managed ecosystem (Altman et al., 2022; Hagiu et al., 2020). This shift forces a firm to re-imagine relationships with customers and suppliers that may become complementors (Hagiu & Altman, 2017; Hagiu & Wright, 2015). When launched inside a large firm, a platform can disrupt internal power dynamics and identity considerations, particularly if it threatens to compete with or cannibalize existing businesses (Altman & Tripsas, 2015).

A critical yet underexplored aspect of this transition is how incumbent firms manage existing data resources. While firms may possess valuable data that could advantage a platform launch, they likely face challenges accessing and deploying this data. They may need to coordinate across business units with misaligned goals, or seek permission from existing customers or suppliers to use data in new ways within a platform model. To address these gaps, we ask the following research questions: *How do incumbent firms manage data aggregation, sharing, and usage when developing platforms alongside existing businesses? How do they leverage and adapt existing relationships with customers and suppliers in this process?*

3 | CASE SETTING AND METHODOLOGY

The issues above invite a qualitative, inductive, longitudinal approach (Tripsas & Gavetti, 2000) to explore an incumbent's efforts to develop a platform alongside existing product-oriented businesses. Our single case was selected for its revelatory quality (Eisenhardt & Graebner, 2007; Ozcan et al., 2017). By studying an incumbent firm that was actively developing a platform, we were able to observe platform development from its earliest stages, rather than reconstructing it retrospectively from successful outcomes, which is a common source of selection bias (Aldrich & Fiol, 1994; Ozcan & Santos, 2015).

3.1 | Research setting

We conducted a multi-year, field-based, qualitative, longitudinal study of an incumbent, product-oriented firm as it introduced a new platform business model in parallel with its core business. Fincorp (a pseudonym) is a leader in financial software for SMEs. Motivated by the potential to build network effects, Fincorp began developing a platform model in 2012 to connect SME customers with third-party lenders to allow the two sides to transact via Fincorp.

3.2 | Data sources

To improve accuracy and validity, we triangulated data across multiple sources, collected between 2012 and 2016. Our primary sources were semi-structured interviews, supplemented by archival documents and observational data. These sources are detailed in Table 1.

We conducted 89 semi-structured interviews between 2012 and 2016. Of these, 82 were with Fincorp personnel across levels, including senior executives and managers with input into platform development. The remaining seven interviews were with executives from complementors, providing an external perspective on platform evolution. This range of perspectives allowed for

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TABLE 1 Data sources.

Source	Details
Interviews	82 interviews with Fincorp senior management between 2012 and 2016. • Interviewees selected with input into firm platform and data strategy. • Interviewees included senior leadership at the C-Level, Director, and Senior Vice President levels, as well as Divisional Managers and Product Managers. 7 interviews were conducted with Senior leadership in complementor organizations. • Interviewees included C-Level, Director, and Founder levels. All interviews used a flexible interview protocol to reveal topics and patterns most salient to respondents. Protocol drew on both real-time and retrospective topics, capturing linkages across time.
Archival documents	Archival documents from Fincorp, which included: 20 Investor reports, 7 Transcripts of speeches made by senior management, 43 Regulatory filings, 6 AGM transcripts. Archival document review process drawing on written commentary to build an emergent understanding of the issues shaping the development and integration of an adjacent platform.
Secondary documents	Third-party commentaries from the period (7 Analyst Reviews, 19 Industry Reports). Used to triangulate accounts from primary sources (interviews and archival documents) and develop an understanding of the contextual ambiguity in the industry.

detailed insight into strategic decisions shaping the platform's direction and technological and organizational challenges and constraints that emerged during platform development.

The semi-structured interviews ranged from 60 to 90 min. We collected background information on the informant's firm and role. We then asked open-ended questions regarding major events and phases in the platform's evolution. Finally, we focused on the current state of the platform, including strategic priorities, challenges, and successes. Interviews were conducted in person, audio-recorded, and transcribed. The protocol combined open-ended narrative questions with structured questions about strategic priorities and challenges.

We triangulated data with archival sources (Jick, 1979), reviewing 76 documents, including investor reports, senior management speeches, regulatory filings, company-provided documents, and Annual General Meeting (AGM) transcripts. We also reviewed third-party commentaries (including analyst reviews and industry reports) to contextualize our findings.

3.3 | Data analysis

We followed a structured, inductive approach to analysis (Gioia et al., 2012; Glaser & Strauss, 1967), employing techniques to develop theory "grounded in the views of participants in the study" (Creswell, 2012: 14). We first organized data collected through interviews and archival sources into first-order concepts (Gioia et al., 2012). These concepts (e.g., 'codebase integration,' 'challenges with legacy infrastructure') were built by collating codes around topics in the data. We then grouped these concepts into second-order themes (Strauss, 1987) based on topic and perspective (e.g., 'technological hurdles,' 'reluctance to transact'). The second-order themes were inductively grouped together in the penultimate analysis stage to form common dimensions (e.g., 'aggregating data across organizational units,' 'complementor hesitancy to provide transaction data'), which capture relationships between second-order themes (Gioia

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et al., 2012). Dimensions were clustered around challenges in data aggregation, sharing, and usage as Fincorp developed the platform. *Aggregation* refers to the process of accessing and collecting data from external and internal sources. *Sharing* encompasses distribution within an organization and with external complementors. *Usage* refers to platform ecosystem participants utilizing data to achieve goals. See Table S1 for an overview of this data structure.

With central codes established, we sought to identify distinct phases in platform development. Temporal bracketing (Langley, 1999) pinpointed key changes marked by technological achievements (e.g., obtaining data) and shifts in complementor, customer, and other organizational unit actions. In the final stage, we returned to existing literature to compare it to patterns that emerged from our analysis. This allowed us to refine our model and ensure our findings were generalizable (Yin, 2014).

4 | FINDINGS

Our analysis revealed four distinct phases for an incumbent organization to traverse to establish a platform alongside existing product businesses. These phases and their characteristics are described in Table 2.

4.1 | Phase 1: Opportunity recognition and initial steps toward a platform model

4.1.1 | Recognizing the platform opportunity

When our fieldwork at Fincorp began, senior managers stated they had already spent "years" (022, 2013) discussing the idea of a platform to connect small- and medium-enterprise customers (SMEs) with banks and credit unions to lend money through credit products. These discussions were driven by top management team aims to "find a network effects business" (022, 2013). A senior manager noted:

> We're one of the few companies in the world that has that opportunity to be the global center of the ecosystem for small businesses and if we were to pull that off... it's a much bigger opportunity than anything else.
>
> (011, 2013)

Fincorp's SME customers had high demand for credit but were often rejected.

> So, a couple of years ago we did a survey...90 percent of all of our customers operate with some type of a credit facility. In the last two years...70 percent of all those applications were declined. So, what that basically tells you is nine out of ten small businesses need credit... [but] two out of three times that you apply for credit you'll get declined.
>
> (008, 2013)

This high rejection rate and risk uncertainty created inefficiencies for lenders. It increased the underwriting cost, limiting the pool of viable customers for their lending:

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TABLE 2 Summary of phases.

Phase	Summary of activities and bottleneck evolution
Phase 1: Opportunity Recognition and Initial Steps Toward a Platform Model	• Fincorp's management recognized the opportunity to create a platform connecting their SME customers with lenders. • Internal customer data access bottleneck: Efforts were hindered by the firm's inability to consolidate customer data that was siloed across different, autonomous business units. • External customer data access bottleneck: The platform unit also faced difficulty accessing shareable data directly from customers, which were reluctant to grant consent for its use.
Phase 2: Resolution of Customer Data Access Bottlenecks, Emergence of Data Interoperability Bottleneck	• The firm addressed the technological source of the external customer data access bottleneck by launching a cloud-based version of its software. It addressed the strategic source of the bottleneck by leveraging its market power to implement an "opt-out" data-sharing policy. • It addressed the internal customer data access bottleneck by using early results to gain top management support, which mandated firm-wide data sharing initiatives. • Data Interoperability Bottleneck: As data began to flow, a new problem arose: legacy data from desktop software was incompatible with data from the new cloud product. Fincorp addressed this with workarounds and manual data dumps. • Complementor Data Access Bottleneck: Established lenders were willing to receive data but were strategically hesitant to share their own transaction and outcome data back to the platform. Fincorp stopped requiring lenders to share outcome data to encourage them to join the platform ecosystem
Phase 3: Improving Input and Output Data	• The Data Interoperability Bottleneck was resolved by phasing out the legacy desktop product and the creation of a single, monolithic customer data repository. • The Complementor Data Access Bottleneck was navigated by acquiring third-party "proxy" data, which allowed the platform to refine its predictive models without direct data from partners. • Complementor Data Supply Bottleneck: The platform discovered that its behavioral data was highly predictive, but could not be used by established lenders as their traditional underwriting models and legacy systems could not process it.
Phase 4: Leveraging Under-utilized Platform Data to Boost Platform Activity	• To resolve the Complementor Data Supply Bottleneck, the platform sponsor launched its own

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TABLE 2 (Continued)

Phase	Summary of activities and bottleneck evolution
	credit products, leveraging under-utilized data that existing complementors could not. • This strategy filled a gap in the market, attracted new and more agile complementors capable of using the richer data, and fueled network effects, leading to sustained platform growth.

> Lenders acknowledge that it's far from optimized. They acknowledge that it's extremely expensive for them to underwrite. They acknowledge that if you want less than $100,000, if you have anything less than perfect credit, it's just not worth their time looking through all of your docs. It's just too expensive. The numbers don't work out...they don't even look at your business.
>
> (008, 2013)

Fincorp executives believed that by combining SME data with a channel to engage with SMEs, they could encourage and enable lenders to make credit decisions more cost effectively and accurately. Managers identified two mechanisms to capture value from such a platform. First, an "acquisition play" (013, 2013), allowing Fincorp to attract more customers: "if we gain a reputation as the single best place to get a small business loan, but you have to use our software, obviously, that helps us acquire more customers" (011, 2013). Second, it would enable monetization by sharing the cost savings that better data would create for lenders:

> Average APR is six percent. They know they're going to lose two and a half percent, so their spread is three and a half percent. But if we can take that two and a half percent just down to two percent, you're talking billions of dollars in increased revenue for them...we would want to share in that.
>
> (008, 2013)

Several managers that previously worked in other Fincorp roles transferred into a new platform unit starting in Q1 2012. By Q4 2012, this group had begun signing up lenders. In developing these early partnerships, the platform unit prioritized well-known lenders that could provide reputational legitimacy. As a manager explained, "quality is everything" (008, 2013). The platform unit was able to develop initial interest among large, traditional lenders fairly quickly. As one manager noted in Q1 2013: "We have four on today, and another five or six committed" (008, 2013). By early 2013, a nascent website was live allowing customers to search for lenders, but did not provide matching or transaction capabilities (Investor briefing, archived site 2013). While functionally limited, this demonstrated customer demand:

> Right now we have 25,000 customers a month coming to us looking for credit... We're now in the process of building this network of lenders...we understand those two constituents, we want to connect them.
>
> (008, 2013)

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4.1.2 | Emergence of customer data access bottlenecks

Facilitating efficient matching required that lenders have customer data access: "the secret sauce is the data which makes it a durable competitive advantage" (008, 2013). Early efforts to consolidate such data were met with two related bottlenecks: limited access to existing customer data from internal business units, and the absence of live data from current customers.

In part, this emerged as an *internal customer data access bottleneck*, stemming from customer data being siloed across different business units within Fincorp. An SME customer typically used several services across the business, sharing unique data with each (e.g., tax-relevant data with one unit and financial accounting data with another). Much of this data was relevant to credit decisions but was neither consolidated centrally nor accessible to complementors. Interviews identified that this problem was fundamentally an organizational issue: "we get a bit siloed" (008, 2013), "it's...not a technical one" (022, 2013). The reluctance of business unit managers to cooperate in any way that threatened their ownership of customer data, or relationships with their customers, slowed progress. Business unit managers outside the nascent platform group were concerned about opening up data to complementors:

> [our colleagues are] out fighting for their lives competing against other businesses...And we're now saying, 'We're going to open this up to help our customers' ...that's a very uncomfortable conversation for a lot of people because they have two competitive advantages – a data advantage and channel advantage, that no one else has. Now, we're going to potentially lose those advantages...I can't prove what the upside is.
>
> (013, 2013)

This created a significant challenge for the nascent platform unit, as noted by a software developer within this platform team: "we cannot be a successful platform if, as a developer, we have nine different groups [with] data and I've got to go to each" (013, 2013). The challenge was exacerbated by the relative disparity in size between the platform unit and other units. Platform unit managers characterized the unit as a "startup, scrappy group...solving a gnarly problem" (031, 2015), operating "without a lot of resources" (002, 2013), against larger units "with their own priorities" (038, 2015).

In this phase, an *external customer data access bottleneck* also emerged as the second hindrance to accessing customer data. While the software Fincorp sold was designed to collect large amounts of customer data, the design of the product resulted in the data residing on customers' own computers (generally on storage drives and on backup servers since this was before automated cloud-based systems were the norm). Even in the few cases where it was accessible, it was not available to share with lenders. For Fincorp to access individual customer data, customers had to regularly back up data from their own computers onto Fincorp's cloud storage service (at this time, the systems were not fully cloud-based; the customers needed to manually synchronize their data). Without this, the data remained out of reach: "that's a big, heavy lift that my team's been working on... when all of that data is locked on someone's hard drive on their desk somewhere, who cares, right?" (013, 2013). Even when data was backed up from desktop products, it was often done at infrequent intervals, resulting in a patchy and incomplete picture of the financial health of any particular SME: "...not all of our customers' data is accessible" (002, 2014).

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Even once the platform unit gained access to customer data, it would only be able to grant data access to complementors once Fincorp customers had consented to share their data. While Fincorp sought permission through in-product messaging, customers only granted permission in a minority of cases. This appeared to take platform unit managers by surprise, as many believed that connecting to lenders would provide sufficient motivation for SMEs to engage with the platform:

> They're coming to us with a problem. We're saying, 'We think we can help you, but first we need to share some of this [data] with lenders and we need to get your consent for that' and a minority say 'Okay.' That clearly has taught us that while on the one hand it's a no-brainer to us; on the other hand, there is a sensitivity to people's business files. And despite the fact that they're coming to us, in spite of the fact that we're trying to explain, 'This is how we're going to help you,' there is a bridge there.
>
> (008, 2013)

These customer data access bottlenecks prevented the platform unit from functioning as a true matchmaking platform. To compensate, the unit implemented a workaround; by administering a 15-point questionnaire to customers actively considering credit products, the platform group was able to supplement its limited data and better provide guidance to allow complementors to assess creditworthiness. A platform unit manager explained:

> And so today, you answer a few questions and then we connect you to a lender that we think makes the most sense... then from that point on you go and kind of formally apply with the lender. The vision is the data that we have on the customer... all of that we can use behind the scenes to match customers...It's kind of a cold hand-off because we don't pass data to the lender and so the customer has to start all over with the application there.
>
> (002, 2013)

While this allowed for an early form of matchmaking between customers and complementors, it was a highly limited workaround. The questionnaire provided just enough data to enable basic matchmaking but was insufficient for lenders to make fully informed decisions. It lacked the depth of insight and analysis required for lenders to commit to credit decisions and thus find real value in the matchmaking abilities of the platform (and thus incentive to participate). At the same time, requiring customers to complete the application process directly with lenders after the initial match fragmented the experience for customers; as noted by a platform unit manager: "The product experience today is actually worse than if you went to the lender itself" (002, 2013).

4.2 | Phase 2: Resolution of customer data access bottlenecks, emergence of data interoperability bottleneck

4.2.1 | Resolving the external customer data access bottleneck

Phase 2 was marked by concerted efforts by the platform unit to move away from a "cold leads" model and begin to function fully as a matchmaking, transaction platform. This was

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underpinned by two changes in the way Fincorp accessed and stored customers' data to address the external customer data access bottleneck. First, Fincorp resolved the *technological source of the bottleneck* by launching a cloud-based version of its financial software. This online "native" (038, 2015) product bypassed local desktop storage, eliminating the need for customers to manually sync their data, and instead automatically synced customer financial and company data (including data often used in underwriting, such as company revenue and EBITDA) directly to a cloud-based system. The aim of this product revision was to create a repository of "live" (007, 2013) customer data, without any lags or need for customer intervention. For lenders, this live data provided a more accurate reflection of the current status of the potential borrower's SME's underlying business.

Second, to address the *strategic source of the bottleneck* (i.e., customers not being easily willing to share their data), Fincorp made a significant change to its data sharing policies in Q2 2013. It transitioned to a model where syncing was enabled by default, requiring users to actively choose to disable it. Fincorp's ability to impose this change was partly due to its strong market share and power over a "completely fragmented market" (013, 2014) of SMEs. Fincorp's software had become deeply embedded in the day-to-day operations of these businesses, creating high switching costs. As one participant explained, "there is some lock-in... If I'm already storing the documents you need in case you get audited, if I'm already creating payments for you, if I'm already sending your 1099's out, it's very hard for you to change" (013, 2015).

4.2.2 | Resolving the internal customer data access bottleneck

The platform unit also worked to consolidate data across various business units. During Phase 1, the platform unit addressed this challenge through diplomatic "uncomfortable conversations" (013, 2013) with managers from the largely autonomous business units. The slow progress of this approach led platform unit managers to focus on influencing top management instead:

> We've been on this for years in terms of trying to influence the business units and... we've tried a couple of different routes. We started off with bottoms up, where we as individuals go work with the heads of the business units and try to convince them that an idea is a good idea...with not so good results. Probably our greatest success was convincing [the CEO] and their staff that something was important. Then it became corporate strategy.
>
> (016, 2013)

One strategy they used to alleviate this was to address the strategic source of it, that is, other business units' unwillingness to share data. To resolve this, they approached top management to get buy-in for internal data sharing by demonstrating the potential impact of the platform. They deployed an algorithm that leveraged the small amounts of data they already had. This led to the top management team—including the CEO—becoming strategically "aligned" (016, 2013) and thereafter taking an active role in mandating cooperation. A manager explained:

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> So we showed them...we actually have been running experiments to prove that it's predictive, and we've been doing matchmaking between our banks and our small businesses; and we've, already, through just a small pilot, done three million dollars' worth of loans that are very positive, and that's a way to use data that starts to create opportunities.
>
> (003, 2014)

These results provided the empirical evidence needed to secure strategic alignment with top management (016, 2013). The unit's achievements boosted its internal credibility, demonstrating the platform as a potential sustainable competitive advantage.

> We take that to top management...show that it's a source of durable advantage that's remained pretty elusive to us to this day...[CEO] helped evangelize this.
>
> (003, 2014)

The buy-in from top management also addressed the technological source of the bottleneck (i.e., the lack of an internal system for data sharing at Fincorp). The platform unit convinced top management to task the Chief Technology Officer with leading the development of a Financial Data Platform (FDP), integrating technologies from each of the business units at both a data and service layer (004, 2014). A business unit manager described:

> Our CTO mandated that we need to have standardized services that are exposed to both internal users as well as third-parties...[for example], if I go to developer.facebook.com I can get everything I need to build a Facebook app, and we wanted to make it that easy that any third-party developer should be able to go in, read the documentation, try it out, and then start culling those APIs.
>
> (027, 2014)

Critically, the initiative was championed by top management as an organizational effort to address operational inefficiencies. As one of the C-suite technical executives explained,

> If I'm in [our software] and I need to use some capability in [one of the software modules]...almost impossible to do. So, what we are trying to say is: No, this is not going to be the state of affairs going forward. In fact, at the data tiers we are going to share data and we're going to share infrastructure.
>
> (030, 2014)

Top management ensured this framing resonated with business units by emphasizing shared organizational benefits, such as significant cost reductions. The same executive elaborated, "Our CAPEX and OPEX cost...it has a huge impact because we spend essentially three times the money on the same thing right now" (030, 2014).

4.2.3 | Emergence of data interoperability bottleneck

In Phase 2, Fincorp succeeded in increasing the volume of live SME data it was able to share with lenders. However, this progress revealed a new challenge: as the internal and external data

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bottlenecks were addressed, a new *data interoperability bottleneck* emerged. Although data was now more accessible, the lack of compatibility between different data sources and repositories hindered the creation of a single, accessible dataset for complementor lenders.

Managers found that the data from the old systems were not interoperable with data from the newer cloud-based systems. While both data sources included the same information types (e.g., financial records, tax codes, payments history), they differed in ways the data was structured: "[the systems that collect the data] are distinct at a foundational level...the codebase is different" (002, 2014). This slowed efforts to attract complementors, as data from many long-term customers, who predominantly used the older desktop software, remained largely beyond reach.

> The flawed notion we kind of carried for a long time was this idea of the desktop and cloud products being equal, allowing us to say to complementors 'the data is actually interoperable between them and we'll allow you to use it.' It did not work. So, desktop is now in kind of a separate box right now...it's not a seamless integration.
>
> (030, 2014)

This was particularly problematic since customers that used the old desktop software were among the most valuable, often associated with mature businesses and thus demand for bigger loans: "In desktop...we tend to fund larger dollar loans. And we do that because it tends to be the more established businesses who have been on it for a longer period of time" (031, 2015).

4.2.4 | Workarounds

Platform unit managers attempted to overcome this interoperability bottleneck through workarounds. They formatted and pooled desktop customers' data into a "data dump" every four to five months (027, 2014). They then extracted from there some of the missing information required by lenders:

> We should be able to read their company ID...and then in our backend we had a dump of one million customers and their data. So, what we would do is if somebody comes in from the desktop product...we would link them up in our backend and then do some prefilling on the website so that things like what was your revenue, how many employees do you have, can be prefilled.
>
> (027, 2014)

While this workaround provided some desktop customer data to lenders, the data was still not live, requiring snapshot uploads. Lenders required additional, more up-to-date data from customers to verify circumstances before any transactions could take place. This failed to support the platform's end goal of matching customers with credit products without customers having to begin an application: "we want to get all this data...match it with the lender criteria and then show it to our customers without actually asking them any questions" (027, 2014).

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4.2.5 | Emergence of complementor data access bottleneck

In this second phase, managers also began to recognize a new external bottleneck arising from the inability and reluctance of established lenders to complete transactions on-platform. While established lenders had begun using the platform to source leads, most of them completed lending transactions through their own websites. Completing transactions off-platform diminished the platform's ability to capture economic value, as referral fees generated limited revenue: "Our referral fee is like two percent of the loan amount. So, you're talking small numbers even if you blew this out of the water" (002, 2014). While referral fees sufficed in the early stages of platform development, they were insufficient for long-term growth. From the platform's formation, the optimal monetization strategy had been to capture a share of lifetime loan revenue, rather than a referral fee at loan issuance: "The interesting part is more on the... 'Hey, how does this become a platform where we can start getting a piece of the revenue that's associated with the loan itself?'" (002, 2014). Without such a shift, the platform remained a lead-generation tool, failing to adequately capture the value it created.

This bottleneck was partly technological, driven by lenders' inability to integrate on-platform transactions with their "legacy" infrastructure and risk assessment tools (035, 2015). However, the bottleneck also had a strategic source: lenders were hesitant to share information that might be useful to competitors (008, 2014). Sharing transaction or approval data "could help competitors...wasn't an arrangement that they wanted to be part of" (031, 2015). They were happy to use the repository of SME data to pre-select customers, but preferred to complete transactions off-platform.

Without on-platform transactions, the platform unit also lacked outcome data to refine its predictive model: "the data work was really geared at 'can we build a predictive score based on the customer data that we have?'...The thing that we were lacking was a lot of outcome data" (002, 2014). This lack of transaction (or outcome) data limited the platform's ability to refine its predictive model for matching customers and complementors. This, in turn, restricted the platform's value to new complementor lenders: "without that data...we have no burden of proof to persuade them to use us" (008, 2013).

Having seen that this bottleneck had a strategic component, the platform unit stopped requiring lenders to share transactional outcome data in order to participate on the platform.

> In the first couple of iterations of this we asked for quite a lot of integration with them. We now ask for no integration. In the first couple of iterations of this we asked for quite a lot of data sharing. We now ask for no data sharing. [We] realized that the thing we need to do differently is make the bar to entry just ridiculously low or, potentially, just zero; because we were creating objections by asking for things that made perfect sense to us that caused a different internal group at a bank to be involved.
>
> (008, 2013)

Overall, Phase 2 saw the initial internal and external customer data access bottlenecks resolving, but new bottlenecks arising at subsequent stages of platform development. As internal data became available from other business units, interoperability of this data with live customer data emerged as a new *data interoperability bottleneck*. Externally, another bottleneck emerged as customer data started flowing to complementors. Transaction data did not flow back to the platform for technological and strategic reasons on the lender or complementors' side, resulting in

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a *complementor data access bottleneck*. These new internal and external bottlenecks slowed the platform unit's ability to improve its predictive model and demonstrate the platform's value to customers and complementors.

4.3 | Phase 3: Improving input and output data

Phase 3 was defined by efforts to address continuing gaps in SME input data and refine the predictive matching model even without lender-provided transaction outcome data.

4.3.1 | Aggregating customer datasets

Fincorp's management team decided that by late 2014 they would entirely discontinue support for the desktop product (Investor briefing, 2014) to drive a transition to the cloud product: "So we've actually sort of cut the cord, right... we will stop support of the desktop sync manager" (007, 2015). This produced a single, monolithic customer dataset. This "critical mass" (028, 2014) of shareable SME data provided a basis through which both Fincorp and lenders could perform creditworthiness analyses, and lenders could then make decisions and transact with customers on-platform: "We've crossed a bunch of commercial milestones. And part of the secret is that...We're now prepopulating applications for 95% of the population...allowing lenders to make decisions" (031, 2014). This provided a sustained solution to the *data interoperability bottleneck*.

4.3.2 | Acquiring proxy data to fill gaps

To address the *complementor data access bottleneck* (i.e., lack of outcome data from lenders) that arose in Phase 2, the platform unit decided in 2014 to acquire third-party "proxy" (006, 2014) data on firm creditworthiness from a global credit reporting firm. This data included credit scores and business-by-business breakdowns on the credit levels each firm held, and any missed payments. This data had the effect of "closing the loop" (006, 2014) for the platform's predictive model. With proxy outcome data in place, they refined the predictive matching:

> We don't know the outcomes of decisions, and so we turned to get a download of outcome data from decisions that other lenders had made over the past few years. We have used that data from [a credit reporting firm] to build the predictive model. (002, 2015)

This third-party data also enabled the platform unit to determine which characteristics in the SME data were predictors of creditworthiness, refining the platform's matching capability. It also provided the ability to "prove" (028, 2014) to lenders that the model was accurate. The platform unit used this to encourage lenders to engage directly with the platform, leading some to complete transactions using platform data, which contributed to a partial resolution of the bottleneck.

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4.3.3 | Emergence of complementor data supply bottleneck

Fincorp's increasingly large dataset not only included SME customer business operations data, but also behavioral data (e.g., how often customers used the software, which other Fincorp products they purchased). For Fincorp, this data proved to be highly useful in predicting SME creditworthiness:

> How many times you have logged in a week for the last three years is predictive of your risk on default...logging in a reasonable amount is a good thing relative to people that don't log in very much. But logging in too much makes you more risky... there's a correlation there with having an extremely limited cash flow...we can partner that with what product do you buy from us? What other products do you buy from us? How frequently do you upgrade? Believe it or not, whether you started with a trial version or not is predictive of risk.
>
> (008, 2014)

However, this richer data did not fit lenders' standard underwriting models. Lenders, especially more traditional ones, mostly made decisions based on revenues and credit scores:

> (There is) data such as revenue, EBITDA...the specific data that they need. There's a lot more data in the platform...(Lenders) just want to focus on the data that goes into the underwriting decision. So that's the data that we send in real time.
>
> (031, 2015)

This underpinned the final data-related external bottleneck Fincorp encountered: existing complementors, which were mostly well-established, large lenders, could not integrate different types of newly available platform data and analyses into their legacy decision-making frameworks (a *complementor data supply bottleneck*). Managers felt the platform's true potential was unrealized: "we want to drive them to use all the business data. (We) truly feel like it's more predictive" (031, 2015). Fincorp managers expressed concern that lenders' inability or unwillingness to use business-level data impacted the platform's ability to deliver more competitive prices and faster, more convenient transactions:

> There is an unmet need for a low-price product with low effort...In order to really achieve that vision, that decision has to be primarily made on the business, and that involves leveraging all the data that we have access to.
>
> (002, 2015)

Lenders' inability to integrate business and behavioral data and analyses also had implications for some SME customer groups on the platform. For more established customers, the lender offers on the platform—using a more limited dataset—were less attractive than pursuing credit with their existing banks; these banks could provide more competitive rates to customers with which they had worked for years. As one Fincorp leader noted, "our best customers are still having the hardest time on the platform" (031, 2015), which was a frustrating and counterintuitive dilemma for Fincorp.

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The complementor data supply bottleneck was exacerbated by a distinction in the types of credit products that larger customers needed. While the platform had focused on term loans, many larger customers needed drawdown or "line of credit" (002, 2015) facilities:

> When one business does business with the other, what they typically do is ship, send an invoice, and get paid in 15 or 30 days. A lot of bigger companies abuse that...small businesses are getting more and more squeezed. Their invoice volume is growing and the terms outstanding are longer. So there's even more of a need for them to have working capital.
>
> (031, 2015)

The next (fourth) phase was thus characterized by an effort to resolve this bottleneck.

4.4 | Phase 4: Leveraging under-utilized platform data to boost platform activity

4.4.1 | Becoming a complementor to leverage under-utilized data

The platform unit's dissatisfaction with the price and type of credit products lenders offered to Fincorp's larger customers presented an opportunity for Fincorp to leverage unused business-level and behavioral data. Leveraging the third party-sourced outcome data acquired in Phase 3, the platform unit developed the ability to make accurate predictions about risk and pricing for drawdown credit products. This created the opportunity to underwrite and offer these forms of credit themselves.

> There was a sense that we need to put our money where our mouth is and lend. And so we took this project to the CEO and CFO, and got approval to pursue this. We initially were looking to invest about $10 million dollars of our own money... [so] you have almost two businesses now, we have the platform, and then you have this integrated product.
>
> (002, 2015)

To facilitate this, Fincorp engaged a third-party administrator for loan "service and collection" (031, 2015) as required by regulation, while retaining the underwriting function. Fincorp built these line-of-credit products, which did not compete with other lenders' products, using data that was not being used by other lenders: "It does require deeper data...There is deeper integration in that regard" (031, 2015). Over time, the accuracy of Fincorp's model increased as it gathered larger supplies of recent data, reducing the need for additional customer input: "If they continue to put a lot of data in the cloud, we can help them even more and say, 'Look, your business has grown even more. Congrats. We've upped your line to $75K,' or something like that" (031, 2015).

A central concern had been that launching a credit product would deter complementors because the platform would be competing with them. As one senior Fincorp executive noted in 2013: "one of the keys is we never become a lender because the minute we become a lender we compete on our own platform, we put ourselves at odds with our lenders" (008, 2013). However,

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by using data lenders could not use to offer a product that lenders did not offer on the platform, they realized they could limit resistance from complementors:

> It's a gap that's not offered, and in the marketplace, we've had very good success with the less-established businesses. In some of the younger businesses, [at] the very high end of the credit spectrum, there wasn't this perfect match of speed and ease with a very low fee.
>
> (031, 2015)

Furthermore, by enabling the platform to offer a wider and more diverse range of credit products Fincorp attracted a larger pool of SME customers, enhancing network effects and providing additional leads for complementors.

> A lot of lenders on the platform side... are equally excited and don't view it as a threat, but view it as a huge opportunity to work together. They get that there was a problem for many of our customers. We have kind of separated it into two, and... our partners are perfectly fine with it.
>
> (002, 2015)

4.4.2 | Curating the platform with more agile complementors

By the end of Phase 4, Fincorp's activities had also turned toward fostering its complementor base. The network effects from Fincorp's own credit products attracted new types of complementors beyond established lenders. Throughout 2015, managers reported that they were building a "growing ecosystem" (018, 2015) of smaller, more agile financial service providers capable of utilizing Fincorp's customer data to create new products directly on the platform. Managers attributed these enhancements to data utilization: "Every application becomes custom to you. That's an awesome experience, and you can only do it with data" (045, 2015). The lending platform thus became the foundation for a broader ecosystem, which managers described as an "operating system" for small businesses (018, 2015): "end users may come to your ecosystem for one of your apps, then stay because of the network of applications you have around it" (045, 2015). By 2022, this ecosystem had grown to become a larger portion of the organization's revenue (Annual Report, 2022).

5 | A PROCESS MODEL: DATA BOTTLENECKS AND STRATEGIC RESPONSES

Our findings reveal a generalizable process model of how incumbent firms navigate data bottlenecks when developing platforms alongside existing product businesses. Table 2 provides a summary of each phase. Across the phases, we abstract three cross-cutting process dynamics that together constitute the model's core logic. Table 3 provides a summary of each bottleneck's technological and control dimensions, strategic responses, and contextual enablers.

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TABLE 3 Summary of bottlenecks.

Bottleneck	Dimensions	Strategic response	Contextual enablers
External customer data access. Customers reluctant to consent to share data with lenders; customer data locked on local desktops, not in shareable form.	*Technological*: Data resided on local desktops, requiring manual syncing to Fincorp's cloud—producing a "patchy and incomplete picture" of SME health. *Control*: Customers consented only in a "minority" of cases, reflecting an unanticipated "sensitivity to people's business files."	Short-term: questionnaire for customers, enabling basic matchmaking. Long-term: (a) launched a cloud-native product auto-syncing financial data; (b) shifted data sharing norms to opt-out.	Strong share of a "completely fragmented" SME software market plus high switching costs ("lock-in") let Fincorp impose opt-out without significant attrition.
Internal customer data access. Customer data siloed across autonomous business units; no consolidated dataset available to the platform unit.	*Technological*: No unified infrastructure existed; data held in discrete silos. *Control*: Business-unit managers resisted, viewing data as one of "two competitive advantages—a data advantage and channel advantage." The platform unit lacked authority over larger units.	Short-term: "uncomfortable conversations" with business-unit heads. Long-term: pilot results won TMT alignment; mandating cooperation, CTO builds a Financial Data Platform (FDP).	The platform unit's proof of concept from limited data, and a cost-reduction framing that resonated independently of the platform rationale.
Data interoperability. Legacy desktop data incompatible with cloud data at a foundational level.	*Technological*: Desktop and cloud systems were "distinct at a foundational level". *Control*: Long-tenured desktop customers were the least likely to migrate voluntarily, keeping the highest-value SME data beyond reach through technical fixes alone.	Short-term: periodic "data dumps" (every 4–5 months) extracting key fields to prefill applications. Long-term: discontinued the desktop product entirely.	Market power limited attrition from forced migration. Willingness to absorb short-term disruption from discontinuing an established product.
Complementor data access. Lenders willing to receive customer data but unwilling to share their own transaction and outcome data.	*Technological*: Lenders' "legacy" infrastructure and risk tools could not support on-platform transactions, so lending completed on lenders' own sites. Outcome data remained off-platform. *Control*: Lenders were hesitant to share data that "could help competitors."	Short-term: dropped data-sharing and integration requirements. Long-term: acquired third-party proxy data from a credit reporting firm, "closing the loop" on the model.	An available third-party credit-reporting market; proxy data also fulfilled "burden of proof" to recruit further lenders.

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TABLE 3 (Continued)

Bottleneck	Dimensions	Strategic response	Contextual enablers
Complementor data supply. Lenders unable or unwilling to integrate novel data into traditional underwriting.	*Technological*: Lenders' legacy underwriting was built for standardized inputs and could not process behavioral data (e.g., usage patterns, trial history) that proved highly predictive of creditworthiness. *Control*: Technological inability was compounded by unwillingness to adopt novel data types.	(a) Launched its own credit products (line-of-credit), using data lenders could not process to offer products they did not. (b) Recruited smaller, more agile financial service providers able to use the platform's richer data.	Data heterogeneity allowed Fincorp to target customer needs that established lenders were not addressing.

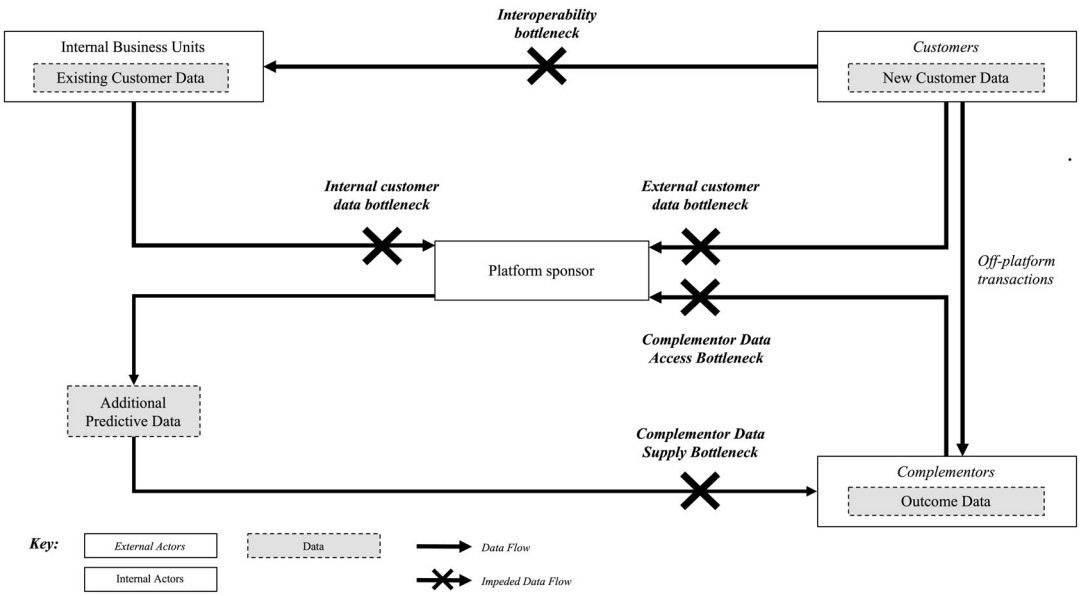

FIGURE 1 Data bottlenecks.

5.1 | Cascading bottleneck emergence

A central feature of our process model is that data bottlenecks emerge *generatively*: the resolution of one bottleneck reconfigures the constraint landscape and leads to the development of the next (Figure 1). This sequencing follows a directional logic: bottlenecks related to data *access* (obtaining data from internal units and external customers) must be resolved before bottlenecks related to data *interoperability* (making heterogeneous data sources compatible) emerge, which then in turn must be addressed before bottlenecks related to data *utilization* (whether complementors can absorb and act on the data supplied) arise. This cascading pattern

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means that firms cannot plan for (or address) a fixed set of bottlenecks at the outset; rather, each resolution leads to new constraints as the platform develops and matures. This generative dynamic distinguishes data bottlenecks in platform emergence from static resource constraints: they are not a checklist to be resolved, but rather an evolving sequence in which each solution leads to a reshaped problem space.

5.2 | Strategic responses to bottlenecks

Our model suggests that the strategic responses available to a platform sponsor at each bottleneck are shaped by the power dynamics, and the strategic and technological constraints it faces. The first response is to *leverage structural power to impose new terms*. When the platform sponsor holds power over relatively fragmented actors, it can impose new terms directly. For instance, changing data-sharing defaults, mandating internal data consolidation, or discontinuing legacy products to force migration. This response is available when switching costs are high and the affected actors lack collective leverage to resist. In our case, this took the form of shifting from opt-in to opt-out data sharing and discontinuing the legacy desktop product to force migration.

Second, platform sponsors can *demonstrate value with imperfect (potentially temporary) data to secure cooperation*. When data is controlled by actors the sponsor cannot coerce, whether internal business units resistant to sharing or external complementors unwilling to provide transaction data, the platform unit can rely on workarounds and proxy data to demonstrate the platform's potential and build engagement momentum and network effects. This relies on a distinctive property of data as a resource: unlike physical assets, data can be sampled, proxied, and piloted at small scale to demonstrate value before full access to the preferred data is secured. Pilot results from limited or proxy data can persuade managers to mandate cooperation. Interim data sources such as questionnaires, periodic data extracts, or third-party proxy data can accelerate and sustain development while longer-term data access is negotiated.

Third, platform sponsors can *strategically innovate to circumvent a bottleneck*. When established complementors cannot or will not change their processes or offerings—due to legacy infrastructure, risk aversion, or concerns about aiding competitors—the sponsor can circumvent the bottleneck rather than resolve it directly by innovating its own processes and offerings. This may involve entering the complementor space itself to serve unmet customer needs. One way to do this is to use data that existing complementors cannot absorb or add new offerings that are attractive to more agile customers, especially those capable of utilizing richer data types. This serves to broaden and diversify the complementor portfolio and provides new roles for the platform sponsor to play within the ecosystem.

These responses are not mutually exclusive within a single bottleneck, nor do they follow a rigid sequence. However, the broad pattern suggests that imposing new terms is feasible earlier in the process when the sponsor confronts fragmented actors, while circumventing bottlenecks through innovating in the ecosystem becomes a compelling alternative later when the sponsor confronts entrenched actors whose behavior it cannot change. Workarounds and proxy data strategies appear throughout, serving as bridges that build and maintain platform momentum while longer-term solutions can be pursued.

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5.3 | Interdependencies across bottlenecks and responses

A third dynamic concerns the linkages between responses. The resolution of upstream bottlenecks not only leads to the development of downstream ones, but also shapes the strategic options available to address them (Figure 2). Securing internal data consolidation created the technical infrastructure that made the interoperability bottleneck emerge. Acquiring proxy data to circumvent the complementor data access bottleneck enabled the production of the predictive model whose limitations revealed the complementor data supply bottleneck, which did not exist until the model was sophisticated enough to identify what established lenders could not absorb. The decision to become a complementor was only feasible because earlier bottleneck resolutions produced data assets, predictive capabilities, and a market situation that enabled Fincorp to underwrite credit products.

6 | DISCUSSION

6.1 | Contributions to literature

Our findings challenge and extend existing theoretical perspectives in three areas: the nature of ecosystem bottlenecks, the competitive implications of data heterogeneity, and the mechanisms through which peripheral units gain influence over organizational resources. In each area, our findings depart from the predictions of existing theory in ways we summarize in Table S2 and develop below.

6.1.1 | Data bottlenecks as dynamic constraints

Our study enhances scholars' understanding of platform development by highlighting the intricate data bottlenecks incumbents must resolve when developing platforms alongside existing

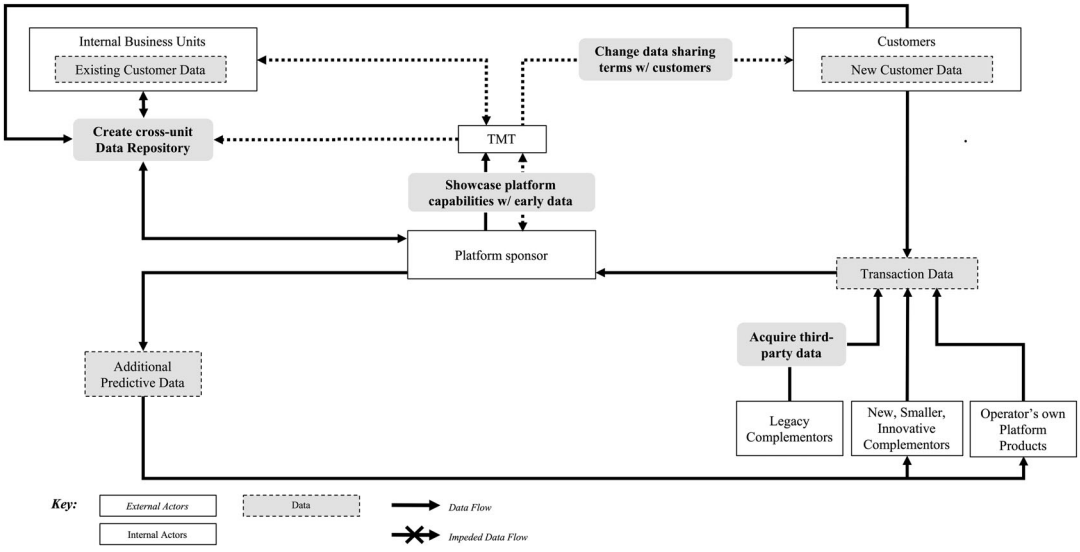

FIGURE 2 Approaches to bottlenecks.

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product businesses. While existing research has examined technical and organizational challenges in platform transitions (Cozzolino et al., 2018; Dyck et al., 2024; Hagiu & Altman, 2017), we build on and refine these insights by identifying distinct bottlenecks related to *data aggregation, sharing, and usage*, which are critical requirements for platform network effects, at various phases of the platform development process. These bottlenecks manifest both internally–through fragmented systems and inter-unit strategic tensions over data control–and externally through various stakeholders' strategic reluctance and/or technical inability to share data. In addition, we show that when an organization develops a platform alongside an existing business, part of the required input data is internal and part of it is external, which can lead to interoperability bottlenecks. By examining how these bottlenecks emerge, transform, and interact over time, we uncover how firms identify and navigate data-related constraints. Our findings highlight not only bottlenecks, but also technical solutions and strategic maneuvering to overcome these challenges.

Our findings also directly map to and extend recent research into different types of bottlenecks (technology, capacity, and control) identified in ecosystems by Furr et al. (2025). The data bottlenecks we identified all have a technological source (e.g., lack of compatible infrastructure to share data), but are simultaneously control bottlenecks (Furr et al., 2025) partially driven by various stakeholders' (internal business units, customers, and complementors) unwillingness to give up control of, and thus restrict access to, their data. This suggests that in data-intensive platform settings, the distinction between technology and control bottlenecks (Furr et al., 2025) is less analytically clear-cut than existing typologies imply: both dimensions co-occur within the same constraint, and addressing one in isolation may leave the other intact. Technological issues like data access or interoperability, for instance, often mask deeper strategic tensions over data ownership and control within business units (control bottlenecks). Similarly, complementors may face technological hurdles integrating platform data (technology bottlenecks), which are compounded by concerns about sharing sensitive information that might benefit rivals or disrupt market positions (control bottlenecks). Our study illustrates the interrelated technological and control dimensions of data bottlenecks: rather than being purely technological or purely control-based phenomena, technical capabilities and control interests jointly impact data aggregation, sharing, and usage.

More broadly, a growing body of research presents typologies distinguishing among different forms of ecosystem constraints and interdependencies, for example, upstream versus downstream challenges (Adner & Kapoor, 2010), bottleneck positions and value dynamics (Baldwin, 2015; Jacobides & Tae, 2015), and technology, capacity, and control bottlenecks (Furr et al., 2025). These typologies have advanced our understanding of how ecosystem constraints shape value creation and capture, but they implicitly treat individual constraint types as discrete problems that can be diagnosed and resolved independently. We show that in data-intensive platform settings, especially in platform emergence, these constraints are not separable: the same bottleneck has both technological and control dimensions, addressing only one may leave the other intact.

Finally, our study reveals how incumbent firms navigate data bottlenecks through both direct and indirect strategies. These findings extend existing work on bottlenecks as points of value capture (Baldwin, 2015; Jacobides et al., 2018) by revealing unique properties of data bottlenecks in platform settings. Unlike traditional bottlenecks that typically represent fixed technological or resource constraints, data bottlenecks are more fluid and can be circumvented through indirect approaches. Our study shows how firms can strategically maneuver around data constraints they cannot directly control, for instance, by acquiring proxy data or

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introducing complementary innovative offerings. Importantly, the malleable nature of data as a resource means that efforts to resolve these bottlenecks can generate new opportunities for value creation, as demonstrated when the firm leveraged under-utilized, newer data types to develop novel platform services. This highlights how data bottlenecks function not only as barriers to growth but also as catalysts for strategic innovation that shape platform evolution.

Moreover, while existing typologies distinguish between upstream and downstream ecosystem challenges and show that they differentially affect firm performance (Adner & Kapoor, 2010), our process model reveals that these challenges can also develop in sequence, with the resolution of upstream data access constraints leading to downstream complementor-side data bottlenecks. This means that firms cannot simply plan for a fixed set of bottlenecks; rather, they must anticipate that each resolution may reconfigure the constraint landscape.

6.1.2 | Strategic implications of data heterogeneity

Our findings show that data has asymmetric value across actors (including platform sponsors and various stakeholders) and across platform development phases, such that its importance and utility vary significantly depending on actors' roles and the platform growth stage. Previous research shows that data access drives platform engagement but tends to treat data as relatively uniform in competitive implications. Our findings show that data is not homogenous: data varies in strategic sensitivity, that is, the degree to which sharing exposes the owner to competitive risk, and in the absorptive capacity it demands from potential users (which are sometimes platform complementors). This means that data shapes actor interests and actions, but not uniformly.

In our study, we observed that some data types are high in strategic sensitivity and critically valuable to both actors that control them and also to other actors. For example, lenders' outcome data is strategically valuable to the lender and to the platform sponsor for refining predictive algorithms, which also potentially benefit other complementors (lenders). Such data ends up being closely defended by the owner/generator to protect its own interests in the platform ecosystem. Other data types are lower in strategic sensitivity, so they are valuable to other actors but pose less competitive risk to the owner/generator (e.g., SME behavioral data). This data may be more freely supplied or revealed, but not immediately utilized by other platform actors; not all actors have the same degree of absorptive capacity (Cohen & Levinthal, 1990) vis-à-vis data. Established complementors may lack the ability to accommodate and utilize novel data, whether due to organizational risk attitudes (e.g., toward novel behavioral data), or technological challenges of integrating data with different software architectures and codebases. It is this combination—data that is low in strategic sensitivity yet exceeds established complementors' absorptive capacity—that creates segments a platform sponsor can occupy without direct competitive overlap with other ecosystem participants.

These insights directly address a central tension in the platform literature. Previous studies emphasize trade-offs facing a sponsor potentially competing with complementors on its own platform (Gawer & Henderson, 2007; Rietveld & Schilling, 2021; Wen & Zhu, 2019; Zhu & Liu, 2018). Extant theory anticipates that there are very few pathways through which a platform sponsor can act as a complementor on its own platform without cannibalizing value that otherwise would accrue to other complementors. The interaction between strategic sensitivity and absorptive capacity reveals two such pathways.

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First, when data is low in strategic sensitivity but exceeds complementors' absorptive capacity, there is an opportunity for a platform sponsor to provide products and services on its own platform without direct competitive overlap. Second, variation in absorptive capacity across complementors creates natural segments in the complementor landscape. While more mature, established firms serving as complementors may provide early legitimacy through their reputation, their rigid processes and legacy systems may limit them to utilizing only standardized, traditional data. Platform sponsors can leverage this variation by gradually recruiting and engaging with newer complementors, which have technological capabilities and business models that enable them to extract value from more complex or novel data. This complementor expansion and segmentation allows platforms to maintain legitimacy with established players while fostering innovation through new entrants, each group utilizing different data types. Together, these mechanisms show how data heterogeneity enables platform sponsors to capture value in multiple ways without necessarily competing directly with complementors. While prior research emphasizes the risks sponsor entry poses to ecosystems (Gawer & Henderson, 2007; Zhu & Liu, 2018), it has not identified specific mechanisms for sponsors to systematically avoid competitive overlap. Our findings suggest that data heterogeneity, and variation in strategic sensitivity and complementors' absorptive capacity for different data types, provides mechanisms for sponsors to enter market segments that existing complementors have effectively vacated.

This dynamic extends across contexts: healthcare platforms may generate patient behavioral data that exceeds complementor providers' absorptive capacity; ecommerce platforms may collect shopping pattern insights that traditional merchants cannot effectively process. By identifying these limitations in complementors' absorptive capacity for heterogeneous data, platforms can strategically enter specific market segments that do not compete directly with complementors and serve customers' unmet needs.

6.1.3 | Resource dependencies and power dynamics in platform governance

While research emphasizes data aggregation, sharing, and utilization as critical for platform growth (Gawer, 2021; Saadatmand et al., 2019), business units that have developed valuable customer insights through their products often vigorously resist efforts to pool their data, even when doing so could create broader organizational value. This resistance reflects wider patterns of resource dependencies in organizations (Casciaro & Piskorski, 2005), where units controlling valuable data can exert significant influence over organizational initiatives.

While existing research shows how units typically resolve dependencies through formal authority or bargaining power (Casciaro & Piskorski, 2005; Pfeffer & Salancik, 1978), our findings reveal a different path: peripheral platform units can overcome data bottlenecks, and thus data-based dependencies, by strategically demonstrating early value despite limited data access. In our case, the platform unit used manual data dumps and then other workarounds to show promising early results, which helped convince top management to mandate broader data sharing. These findings contribute to resource dependency theory (Pfeffer & Salancik, 1978) by revealing alternative pathways to organizational influence in contexts of fragmented resource control. Our research shows how peripheral units can use limited, imperfect data with workarounds and manual processes to demonstrate potential to generate superior value from resources controlled by other units. We identify a mechanism where resource access is gained not initially through formal authority or bargaining leverage, but via empirical demonstration of differential value creation potential and then evidence-based management persuasion.

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Resource dependency theory would expect a peripheral unit without formal authority or bargaining leverage to remain dependent on more powerful units. Our findings suggest that when resources are under-utilized within their current organizational configuration, demonstrating superior value creation potential—even in cases of initial limited access—can alter patterns of resource control and organizational influence.

This mechanism differs from those typically emphasized in resource dependency theory: formal authority, bargaining leverage, or the absorption of uncertainty (Casciaro & Piskorski, 2005; Pfeffer et al., 1976; Pfeffer & Salancik, 1978). It is particularly applicable when the resource is data, which, unlike physical assets, can be sampled, proxied, and piloted at small scale to demonstrate value.

Our findings also add nuance to platform governance frameworks that emphasize the sponsor's role as ecosystem architect with authority to shape complementor behavior (Boudreau & Hagiu, 2009; Rietveld et al., 2019). In our case, established firms serving as complementors successfully resisted data-sharing requirements, and the sponsor responded by lowering barriers to entry. This extends governance frameworks emphasizing the sponsor's top-down authority and ability to shape complementor behavior (Boudreau & Hagiu, 2009; Rietveld et al., 2019) by showing how peripheral units can build governance influence from below through demonstrated value creation with limited resources.

Regarding external relationships, our study provides a nuanced view of how firms can navigate these over time during platform development. First and aligned with theories of power dependence (Pfeffer & Salancik, 1978), well-established incumbents can exploit relative power over (fragmented, small) customers by changing terms and gathering user data onto the platform. Large, high-profile partners may be necessary at the beginning to boost the reputation and trustworthiness of a new initiative (Baum et al., 2000; Ozcan & Eisenhardt, 2009; Stuart, 2000). But these partners are a double-edged sword as they may be harmful for fueling network effects through data because of their inability to operate with it and/or unwillingness to do so. We find that in these cases, emergent platform sponsors need to compensate for data scarcity with externally acquired data and workarounds to jumpstart their platform.

Finally, our findings show that a platform sponsor can orchestrate a strategic change in complementors over time to align with its strategic vision. As more data is aggregated and generated, the platform can become more attractive to innovative complementors (typically smaller, more fragmented) that are willing and able to harvest and leverage complex and novel data more effectively than large but less cooperative complementors. This proactive, strategic evolution of a complementor portfolio is consistent with platform governance theories emphasizing sponsors' need to selectively manage and promote certain complements to enhance platform ecosystem value and innovation (Rietveld et al., 2019).

6.2 | Generalizability of findings

Our findings on data bottlenecks have broader relevance beyond our specific context. First, they are particularly salient for any organization, large or small, that embarks on platform development involving complementors. Bottlenecks will be exacerbated when the firm relies on older, more established complementors to lend legitimacy, as these entities may resist data sharing for technological or strategic reasons.

Our findings also extend to firms undergoing data-centric transformations, particularly when these initiatives involve multiple actors and data sources. For instance, when incumbent

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firms have siloed data repositories across various business units and seek to launch data-centric initiatives, they will face similar internal data bottlenecks. Our framework is particularly relevant for firms seeking to build generative AI-driven platform business models. Many incumbents possess proprietary data assets (e.g., customer interaction histories, operational data, domain-specific records) that could provide the training data and contextual grounding needed for AI-powered services. Yet deploying these assets as the basis for an AI-driven platform is likely to surface precisely the kinds of data bottlenecks we identify. Business units may resist sharing proprietary data with a new AI initiative for fear of losing control or competitive advantage within the firm. Complementors may be reluctant to contribute data that could be used to train a firm's algorithmic models if the latter will also serve competitors or potentially expose the data in whole or in part. Our process model suggests that platform sponsors should anticipate that data bottlenecks will emerge sequentially as earlier ones are resolved, and that a dual strategy of short-term workarounds and long-term structural solutions will be necessary to maintain momentum.

6.3 | Managerial implications

Our study offers several insights for managers navigating platform development alongside existing product businesses. First, when confronting data access bottlenecks, managers should adopt a dual-timeline strategy that combines immediate workarounds with long-term structural solutions. Rather than waiting for ideal conditions, firms can acquire external proxy data to demonstrate platform value and refine predictive models while simultaneously working to establish permanent data access through organizational and technological infrastructure changes. This approach creates and maintains platform momentum during the critical early phases.

Second, when facing resistance from established complementors who cannot or will not fully utilize platform data capabilities, managers should consider strategically diversifying their complementor portfolio. This involves gradually incorporating smaller, more agile contributors that have greater technological flexibility alongside more mature, established players, while potentially also developing proprietary offerings that leverage under-utilized data assets. This not only prevents valuable data from remaining idle but also demonstrates the platform's full potential, potentially motivating broader ecosystem participation. Rather than viewing complementor limitations as permanent constraints, managers can treat complementor and data heterogeneity as an opportunity to create value without directly competing with existing partners.

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DATA AVAILABILITY STATEMENT

The data that supports the findings of this study are available in the supplementary material of this article.

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Additional supporting information can be found online in the Supporting Information section at the end of this article.

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