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The Future of Big Tech & Banking: A Platform Ecosystem Scenario Analysis

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Completed Research Paper

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Abstract

The FinTech sector combines finance and technology to improve financial services through digital innovations, transforming how services are delivered, accessed, and perceived. Big Tech companies like Amazon, Google, and Apple have entered this space, bringing vast resources, deep customer relationships, extensive customer data, and pervasive digital ecosystems. Unlike FinTech startups that stay within specific niche markets, Big Tech firms can integrate financial services into their platforms quickly, at scale, and with broad scope. This paper explores key uncertainties identified through interviews with industry executives, scholarly articles, industry reports, and regulatory advisories: 1) whether Big Tech will stay at the top of the financial services stack and offer only basic services or expand further; and 2) whether Big Tech firms will complement or compete with traditional financial institutions. Using Scenario Analysis and platform theory, this paper turns these uncertainties into narratives that can guide managerial decisions and direct future research.

Keywords: *FinTech, Big Tech, competition, digital markets, ecosystem, platform theory, platform envelopment, scenario analysis, qualitative research*

Introduction

The financial technologies sector (FinTech) blends finance with technology to improve financial services through digital innovations. FinTech includes a wide array of applications such as electronic payments, investment services, mobile banking, online transactions, loan brokering, and peer-to-peer (P2P) financial transactions (Ha et al., 2025). FinTech marks a significant transformation in how financial services are delivered, accessed, and perceived. It serves as both a disruptive challenger and a valuable partner to conventional financial institutions (Alt et al., 2024).

The growth of FinTech has been fueled by several key drivers: technological advancements, changing consumer preferences, an evolving regulatory landscape, and increasing demand for more convenient and efficient financial services (Kowalewski and Pisany, 2023). FinTech firms have leveraged these trends to create solutions that make banking quicker, more cost-effective, and user-centric. Today's consumers seek seamless, real-time financial experiences that align with their digital habits, prompting both emerging startups and established banks to innovate in response (Adke et al., 2024; Murinde et al., 2022).

FinTech firms have intensified competition across the financial sector, compelling traditional banks to reevaluate customer engagement strategies and operating models (Diener and Špaček, 2021). Leveraging agile product management and technology-driven approaches, startups have launched specialized products tailored to specific consumer needs—areas where large financial institutions often face limitations due to legacy systems and bureaucratic processes (Mackenzie, 2015). These FinTech innovations have also enabled quicker and cheaper transactions (Knewtson and Rosenbaum, 2020). For example, payment platforms like Square have simplified the process of setting up merchant accounts and conducting online payments, while companies like Wise offer low-cost alternatives to expensive bank services.

Digital lending platforms challenge traditional lending by delivering fast, digital-first loan underwriting (Allen et al., 2023; Cuadros-Solas et al., 2024). In contrast to the lengthy credit checks and underwriting procedures used by banks, some FinTech lenders rely on alternative data like social network connections and educational background to determine creditworthiness (Jagtiani and Lemieux, 2019). This model allows for quicker and possibly more inclusive lending decisions (Eichengreen, 2023).

FinTech has achieved mainstream adoption (Adke et al., 2024). Digital payments are approaching $10 trillion globally (Statista, 2021). Total assets under management by FinTech firms have grown to $1.8 trillion (Statista, 2024). Some large banks have responded to FinTech's rise by developing proprietary technologies while most banks opt to collaborate with FinTech firms to deliver the digital services and customer experiences that today's consumers expect (D'Agnoluzzo et al., 2023).

The global financial regulatory system is fragmented and complex. The diversity in oversight creates overlap and inefficiencies, making regulatory policy susceptible to gaps and regulatory arbitrage (DeMenno, 2020). This landscape presents significant challenges for banks to stay competitive and maintain their relevance with their customers in a rapidly evolving financial ecosystem (Adke et al., 2024).

In recent years, Big Tech companies like Amazon, Meta, Google, and Apple have expanded their presence in the financial services sector. Unlike many FinTech startups, which typically focus on specific market niches, Big Tech firms possess vast financial resources, deep customer relationships, extensive customer data, and well-established, wide-spanning digital ecosystems. These attributes position them to integrate financial services into their existing platforms quickly, efficiently, and at scale. Big Tech's entry into the financial sector marks a new phase in the evolution of financial services, a future in which Big Tech can form symbiotic relationships with established financial institutions within the traditional financial system, or a system in which Big Tech firms become major competitors to the legacy financial system (Doerr et al., 2023). This future is uncertain and relies to a large extent on the strategic decisions of a handful of Big Tech firms, raising the following research question: *How will the strategic decisions of Big Tech firms reshape the financial services ecosystem and the ways participating firms capture economic value?*

To answer this question, this paper applies platform theory (Constantinides et al., 2018; Van Alstyne et al., 2016) as an analytical lens and utilizes Scenario Analysis to synthesize potential futures that can guide scholars and inform managers as they formulate their company strategies.

This paper proceeds as follows: the next section provides background into the banking sector and its functions. The following section presents an overview of platform theory. The subsequent section explains the Scenario Analysis method and details the data collection and analysis. Details of four scenarios follow, including a narrative description, a discussion grounded in platform theory, and the industrial implications. A concluding section discusses the utility of Scenario Analysis in IS research, study limitations, and brings the paper to a close.

Industry Background

The traditional banking and financial industry is comprised of specialized institutions, each occupying a specific role within the broader vertical financial value chain.. Commercial banks have served as the primary depository institutions, collecting deposits and offering several types of loans—such as mortgages, auto loans, personal, and business loans to individuals and businesses (Vachkov and Valkanov 2021). Investment banks have focused on capital markets, underwriting securities, and facilitating mergers and acquisitions (Prabhu, 2021). However, in 1999, the Gramm-Leach-Bliley Act ended this separation (White, 2009). Non-banking financial institutions (NBFIs) are firms that operate without a banking license and are not permitted to accept public deposits. They offer an array of financial products and services such as money transfers, risk pooling, investment management, advisory, and brokering, and they often extend consumer credit alongside traditional banks (Marecki and Wójcik-Czerniawska, 2023).

NBFIs compete with banks by offering specialized services or targeting niche markets and underserved populations. This focus on specific sectors allows them to develop specialized knowledge and informational advantages (World Bank, 2016). Through unbundling, specialization, and targeted offerings, NBFIs increase financial sector competition and empower consumers to make more informed financial choices (Marecki and Wójcik-Czerniawska, 2023). Unbundling means that services once exclusively offered by traditional financial institutions are now being broken apart by an increasing number of startups (Basole

and Patel, 2018). The majority of new FinTech entrants are not trying to become traditional banks or to capture all of a customer's financial activities; instead, they focus on delivering specific, more convenient services tailored to particular needs (Anand and Mantrala, 2019). Asset managers, payment processors, and credit providers have each played their own roles, contributing to a stable ecosystem where firms largely respected boundaries and collaborated through shared ecosystem and payment networks. This industry structure supports efficient risk distribution and operational stability, as banks, NBFIs, and other financial services providers cooperate and rely on each other for services outside their core expertise.

Many loans, particularly mortgages, are sold to correspondent lenders or securitized and sold to institutional investors, involving a network of investment banks, rating agencies, and secondary market participants. This process allows banks to free up capital and continue issuing new loans. Big banks often securitize portfolios of loans by bundling them into asset-backed securities, which are then sold to institutional investors. To mitigate adverse selection and maintain liquidity in secondary markets, securitization involves key intermediaries, particularly insurance firms and credit rating agencies. Mortgage-backed securities (MBS) and other structured financial products involve investment banks, rating agencies, and institutional investors, creating a complex ecosystem of financial intermediaries. As of 2020, NBFIs serviced approximately 70% of conforming mortgages sold in the MBS market, with Quicken Loans (aka Rocket Mortgage) being the leading USA mortgage lender. Similar patterns are evident across other lending segments that benefit from access to securitization (Clark et al., 2021).

In recent years, technological innovation and regulatory changes have blurred these traditional boundaries, leading to increased overlap and competition. As a result, the rise of FinTech and Big Tech has intensified competition for traditional banks, while also fostering new strategic partnerships. In turn, the banking sector is rapidly evolving, offering innovative, hybrid solutions through integrated digital platforms (Vachkov and Valkanov, 2021). Traditional banks have some advantages over Big Tech, including customer trust, deep regulatory expertise, and extensive client networks (Dutta, 2020). The exclusivity of banking licenses has shielded banks from FinTech and Big Tech competition in core areas such as deposit-taking and credit issuance (Suprun et al., 2020). FinTech firms now challenge traditional players by offering alternative lending, payment, and investment solutions, often leveraging digital platforms and data analytics. FinTech firms and Big Tech sometimes compete directly with financial institutions by offering similar services, while in other instances they collaborate to enhance service delivery. In the lending space, legacy financial institutions both cooperate and compete with FinTech platforms. Some banks opt to enter into partnerships while others opt to maintain a purely competitive stance without collaboration (Berger and Boot, 2024).

Cooperation remains essential in areas such as payment processing, regulatory compliance, and risk management, where shared systems and standards benefit all participants. Rather than competing, traditional financial institutions and FinTech firms are increasingly positioned to collaborate—banks seeking technological innovation and FinTechs and Big Tech requiring capital and regulatory infrastructure—creating mutual value through strategic partnerships (Suprun et al., 2020). As part of large banks' ecosystems, FinTechs benefit from banks' regulatory infrastructure and compliance expertise, while banks, in turn, influence the regulatory terms of the partnership (Vachkov and Valkanov, 2021). The industry thus balances competition and collaboration, with banks, FinTech, and Big Tech choosing when to cooperate for mutual benefit and when to compete for market share. These firms leverage technology and alternative data to offer credit and payment services, often with lighter regulatory burdens, thereby increasing competition and reshaping traditional value chain roles (Simda and Gimpel, 2025). Regulators are tightening oversight of Big Tech firms such as Apple, Amazon, Google, and Meta (Vachkov and Valkanov, 2021).

Platform Theory

Platform theory both defines what platforms are and details rules about how they function. Platforms provide a medium for third-party users to interact with each other based on rules governing who can be part of the platform ecosystem and how participants can behave (Parker et al. 2016; Tiwana 2013). Digital platforms are sets of digital resources that enable value-creating interactions between different parties (Constantinides et al. 2018). Network effects can drive users to select the most popular networks so that they can interact with the most other users as possible (Tiwana, 2013; Zhou et al., 2024). Many markets

require only a few intermediaries (Cusumano, 2011), creating environments in which a market can be dominated by a monopoly or oligopoly of dominant networks (Eisenmann et al. 2006; Shapiro and Varian 1999). Such winner-take-most markets (rarely are they winner-take-all outcomes) are characterized by high economies of scale, strong network effects, low demand for differentiation, and high multi-homing costs (Cennamo and Santalo, 2013; Parker et al., 2016).

The strategic decision about who can interact through a platform and what value platform members are allowed to contribute evolves over time. Platforms customarily reserve the right to change the rules of interaction and do so to their own benefit, which may be to the detriment of other participants in the ecosystem (Parker et al., 2021). Changes in company goals, as well as the level of development of the platform ecosystem, will influence how much a platform firm provides products and services itself versus allowing third-party partners to do (Van Alstyne and Parker, 2018).

Platform firms provide components and rules that govern the way users interact and transact with each other (Boudreau and Hagiu, 2009). Platforms have a triangular structure in which users interact with each other through the platform rather than directly with each other (Eisenmann et al., 2011). For example, MasterCard enables consumers and retailers to transact business with each other. MasterCard provides a card account to the consumer and a merchant account to the retailer. The merchant account enables the retailer to sell to the customer based on credit, receive the funds from MasterCard, and then MasterCard collects the funds from the consumer. (See Figure 1a.)

Platforms expand variety, provide connectivity, set prices, and match different users with each other (Eisenmann and Hagiu, 2007). Platforms are the intermediary through which different market participants transact business, such as the MasterCard example above. Platforms provide variety, such as how a credit card company offers the opportunity for consumers to shop at millions of merchants. Credit cards match merchants with credit-worthy customers and match consumers with businesses that will reliably deliver a product or service. Credit card platforms set the transaction fees for acting as the payment intermediary.

Platforms are often built upon other platforms, creating a layered ecosystem (Constantinides et al., 2018; Eisenmann et al., 2011). For example, a peer-to-peer payment app allows users to transfer money to each other. While the payment application provides the user interface, it requires a computer operating system to run and an internet service provider to connect to credit card companies and banks. The banks in turn execute the money transfers from one bank account to the other using platforms such as ABA, SWIFT, and ACH. These bank-level transfer platforms rely on central bank platforms. (See Figure 1b.)

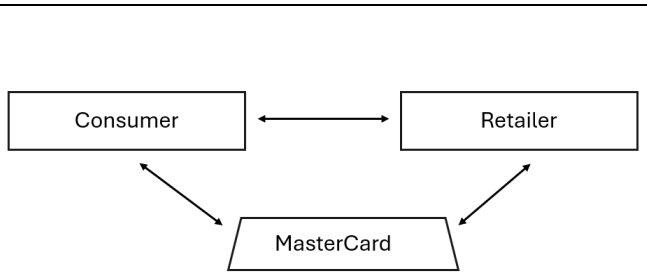

Figure 1a. Illustration of platform structure

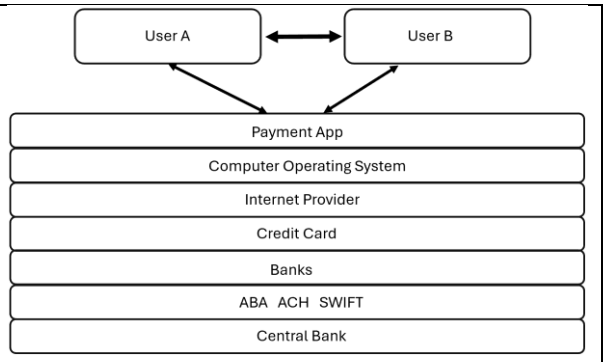

Figure 1b. Example of layered platforms

Since platforms attract a diverse array of users, companies within a platform ecosystem face threats from a broad spectrum of participants (Bauer, 2014). Third party complementors create many of the products and services that raise the value of the platform firm and the ecosystem at large (Benzell et al., 2024; Van Alstyne et al., 2016). In platform-based markets, different firms frequently cooperate or complement one another in certain areas of their business while simultaneously competing in others (Gawer and Cusumano, 2014). For example, Apple Pay relies on credit card companies and banks to execute its transactions, generating fees for these partners, while at the same time Apple commoditizes banks and credit cards and controls the consumer and merchant user experience. While platform firms compete against other platforms, they also can move into roles previously taken by complementor firms and compete directly with members of their own ecosystems (Bethlendi and Szőcs, 2022; Constantinides et al., 2018; Tiwana, 2015; Wen and Zhu,

2019). This "frienemy" dynamic highlights the strategic significance of the layered structure of digital platforms. A platform can act as a bottleneck that other industry players must pass through (Boudreau and Hagiu, 2009; Rochet and Tirole, 2003). Gateway platforms can broaden their offerings to enter and compete in a different layer, then choke off competition in one of the layers, a strategy called "platform envelopment" (Eisenmann et al., 2011; Parker et al., 2016). Most famously, Microsoft famously eliminated competition in the Internet browser layer by embedding Internet Explorer on all Windows computers, making its competitor Netscape superfluous for most users (Eisenmann et al., 2011). Apple built its current Apple Pay service by keeping its near-field payment technology closed to would-be competitors, only recently opening its NFC technology to others due to antitrust findings by the European Commission (Peters, 2024).

Unlike conventional vertical industry structures, the triangular shape of platform markets alters the dynamics of value creation and capture, potentially exposing an industry to cross-boundary disruption. (Pagani, 2013). Digital platforms' modular and expandable architecture affords flexibility across many different business contexts (Rolland et al., 2018). Many digital platform companies have significant size and scope, especially Big Tech firms such as Alphabet/Google, Meta/Facebook, Apple, Amazon, Alibaba, and Tencent. These companies do not just build platforms of products but extensive and varied digital capabilities (Yoo et al., 2012) which they can fine-tune in response to growth opportunities and challenges (Eaton et al., 2015). These capabilities are enhanced by significant amounts of data about customers, suppliers, and partners across industries. This data often includes the data used by individual firms as well as information about all activities throughout the ecosystem, providing a substantial data advantage that can be used to optimize market tactics (Eichengreen, 2023; Martens et al., 2024). These Big Tech firms also have the ability to cross-subsidize new products and services and can bundle together disparate but complementary products or services that will create strong lock-in effects (Bethlendi and Szőcs, 2022; Eichengreen, 2023).

Study Design

This section describes the scenario planning method, qualitative interviews and data analysis, and the formulation of the future scenarios explored in this research.

Scenario Analysis

Scenario Analysis is particularly well-suited for rapidly evolving industries like banking and financial services, which are experiencing significant uncertainty and transformative shifts due to digitalization (Rosenberg, 2012). This method identifies critical uncertainties influencing strategic decisions (Postma and Liebl, 2005). By developing multiple future scenarios, it demonstrates how different factors may interact under certain circumstances (Schoemaker, 1995). Scenario analysis applies an external focus to cause-effect relationships (Huss and Honton, 1987). It helps focus leaders' attention on various potential futures rather than preparing for a single future based on one set of assumptions or one forecast. All the scenarios are viable; however, Scenario Analysis does not attempt to predict which is more likely to occur (Bunn and Salo, 1993).

Conventional forecasting techniques are often ineffective for companies operating in rapidly changing or disruptive business environments (Clemons, 1995). One of the main reasons firms develop unsuccessful strategies is that their expectations of the future rely on incorrect assumptions (Rosenberg, 2012; Schnaars, 1987). These assumptions often stem from the notion that the future will largely resemble the present. However, significant disruptions can undermine the very foundations upon which current strategies are built (Clemons, 1995; Leary et al., 2023). Scenario Analysis brings implicit assumptions to the surface, helping executives broaden their perspectives and better equip themselves to develop strategies for an uncertain and potentially disruptive future (Tenaglia and Noonan, 1992). Scenarios highlight the most significant uncertainties that could impact the company and offer a structured approach to Scenario Analysis. This process consists of five key components arranged into four sequential steps: 1) identify the change drivers, 2) recognize trends and critical uncertainties, 3) define logical interaction rules for the Scenario Analysis (e.g. platform theory), 4) develop multiple scenarios. The scenarios are determined by combining key uncertainties (Schoemaker, 1995). Scenarios are explored to their logical conclusions, even if results may seem extreme. The scenarios are then played out to a logical conclusion, even when they

appear to be extreme (Becker, 1983). Figure 2 summarizes the Scenario Analysis method (Schoemaker, 1995) as illustrated by Gimpel (2015).

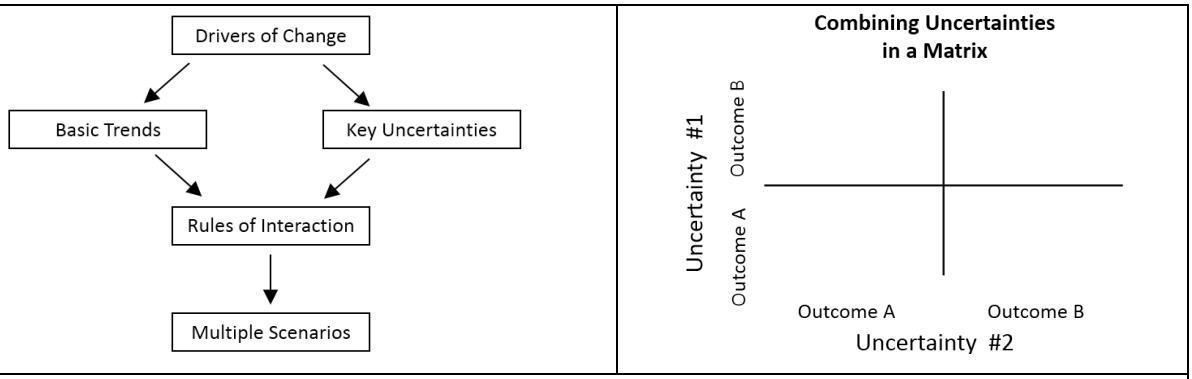

Figure 2. Scenario Building Process

Interviews and Analysis

When executives within a company create scenarios, they are limited by the organization's particular points-of-view and biases (Postma and Liebl, 2005). To avoid these limitations, our scenarios are based on interviews with people at various positions within various companies that perform a wide array of roles in the platform-based financial services ecosystem. Because this study investigates how platform strategy and technological advances are shaping the banking and financial services industries, we employ an explorative, qualitative approach to data collection and analysis. Data were collected through hour-long, semi-structured Zoom interviews with 20 executives at different positions in the ecosystem (see Table 1).

Banking Lead, Global consulting firm	Managing Director, Financial services advisory firm
Business Intelligence Consultant, Core banking infrastructure provider	Managing Director, Global consulting firm
Chief Executive Officer, Banking analytics firm	Managing Partner, Fintech advisory firm
Chief Executive Officer, Fintech application marketplace	Product Lead, Digital payments firm
Chief Innovation Officer, Bank trade group	Senior Product Marketer, Digital banking platform provider
Co-founder, Digital payments provider	Senior Vice President, Large credit card platform
Digital product manager, Global bank	Strategy Lead, Payment fraud prevention firm
Digital Transformation Officer, Large bank	Technology Lead, Community bank
Director of Customer Success, Digital banking software firm	Vice President of Revenue, Payment provider
IT Director, Core banking infrastructure provider	VP of Sales, B2B Payment provider

Table 1. Research Participants

We conducted semi-structured interviews because of their flexibility in enabling both exploratory inquiry and the efficient gathering of diverse range of insights within a limited timeframe (Martin, 2003). Data collection and analysis were conducted simultaneously. Insights from emerging primary and secondary data informed subsequent data collection efforts and refined our interpretive lens (Charmaz, 2014). The inquiry began with broad, open-ended questions that gradually became more focused as the research evolved. Through theoretical sampling (Corbin and Strauss, 2008), concepts that surfaced during data analysis were integrated into subsequent interviews. Interviews were transcribed using Zoom's speech-to-text feature, then reviewed by a graduate research assistant who compared the text to the recording, correcting any inaccurate words or phrases. Transcripts were imported into NVivo (Lumivero, 2020) for coding and analysis. In addition to primary interview data, this study incorporates analysis of relevant academic literature, regulatory advisories, and industry publications. Peer-reviewed journal articles were selected to ensure analytical rigor, while industry reports offered current perspectives on market dynamics, professional practices, and emerging trends (Saunders et al., 2015).

Because different study participants understand different aspects of the industry, and no one has a whole first-hand picture of the complete ecosystem, we apply a hermeneutic approach to analyzing the data (Chalmers, 2004; Myers, 2015). This approach enables the development of a coherent and unified understanding of the research context and the issue being examined. Through this process, we discerned major trends and collective anticipations regarding the future. Additionally, we uncovered prevalent uncertainties within the financial services ecosystem. These uncertainties informed the construction of scenarios, while the identified trends and shared expectations served as the foundation for elaborating the scenario narratives (Gimpel, 2015).

Constructing Scenarios

Interviewees describe the complicated banking and financial services ecosystem and explain how its evolution into a system of platform-based companies that facilitate the execution of transactions. No company controls the full service stack, and many specialize in certain layers of that stack. Firms frequently cooperate with each other to perform certain transactions while they simultaneously compete against those same companies to be the mediator of other types of transactions. It is common for firms to expand their service offerings and begin competing directly with firms for which they provide supporting services.

Participants explain that established firms within this ecosystem are heavily regulated; however, recent entrants have been offering competing services in ways that fall outside many of the regulations. This creates regulatory arbitrage that can give the new entrants an advantage. Also, new financial technology firms often provide quicker, more user-friendly experiences. While FinTechs initially intended to disrupt the status quo, the industry has largely transitioned to a "coopetive" environment in which technology-focused companies both compete with banks and financial services firms while, at the same time, they rely on legacy banking-industry platforms to provide access to the core financial system platforms necessary to provide the interoperable financial services customers expect, and the FinTechs provide technology that improves banks' operations and customer experiences.

Big Tech firms such as Google, Apple, Meta, and Amazon have entered the financial services space by offering customer-touching products and services in the top layer of the financial services stack, such as payment services and co-branded credit cards. At present, these services are relatively basic and built upon the existing ecosystem. For example, Big Tech payment services provide a simplified point-of-sale experience but use other firms' credit cards. Some, such as Apple and Amazon, offer co-branded credit cards, but these cards are part of the MasterCard or Visa platforms and are issued by traditional chartered banks. These products are focused on basic services and are largely cooperative with the establishment.

Study data indicate that there is significant uncertainty about the role that Big Tech firms will play in the medium-term future. There is widespread acknowledgement about Big Tech firms' innovativeness, vast financial resources, customer intimacy, data advantages, and the enormity of their existing networks of users. A key question is whether Big Tech firms will continue to stay at the top of the financial services stack by offering basic services, or whether they will expand into a much broader set of services. Key concerns driving this uncertainty is the push by Wall Street for hardware-centric Apple, Inc. to greatly expand its services revenue, by the decades of Amazon's scope expansion into most industries it enters, and by Elon Musk's stated intention for X (formerly Twitter) to become an "everything app." This concern is reinforced by the fast-follower nature of many Big Tech firms, so that once one Big Tech company offers new products or services, others follow suit. The second key uncertainty is whether Big Tech firms will act as complementors for the existing financial services ecosystem through largely mutually beneficial strategic choices, or whether they will compete directly with established ecosystem players. This uncertainty comes to the fore through interviewee comments, such as the payment provider who explains how one Big Tech fostered a complementary relationship while the another closed off access to key elements of its platform, becoming a market competitor. This also arises from historical behavior of Big Tech firms, which have an established history of appropriating services originated by partner firms. A recurring theme in the interviews is the variety of strategic options Big Tech firms have because of their positions in multiple layers of the financial ecosystem and their ability to control user behavior because of their ubiquity in user's daily lives. This concern also is brought to the surface via regulators such as the UK Financial Conduct Authority, which has raises concerns about Big Tech's innate comparable advantages over incumbent banks.

By using these two key uncertainties as axis dimensions, we create four potential scenarios. The potential future scenarios as depicted in Figure 3.

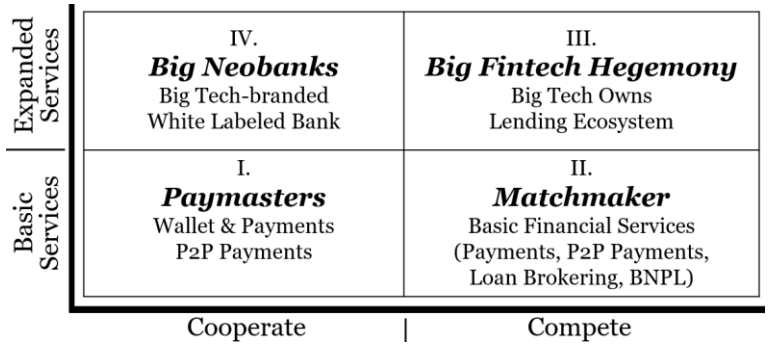

Figure 3. Future Scenarios

Future Scenario I

The first scenario, "Paymasters" is characterized by digital wallets and digital payment services, such as those currently offered by Apple Pay and Google Pay. In this scenario, Big Tech firms provide basic service at the interface level while cooperating with established banks and financial services firms which provide the underlying infrastructure.

Scenario I Narrative

Increasing demand for speed and convenience and reliance on mobile phones as an extension of oneself drives the ubiquity of mobile pay hardware at physical retailers and the acceptance of mobile pay accounts at online businesses. Big Tech firms offer digital wallets that store various payment methods, such as bank account details, PayPal and credit card accounts. People embrace Big Tech payment services for peer-to-peer (P2P) transfers.

Mobile payments by consumers and small businesses grows and becomes the super-dominant electronic payment method, similar to the role that WeChat Pay and AliPay play in China.

Unlike the Chinese counterparts, Big Tech digital wallets link to bank accounts at chartered banks and credit cards issued by companies such as MasterCard and Visa. Digital wallets instantly accessible on phone, tablets, and laptops, along with the associated interface accounts (e.g., Apple Pay, Google Pay, WhatsApp Pay) largely replace physical credit and debit cards and paper checks.

While the payment behavior of consumers and small businesses changes at scale, the payment ecosystem and underlying infrastructure largely stays the same. Standalone payment applications like Cash App and Venmo, and those managed by retail banks, such as Zelle, drop in popularity. Companies that set up and manage merchant accounts and processing hardware such as Square, Stripe, and Elavon are relatively unaffected, although their fee revenue may be reduced as Big Tech firms take their slice of transaction fees.

Scenario I Discussion

The Paymasters scenario is the evolution of the current market, in which firms at one layer of a platform-based ecosystem expand into an adjacent layer. In this case, companies at the device or operating system layer, or those who control a primary communication channel, such as Meta's control of multiple social media platforms and the WhatsApp communication app, leverage their large userbase and the associated network effects to become payment platforms. Those that control the operating system layer can control which apps get to access the near-field communication (NFC) protocols. Apple, with control of the operating system and hardware, has the strongest control over this crucial chokepoint. Operating systems will bundle – and likely favor –payment systems from their own companies as defaults, increasing their adoption and use, given that only a small percentage of users opt out of device defaults for other functions. While companies at the app layer, such as WhatsApp (and the associated Instagram and Facebook apps) must rely on the operating system firms to open their NFC capabilities to rival firms, they still can thrive in other types of payments and through QR code-based payments, such as those used by WeChat Pay.

The largest platforms with daily usage will dominate this scenario. Over time Apple Pay and Google Pay will dominate because of their absolute network dominance at the operating system level, although the dominance may be based on geography. Apple's iPhone ecosystem dominates the United States and a few other country's while Google's Android ecosystem dominates much of the world. WhatsApp's is a primary communication medium for billions of people. Because these payment platforms already will be on people's devices, there will be less need for dedicated payment applications like Venmo or Zelle. For most users, they would be an additional network to be part of, when the people they want to pay are all part of multi-purpose applications already in use.

Scenario I Industrial Implications

The oligopoly of payment apps and digital wallets owned by Big Tech firms makes competing payment superfluous. Payment and digital wallet firms based in the application layer will go out of business, except for those focusing on very narrow niches. Popular existing payment applications that are part of multi-layered companies, such as PayPal's Venmo, Block's Cash App, or the bank-owned Zelle will also become redundant and lose significant market share. Firms operating beneath the app layer, such as PayPal , Visa, and the banks that issue credit cards and control cash accounts will still engage in the payment ecosystem, however, they will see a reduction in transaction fees as Big Tech take a slice.

Future Scenario II

The second scenario, "Matchmaker" is characterized by moving beyond providing digital wallets and a payment interface. In this scenario, Big Tech firms compete with established financial services firms in the offering of basic financial services. Big Tech firms compete with and envelop services currently offered by non-bank financial institutions (NBFIs).

Scenario II Narrative

Big Tech firms leverage their extensive network of users to act as a broker, referring their users to financial service providers in exchange for a commission. The initial points of entry are as loan brokers, peer-to-peer (P2P) lending, and buy now, pay later (BNPL).

Acting as a loan broker, the Big Tech firms leverage their user experience expertise to create a seamless shopping and loan application experience to their users who are in search of large-ticket loans, such as auto loans, boat loans, and mortgages. Big Tech matches loan requests with lenders participating in the platform, matching potential borrowers with the most suitable lenders, simplifying the decision process for the consumer. Once the user selects the lender, the Big Tech platform collects and organizes all the application data and sends it to the lender, who then underwrites and issues the loan. In the process, the Big Tech firm collects a service fee based on a percentage of the loan value. This broker service is a win-win for the borrower and the lender. The borrower has a seamless search and application experience and the lender has access to the large network of Big Tech platform users. The Big Tech firm also analyzes data about successful loans and defaults, which increases the likelihood that users are matched with lenders who will issue the loan and decreases the likelihood a lender will issue a loan to someone who will default. Entry into the loan broker market will put the Big Tech firms in direct competition with established industry players such as LendingTree, Sun West Mortgage, and Coast2Coast mortgage.

Big Tech firms that offer digital wallets and digital payments will also act as a broker for BNPL financing companies. Companies that accept Google Pay, Apple Pay, or another Big Tech payment method will automatically be able to offer BNPL, without needing to set up a separate relationship with a BNPL provider. Simply accepting the Big Tech payment platform will automatically enroll merchants in BNPL. Users will be able to select whether to pay now or buy now and pay later through their app. The payment to the merchant will settle as usual, with the short-term loan balance automatically transferring to a BNPL provider such as Klarna, Afterpay, or Affirm. This makes the BNPL purchase process frictionless for both the merchant and the consumer. Because of the positive user experience for both consumers and merchants, the dominant form of BNPL offerings are via Big Tech platforms.

After establishing themselves as BNPL intermediaries that cooperate with existing BNPL firms, Big Tech platforms can leverage their data advantage, using data about previous BNPL transactions as well as the additional insights the platforms get by mediating so much of their users' lives, to offer their own BNPL

service. Initially, Big Tech will continue to broker BNPL transactions with BNPL firms, but will use its data advantage to self-fund the customers with the best credit risk profiles when they purchase goods and services with the highest likelihood of loan payoff. After "creaming" the transactions, they will continue to broker the remaining, less profitable BNPL loans to their partner firms. The BNPL firms can still make money, albeit with the loss of the best customers, but they will be locked into their relationships with Big Tech, who now become the default way merchants and consumers enter BNPL agreements.

Big Tech firms expand their financial match-making platform to include P2P lending to consumers and small businesses. They compete directly with firms like Prosper, LendingClub, and Upstart by matching individuals and syndicates seeking alternative investment vehicles with consumers and small businesses seeking loans. They use sophisticated data algorithms and artificial intelligence to underwrite loans, providing better rates for borrowers and less risk for investors. In exchange for matching lenders and borrowers, the Big Tech firms collect a transaction fee and a portion of the ongoing interest payments.

Scenario II Discussion

The Matchmaker scenario is based primarily on network scale and scope. Big Tech firms leverage the scale of their user base to encourage established lenders to partner with them. As a result, Big Tech firms will collaborate with major lenders but will be in direct competition with other loan brokers.

By mediating new types of financial transactions, Big Tech firms will gain economies of scope that will make their platform more ubiquitous in people's lives. By moving from an operating system layer into a service application layer in the platform ecosystem, Big Tech firms can make redundant competing brokerage service apps. Why interact with a third-party broker, which will require users to complete extensive application forms, when you can ask Siri or Alexa to find a good auto loan or a competitive mortgage rate? Big Tech will simply be the go-to source for loans, just as it is the go-to source for information, entertainment, and connections with others. Big Tech will not need to use its position in the financial services ecosystem to foreclose or choke-off competition. Instead, it can simply make competitors redundant and unnecessary, like when Microsoft bundled Teams with MS Office, making competitor Slack a redundant expense for many organizations.

Given Big Tech platforms' scale in both quantity of users as well as its breadth in types of users, they are well positioned to act as brokers in other types of transactions such as P2P lending. Whereas the move into brokering mortgages and car loans is a matching function between two distinct types of users, P2P lending can be a single sided network, in which consumers and small businesses invest in loans to other consumers and small business, or it can be a two sided network that matches potential borrowers with syndicate investment groups who seek to make loan vehicle investments using their pooled funding resources. The Big Tech firms don't put any of their own money at risk.

Scenario II Industrial Implications

The rise of Big Tech firms as default loan brokers raises an existential threat to loan broker firms that specialize in prime (i.e., low-risk) high-ticket loans such as mortgages and vehicles. Brokers of subprime loans will be less affected by Big Tech's entry into the market; however, Big Tech's data and algorithmic advantages may capture the least risky loans in this segment, further shrinking the market of available customers. Similarly, P2P lenders also face an existential risk due to displacement by Big Tech. The market for highly specialized and subprime lending will remain a viable, albeit smaller market.

The BNPL industry will flourish in the near-to-mid-term because of the network effects created by Big Tech's userbase of consumers and merchants. In the longer time horizon, BNPL firms will benefit from the increased adoption and more frequent use of the service; however, the default risk-related costs will rise for BNPL firms because least risky loans will be held by Big Tech.

Future Scenario III

In the third scenario, "Big FinTech Hegemony," Big Tech firms become major players in the lending and financing ecosystem, disintermediating key players from lending and consumer credit transactions. The existing players in the ecosystem continue to play their current roles but service a smaller market share.

Scenario III Narrative

Issuing loans comprises approximately two-thirds of banking revenue (IBISWorld, 2023). Bank loans are funded through customer deposits, which are safeguarded by an extensive regulatory regime. In recent years, NBFIs have used alternative funding sources to issue loans, sidestepping many of the regulations to which banks must comply. Big Tech firms are awash with cash reserves far in excess of their R&D and infrastructure investment costs. Big Tech firms use these funds to act as NBFI lenders, taking advantage of both regulatory arbitrage and their data advantages to undercut existing lenders while potentially making less risky loans.

Mortgage loans are originated by lenders, but customarily sold into correspondent lender markets, in which investors purchase the loans to collect the interest profits. It is common for the loan originators that initially lend the money to sell their loans within a few days of making the loan. As such, lenders can reuse their available funding over and over. The originators charge thousands of dollars in fees to provide the loan, then receive an additional 2-3% premium over the amount of the loan. Auto loans and other large-ticket loans such as boats or motorcycles also can be securitized so that lenders get a quick return on investment and transfer the risk to others. Once they establish correspondent lending relationships, Big Tech firms attract a new user type to their platforms by aggregating loans issued by small banks into larger loan portfolios, then flipping them to their correspondent lenders. Initially, Big Tech firms partner with securitizing companies, but after gaining scale and new data, they become a two-sided market replacing the investment banks that securitize the loans.

Big Tech companies offering payment services compete directly with credit-card platforms such as MasterCard and Visa and largely cut banks out of the credit card ecosystem by issuing their own proprietary credit cards using their own Apple Pay, Google Pay, or other payment systems. Like with issuing other loans, Big Tech firms use their abundant cash reserves to fund their customers' credit card purchases, giving them an advantage over credit card issuing banks that must conform to stringent deposit reserve and risk mitigation regulations. While credit card debt is unsecured, Big Tech's data advantage enables them to combine alternative credit scoring models with mainstream evaluation techniques to more appropriately screen potential customers, leading to fewer defaults. This will improve the profitability of Big Tech-issued credit cards while pushing higher risk consumers to existing credit card issuers, further advantaging the Big Tech firms as their competitors face relatively higher default risk costs. As an extension of their credit card and payment offerings, Big Tech finances BNPL purchases.

Unlike their competitors in the space whose primary business in lending, this represents a lucrative side business for Big Tech firms. As such, they subsidize their entrance into the market with lower rates and absorb losses from penetration strategies by subsidizing them with primary business profits.

Future Scenario III Discussion

Big FinTech Hegemony is based on the increase in network scope and scale gained by the progressive envelopment of platform layers in the financial services ecosystem. For secured loans, Big Tech begins by self-funding loans to borrowers that are quickly sold to correspondent lenders. (See figure 4a.) After gaining loan volume scale, Big Tech itself enters the correspondent lending market as an intermediate purchaser of loans, mediating the sale of loans from small banks and small NBFIs to other correspondent lenders. (See figure 4b.) Once they gain sufficient scale as a middleman in the correspondent lending market, Big Tech platforms partner with investment bank platforms that securitize these loan portfolios, disintermediating corresponding lenders from the more lucrative bundles of loans. (See figure 4c.) After using investment banks to build a track record with loan-backed securities, Big Tech firms disintermediate the investment banks that traditionally securitize loans and sell the loan portfolios to investors. At the same time as competing with private loan securitization firms, Big Tech firms continue to interact with quasi-public firms like Fannie Mae and Freddie Mac in the USA to quickly flip a portion of their loans for quick profits and rapid liquidity. (See figure 4d.)

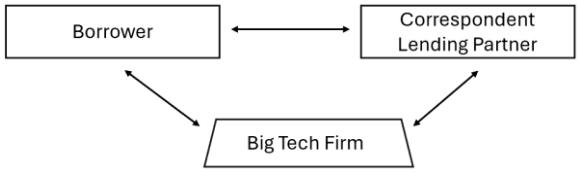

Figure 4a. Entry into Direct Lending Market

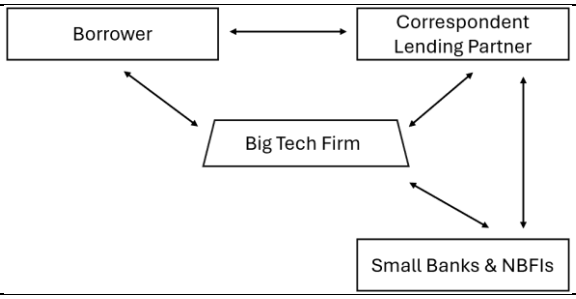

Figure 4b. Correspondent Lending Intermediary

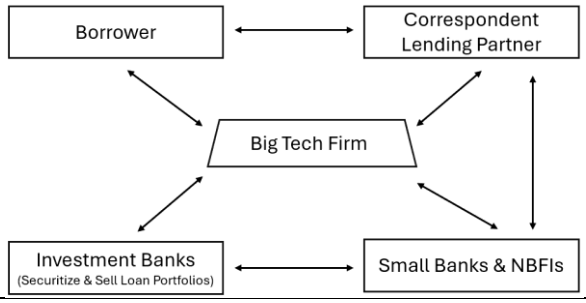

Figure 4c. Entry into Loan Securitization

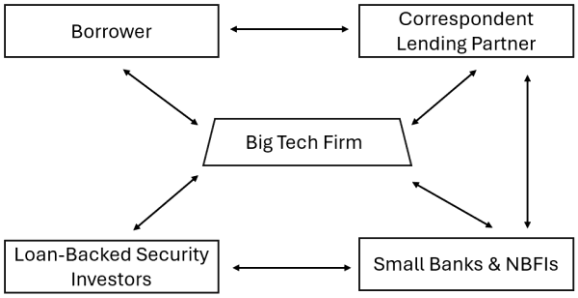

Figure 4d. Big Tech Envelopes Loan Securitization

Big Tech firms leverage their position as a payment gateway. Rather than acting as a point-of-sale interface, Big Tech expands their scope by offering unsecured credit to qualified users of their payment services. By directly funding the payers' purchases to merchants, then collecting payments from the borrowers – either in-full or in installments over time – Big Tech firms disintermediate credit card platforms such as Visa and MasterCard, as well as the chartered banks that issue the credit cards. (See figures 5a and 5b.)

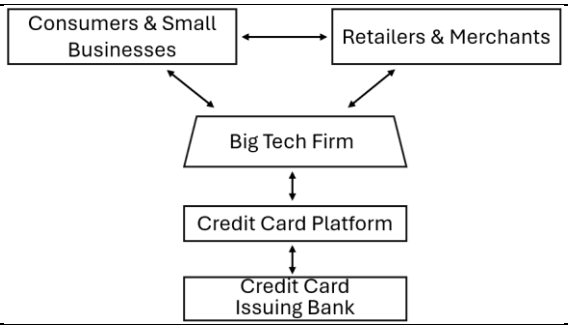

Figure 5a. Current Big Tech Role in Payments

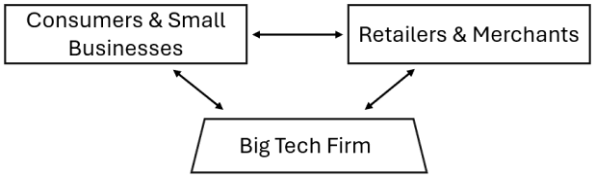

Figure 5b. Disintermediation of Credit Card Platforms and Card-Issuing Banks

Scenario III Industrial Implications

Big Tech firms dominate the market for mortgages, car loans, and credit cards. They perform these roles with minimal reliance on other firms in the financial services stack because they have disintermediated many traditional players from their value networks and ecosystems. They also compete against many firms that play intermediation roles, such as competing against investment banks in loan securitization and banks and firms that aggregate small banks' loans so they can be offloaded in the corresponding lending market. Existing industry players continue to perform the same roles as they do today, but they serve a much smaller market share and experience lower profit margins. This holds true for NBFIs, banks, credit card companies, correspondent lenders, and investment banks. Big Tech firms become as important to the financial system as the biggest "megabanks." New regulations will needed because Big Tech firms become "systemically

important financial institutions" that can sway market interest rates and impact the financial system's liquidity, even if they do not accept any consumer cash deposits.

Future Scenario IV

The fourth scenario, "Big Neobanks" is characterized by close cooperation between Big Tech and existing banks and financial services firms in the offering of expanded financial services. Big Tech firms control the product and service branding and maintain the customer relationships. Banks and financial services firms provide a full range of services on a "white-label" basis which carry the Big Tech brand.

Scenario IV Narrative

In this scenario, chartered banks furnish the essential infrastructure, services, and regulatory compliance frameworks that enable Big Tech firms to offer financial products. These technology companies rely on the banks' core banking functionalities, such as account administration, payment processing, and transaction management, while presenting these services under their own brand to end users. The bank operates in a non-customer-facing capacity, delivering fundamental services including the provision of checking and savings accounts, card issuance, payment gateways, and fraud prevention mechanisms. Banks also assume responsibility for risk management, regulatory reporting, and compliance obligations.

Big Tech firms, in turn, concentrate on customer acquisition, user interface development, and overall user experience, embedding the bank's services seamlessly within their platforms. Although the customer interacts primarily with the Big Tech brand, the underlying financial services are provided by the bank, often with minimal direct engagement from the end user. In this model, banks and other financial institutions derive revenue through interest earned on loans initiated through Big Tech platforms but held on the bank's balance sheet, along with transaction fees, account servicing charges, and other usage-based fees. This white-label banking strategy allows Big Tech firms to rapidly deploy comprehensive financial offerings while outsourcing the significant regulatory burdens, and it enables banks to monetize their infrastructure and regulatory expertise at the scale of the Big Tech firm's user network.

Early experiments toward this future are the introduction of the Apple Card credit card, issued by Goldman Sacks through the MasterCard network. Apple's websites and other promotion material frequently omit the mention of Goldman Sachs or MasterCard and instead stress the Apple Card brand. Apple also has begun offering high-yield savings accounts through Goldman Sachs under the Apple Card brand. In this scenario, such early steps continue into offering mortgages and other loans through financial partners. Big Tech firms become the customer touchpoint in a cooperative relationship with regulated entities. Big Tech firms are able to expand the scope of their platforms into more products and services, further integrating their platforms into the everyday lives of their customers, while their financial partners address regulatory compliance and financial risk management.

Scenario IV Discussion

In this scenario, Big Tech firms expand across the application layer of the financial ecosystem. They focus on horizontal integration by offering an entire suite of user-focused services. They leverage their existing network of end-users to generate demand for self-branded banking and financial services and compete directly with other bank-like applications and service providers. Big Tech firms stay in this application layer and do not integrate vertically into other layers. Big Tech firms control customer relationships, but they do not change the basic architecture of the financial ecosystem.

Scenario IV Industrial Implications

Retail banking services are commoditized, but large banks can both compete with Big Tech by offering their own branded services to consumers and small businesses at the same time they cooperate by providing Big Tech with the infrastructure platforms needed for them to offer their virtual banking services. The select few smaller national banks or large regional banks that partner with Big Tech are afforded the opportunity to quickly scale up to become peers with the largest "megabanks." Smaller banking institutions, such as community banks in the USA, will face significant pressure. The competitive advantage small banks traditionally held was their ability to intimately know their customers and to provide banking services tailored to individuals' needs. Big Tech's focus on customer centricity and data-driven insights about their

customers will erase this advantage. Big Tech will likely displace many smaller banks in their horizontal, customer interaction layer of the ecosystem.

Discussion and Conclusion

This paper demonstrates how the banking and financial services ecosystem can evolve depending on whether banks and Big Tech companies compete against or cooperate with each other and whether this dynamic occurs in a context of offering basic or expanded banking and financial services (Schoemaker, 1995). A scenario analysis applies platform theory to this contemporary business and regulatory issue.

Scenario Analysis answers the call for new methodological approaches for information systems research (Davison and Martinsons, 2011; Mingers, 2001; Monteiro et al., 2022; Orlikowski and Baroudi, 1991) and rigorous and theoretically-driven research that is directly useful to practitioners (Baskerville et al., 2023; Benbasat and Zmud, 1999; Recker et al., 2009). Many quantitative methods widely-used in information systems research establish causal relationships and offer predictive value while dominant qualitative methods provide insight into how and why questions (Muhammad, 2024). Scenario Analysis uses causal factors to offer possible outcomes rather than predictions of outcomes (Huss and Honton, 1987), providing an important tool for researchers in fast-moving fields like information systems, because past trends may not hold true during periods of major change. Information systems research has observed several such changes resulting from technological inflection points, such as when ARPANET was opened to the public, creating the modern internet; 3G wireless service became widely available, or high-quality, low-cost generative AI changed how people interact with technology. IS research has also observed the reshaping of industry structures when entrants alter the rules of competition, such as when Napster began distributing music, Apple and Google entered the mobile phone market, Uber and Lyft disrupted local transportation, or Tesla released its first mass market automobile. During such inflection points, the accuracy of probabilistic forecasts drops (Leary et al., 2023). Scenario Analysis provides multiple probable futures, including details about the how and the why those futures are possible . In the process of constructing future narratives, Scenario Analysis explicitly surface and challenge assumptions about causal mechanisms, which supports rich theorization and inclusion of various stakeholder perspectives. Using narrative descriptions of possible futures offers a clear and accessible way to convey theoretical insights and a range of potential outcomes to executives, investors, and lawmakers. This can help decision makers see beyond the strategies their companies are undertaking and can help them to revisit their core assumptions about the roles various players in the ecosystem might play in the future.

This paper has limitations that must be noted. While the primary research includes global technology and financial companies, many focus on the American market and one of the authors worked for an American regulatory agency at the time of writing. As such, there is a geographical and regulatory perspective inherent in the research. The scenario analysis method requires playing out scenarios to their logical conclusion. It is quite possible, however, that in the real-world setting, scenarios could be only partially enacted. Despite these limitations, the scenarios can guide practitioners and scholars in exploring how a business ecosystem undergoing significant change might evolve.

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