Fintech 2040

Trajectories for the Evolution of the Fintech Ecosystem

Prof. Dr. Roland Frank

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Managing Directors: Andreas Barth,
Volker Bornhöft, Björn Niederfranke,
Oliver Kuhaupt, Dr. Teresa Schlichting

Author:
Prof. Dr. Roland Frank
Mediadesign Hochschule (MD.H),
E-mail: roland.frank@gmail.com

Media and Press Contact:
Kristina Hunter Nilsson
Global Corporate Communications
Lead & Spokesperson
E-mail: press@riverty.com

Editorial Design & Layout:
Dominik Ziller

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At Riverty, we believe the future of finance isn't something we should wait for — it's something we must shape, together.

That's why I'm incredibly proud to launch *Fintech 2040: Trajectories for the Evolution of the Fintech Ecosystem*, a collaboration between industry experts, academics, and our own teams, brought to life through the sharp perspective of Professor Dr. Roland Frank. This paper is more than a forecast — it's an invitation to engage.

We're entering a new era of hyper-personalization, embedded finance, autonomous agents, and decentralized models that are poised to transform the Order-to-Cash experience from the inside out. These shifts will touch every aspect of how people interact with money, trust, and technology — and raise new questions about regulation, inclusion, ethics, and opportunity.

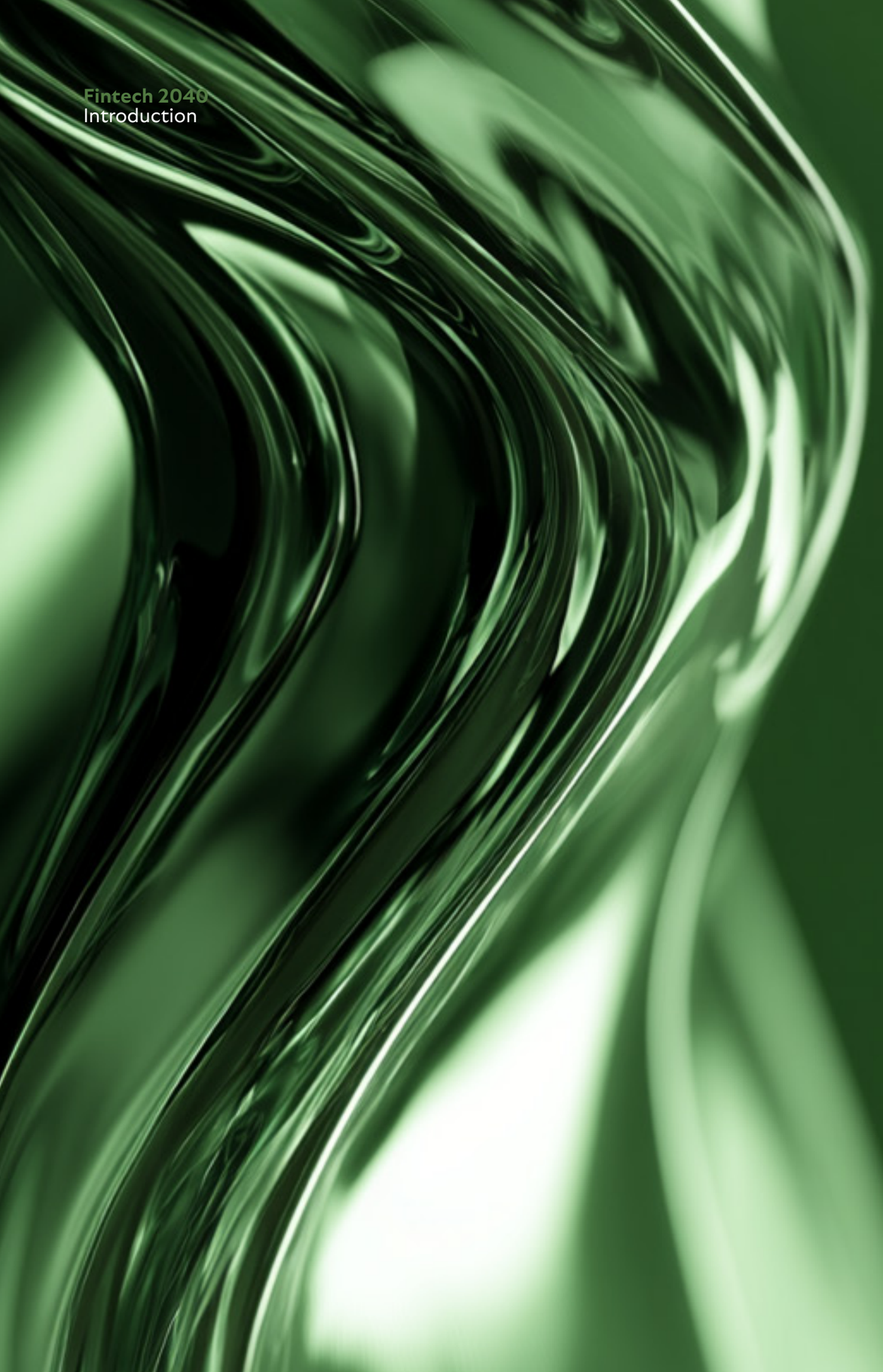
This publication marks the **first step in an ongoing journey.** We see Fintech 2040 not as a one-off paper, but as the **starting point of a growing think tank** — a community of visionaries, innovators, regulators, and academics coming together to critically examine what comes next for the Fintech ecosystem.

We're excited to continue this exploration with upcoming **position papers, roundtables, and cross-industry dialogue.** Our goal is to help businesses, policymakers, and consumers not just prepare for what's coming — but actively co-create it.

Whether you're a Fintech founder, a policymaker, a tech optimist, or a thoughtful skeptic, I hope this work sparks new questions and new collaborations. Because the Fintech ecosystem of 2040 won't be defined by any one company — it will be shaped by the ideas we dare to explore, together.

Let's begin.

Andreas Barth
CEO, Riverty



Abstract

Financial Technology (Fintech) represents the innovative integration of technology with financial services to streamline and revolutionize the traditional financial landscape. This broad field spans areas such as digital banking, payment processing, investment activities, and insurance services. In e-commerce, Fintech plays a pivotal role in optimizing the Order-to-Cash (O2C) value chain – a comprehensive process that includes receiving customer orders, processing payments, managing accounts receivable, and ensuring revenue recognition. By leveraging Fintech solutions within the O2C value chain, businesses can enhance their overall efficiency and customer satisfaction. This paper explores the key technological developments poised to reshape the O2C-Process over the next 15 years, projecting a vision of the Fintech ecosystem in 2040. Key findings suggest a significant convergence of financial services, the gradual erosion of traditional banks' dominance, and the rise of highly autonomous, AI-driven financial ecosystems. Additionally, the paper identifies decentralized and peer-to-peer finance as emerging standards, reinforcing consumer control and empowerment. Ultimately, the research underscores the strategic imperative for organizations to cultivate flexible, integrative business models and engage actively in cross-industry collaboration, positioning themselves to effectively address the disruptive potential of technological advancement.

Keywords: Fintech, Order-to-Cash, Value Chain, AI Agents, Cybersecurity, Decentralized Finance, Embedded Finance, Financial Inclusion, Quantum Computing, Technological Adaption Model, Trend Research, Future Research

Content

Introduction

From managing to understanding.

Who is being disrupted, why the stakes are rising, and what questions must be answered before the future overtakes today's business models.

It is 2040, and Tanja has a financial AI agent named "Finn" that manages her day-to-day finances. Finn is not a physical device but a cloud-based software accessible through voice, augmented reality glasses, or any digital interface. Every morning, Finn provides Tanja a brief financial health update – "Good morning! Your spending is 5% under budget this month. I have saved the surplus in your investment account, and you are on track to hit your college fund goal."

Throughout the day, Finn handles tasks autonomously: it orders groceries at a delivery service, compares utility providers and switches Tanja's apartment to a cheaper electricity plan. When Finn notices an unusual charge on her credit card it flags it for review. When Tanja considers buying a new automated car, Finn runs a comprehensive analysis: it evaluates Tanja's cash flow, the best loan offers available, the impact on her other goals, and even energy cost savings. It then gives Tanja a personalized recommendation on what price range and loan terms would fit her financial situation – all in plain language.

This scenario illustrates the potential changes for customers in their everyday Fintech experience by 2040. It is an evolution of today's early-stage personal finance management apps, chatbots, and robo-advisors, combined into a seamless service. Human Input from Tanja will still be needed. But the trends toward hyper-automation and hyper-personalization suggests that by 2040, these services will merge and relieve the customers from unnecessary burdens of financial administration.

But the next 15 years are not only about artificial intelligence. By 2040, the Fintech landscape is expected to be shaped by a few disruptive technologies, including advancements in quantum computing, cryptocurrencies and new financial products that converge financial dimensions like spending, investing, and saving (Phadke, 2020).

These developments will not only redefine the structure of financial services but also create new risks and uncertainties for companies and consumers alike. In this context, it is critical to understand how the Fintech ecosystem will evolve and what strategies companies can adopt to remain competitive and resilient in the face of these changes.

Problem Definition

The rapid technological evolution presents both: opportunities and challenges for Fintech companies. On one hand, technological innovations offer the potential to enhance financial inclusion, improve efficiency, and create new business models. On the other hand, they also introduce complexities related to cybersecurity, data privacy, regulatory compliance, and ethical considerations.

Furthermore, the increasing convergence of Fintech with other industries, such as healthcare, retail, and the Internet of Things (IoT), blurs traditional boundaries and creates new competitive dynamics. Companies must navigate these opportunities and challenges while preparing for a future that becomes more and more complex (Mashruwala, 2024).

This puts the players in the Fintech market in a difficult situation: They lack a comprehensive, forward-looking framework that anticipates the long-term evolution of the Fintech ecosystem and provides actionable insights for companies. While existing research has explored individual trends, such as blockchain or AI, there is a need for a holistic perspective that integrates these developments into a coherent vision of the Fintech landscape in 2040 (Nick and Foley, 2023). This vision can form the foundation on how Fintech companies can strategically position themselves to capitalize on emerging opportunities while mitigating risks.

Research Question

The year 2040 represents a pivotal horizon for the Fintech industry. By then, technological advancements and changing consumer behaviors are expected to converge in ways that will redefine the financial ecosystem (Goyal et al., 2023).

The task of this paper is to give an overview over the key technological developments that will likely reshape the Fintech landscape over the coming 15 years. While current Fintech solutions have already demonstrated the transformative potential of innovations such as blockchain, artificial intelligence, and open banking, future progress will inevitably involve more complex and integrated applications of these and other emerging technologies.

The central focus of the paper lies in the examination of these emerging technological trends providing a framework for understanding their potential impact on financial services in the next 15 years. To do this, the paper focuses on the Order-to-Cash process (O2C) which displays a customer's journey in Fintech industry from order placement to payment collection.

By analyzing both current practices and speculative future scenarios, the paper offers actionable insights for Fintech companies, industry professionals and researchers to navigate the evolving Fintech ecosystem and leverage technology as a catalyst for innovation and growth. To address these challenges, this paper seeks to answer the following research question:

"What will the Fintech ecosystem look like in 2040? And what strategies can companies develop to prepare for the coming technological developments?"

This question is divided into two interrelated components:

- **Creating a Vision for Fintech 2040:** What are the key characteristics, structures, and dynamics of the Fintech ecosystem in 2040? How will technological, regulatory, and societal trends shape the future of financial services?
- **Strategic Preparedness:** What actionable strategies can companies adopt to adapt to and thrive in the Fintech ecosystem of 2040? How can they leverage emerging technologies, address potential risks, and align with evolving consumer and regulatory expectations?

By addressing these questions, this paper develops a forward-looking perspective on the Fintech ecosystem and equip practitioners, researchers and stakeholders with the insights needed to navigate the complexities of the coming decades. The findings will contribute to both academic discourse and practical decision-making, offering a roadmap for companies to future-proof their operations and remain competitive.

Structure of the Paper

The structure of the paper guides the reader through a three-step-argumentation (→ **FIGURE 1**): First, the paper clarifies the relevance of the topic "Fintech 2040". **Why** should the reader continue reading? What are the questions the paper answers? In the second part, the reader gains a broader understanding on which drivers will presumably shape the Future of Fintech: **How** will the Fintech industry develop in the future? The last step is the creation of actionable insights for the reader: **What** can the Fintech Industry strategically do today, to prepare for the upcoming technological changes?

To address these questions systematically, the paper starts in the *Introduction* by defining the central problems and research questions. *Chapter 2* describes the methodology employed. Following this, the analysis in *chapter 3* delves deeper into the current Fintech O2C value chain, highlighting how digitization already propels competitive differentiation within the Fintech Industry. In *chapter 4* the next wave of innovations in Fintech are identified and evaluated, focusing on specific applications and the change of consumer interaction along the O2C value chain.

The paper proceeds in *chapter 5* to propose an adaptation model for organizations aiming to integrate and scale these technologies effectively. From there, the paper illustrates in *chapter 6* what the vision for the Fintech ecosystem might look like in 2040, emphasizing the interplay between customers and various stakeholders as they navigate the evolving financial landscape. Finally, the paper offers strategic recommendations for Fintech companies in *chapter 7* seeking to position themselves advantageously for the coming shifts, before concluding with an outlook on the industry's trajectory.

FIGURE 1
Structure of the Paper

Methodology

How academic insight, market evidence and a radical customer lens are blended into a single vision for the year 2040.

This paper employs a structured and forward-looking qualitative methodology to explore the evolution of the Fintech ecosystem by 2040 and to derive actionable strategies for companies. The methodology is grounded in two core elements:

— a recapitulation of existing literature supported by *analytical frameworks*

— a *customer-first approach* that evaluates technological developments through the lens of their impact on everyday life and user experience.

The first pillar of the methodology involves a systematic review and synthesis of existing academic and industry literature on Fintech, technological trends, and their implications for the financial services sector. This approach is designed to identify key themes and patterns in the current academic literature. The narrative recapitulation with the help of analytical models ensures that the paper is grounded in evidence-based insights while providing a structured approach to analyzing the future of Fintech (Poon et al., 2024).

The second pillar of the methodology adopts a customer-first perspective, emphasizing the impact of technological changes on the everyday lives and user experiences of customers. This approach recognizes that the success of Fintech innovations ultimately depends on their ability to meet customer needs, enhance convenience, and deliver value.

Financial transactions along the O2C-process happen within the context of various regulatory and economic conditions. The key players in this market are the customers and the companies that offer products and services. Between these two groups the central economic activities take place.

Traditionally, banks and central banks control the flow of capital. Between these central players of the market, many companies act as intermediaries, facilitating and simplifying transactions for all parties involved.

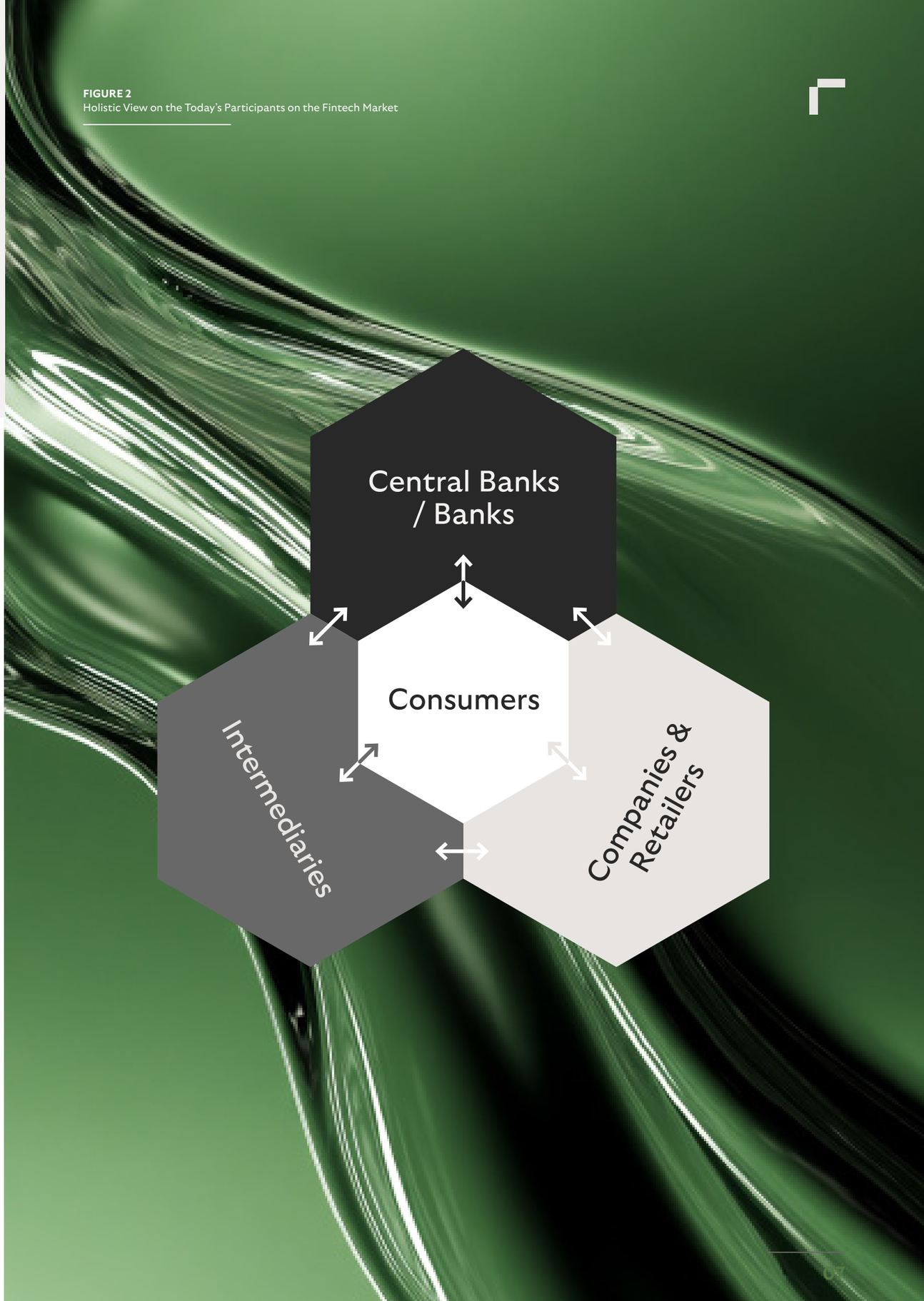
Technological changes in the market are driven by companies, but it is the customer who is ultimately impacted by these advancements. Therefore, the success of new technologies depends on how well the services and products of the Fintech industry meet customer needs. → **FIGURE 2** offers a visual overview of the relevant participants in today's Fintech environment.

To incorporate all these perspectives on the Fintech market, it is important to take a holistic approach that includes a customer-first perspective. Each technological development (e.g., AI agents, cryptocurrencies, or embedded finance) will be evaluated based on how it transforms the customer experience. Questions such as "How will this technology simplify financial transactions?" or "What new value does it create for users?" will guide the analysis.

The two pillars of the methodology – literature based analytical frameworks and customer-first analysis – are interconnected. The literature review provides the foundational knowledge needed to evaluate technological and market trends, while the customer-first approach ensures that these insights are translated into practical implications for end-users. By combining these elements, the paper offers a holistic perspective on the future of Fintech, balancing academic insights with real-world relevance. By integrating these elements, the paper provides a comprehensive and actionable vision of the Fintech ecosystem in 2040, offering valuable insights for industry professionals and academic researchers alike.

While this methodology provides a robust framework for exploring the Fintech ecosystem in 2040, it is not without limitations. The rapid pace of technological change implies that some projections may become outdated as new innovations emerge. Additionally, the customer-first approach relies on assumptions about future consumer behavior, which may evolve in unpredictable ways. Despite these limitations, the methodology provides a structured and insightful approach to understanding the long-term evolution of the relevant drivers of change in the industry.

FIGURE 2
Holistic View on the Today's Participants on the Fintech Market

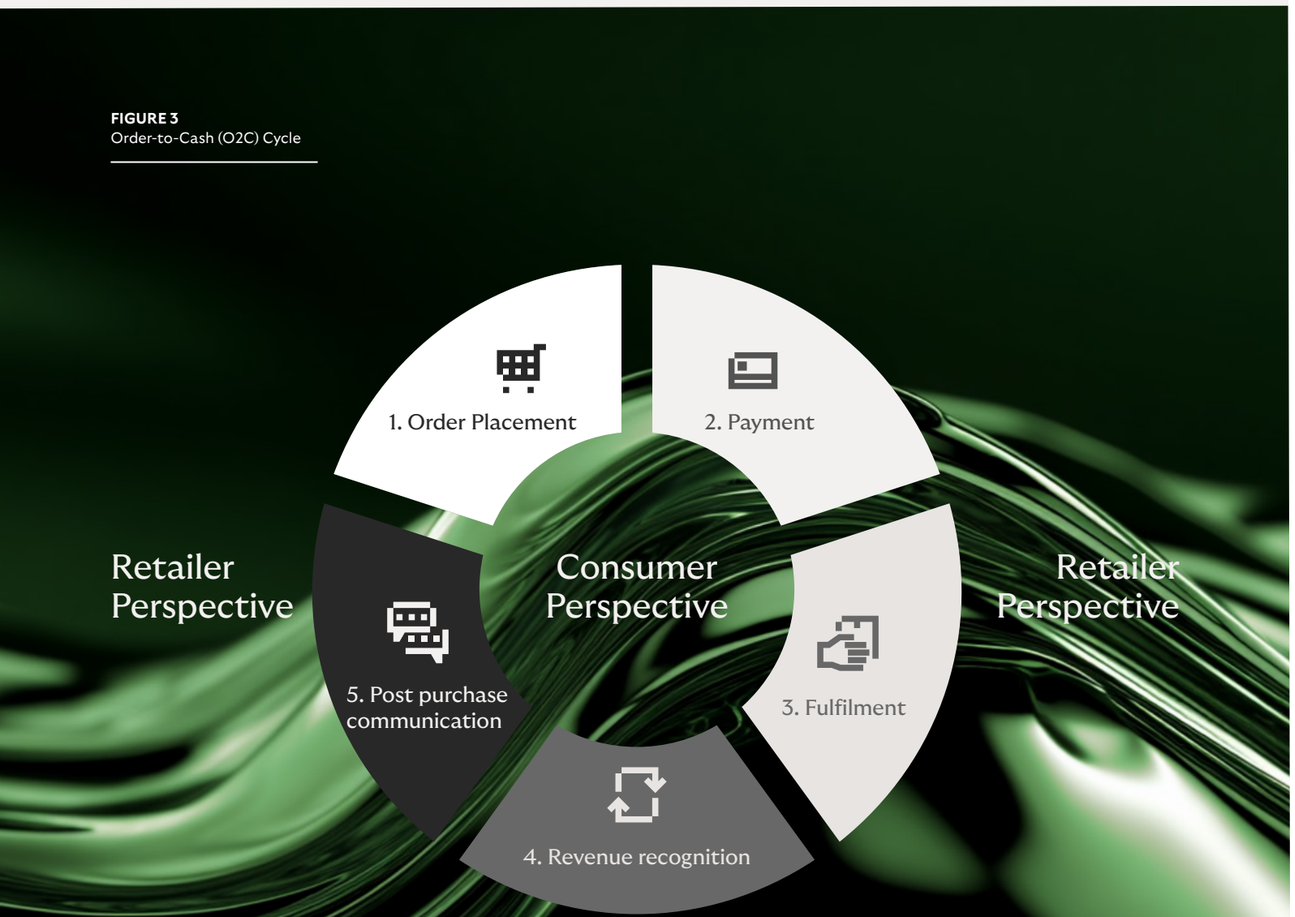


Fintech Shift

The Impact of Digitization on the current Fintech value chain and Ecosystem.

Grasping today's baseline is essential; it reveals not only where value is created right now, but also where tomorrow's leaps will land first.

FIGURE 3
Order-to-Cash (O2C) Cycle



The definition of the term "Fintech" varies among the academic literature (Milian et al., 2019). The different definitions include different perspectives on Fintech: technology, society, business models, and stakeholders (Poon et al., 2024).

In this paper the term Financial Technology, commonly referred to as "Fintech", represents the innovative integration of technology with financial services to enhance, streamline, and revolutionize the traditional financial landscape. The concept of Fintech has evolved to encompass a broad range of applications, including banking, lending, insurance, and investment services, often disrupting traditional financial institutions with its agile and customer-centric approach.

One use case within the Fintech ecosystem lies in optimizing the ecommerce Order-to-Cash (O2C) value chain. This comprehensive process encompasses the entire user journey from the moment a customer places an order to the final receipt and recording of payment. It includes critical steps such as order management, credit assessment, inventory control, triggering order fulfillment, invoicing, payment collection, and accounts receivable management. Focusing on the O2C value chain allows for a detailed examination of how Fintech solutions can optimize each phase, leading to enhanced operational efficiency and improved customer satisfaction.

This chapter examines the current status quo of the Order-to-Cash value chain, focusing on the digital transaction between a customer and a retailer. This everyday interaction happens hundreds of million of times each day. For example, when a reader buys an eBook on a publisher's website. The O2C value chain can be grouped into five steps:

1. Order Placement
2. Payment
3. Fulfilment
4. Revenue recognition
5. Post purchase communication

This approach helps to clarify one of the main business models of the Fintech Industry and the current challenges posed by the digital transformation of the branch. By breaking down the process into five key value chain steps, the paper analyzes how digitization has transformed each stage and highlights the perspectives of both customers and retailers. This analysis serves as a foundation for understanding how further technological advancements will be able to shape the Fintech ecosystem by 2040.

1. Order Placement

From the customer's perspective, the order process begins with the expectation of a seamless and intuitive interface provided by the retailer that allows them to browse products, compare prices, and place orders with minimal friction. Digitization has enabled features such as personalized recommendations, real-time inventory checks, and one-click ordering, all of which enhance convenience and streamline the purchasing journey (Weng et al., 2024). For retailers, digitization has unlocked the ability to leverage data analytics and artificial intelligence (AI) to optimize product offerings, pricing strategies, and user interfaces. By tracking customer behavior and predicting demand, retailers can create a more efficient and tailored order process.

During the order Placement Stage, customers rely on digital tools such as credit scoring, affordability checks, and buy-now-pay-later (BNPL) options to assess their purchasing power (Peng and Muki, 2022). These tools provide transparency and flexibility, enabling customers to make informed financial decisions.

Fintechs provide at this stage a vast array of local payment options via APIs to acquiring banks, wallets, and BNPL providers. This allows ecommerce retailers to evaluate customer creditworthiness in real time, thereby reducing the risk of defaults. AI-driven algorithms analyze transaction histories and behavioral data to offer tailored financing options, ensuring that customers receive offers that align with their financial capabilities.

2. Payment

Payment processing is a critical step in the observed value chain where customers demand fast, secure, and diverse payment options, including digital wallets, cryptocurrencies, and card payments. Digitization has made transactions instantaneous and borderless, significantly improving the overall shopping experience. Retailers, on the other hand, typically integrate multiple payment gateways to cater to customer preferences while ensuring compliance with security standards. Fintech solutions not only reduce transaction costs but also minimize fraud risks through advanced encryption and tokenization technologies.

3. Fulfilment

Once an order is placed, customers expect real-time tracking, delivery notifications, and flexible delivery options. Digitization has enabled end-to-end visibility into the fulfilment process, enhancing trust and satisfaction. For retailers, Fintech-enabled logistics platforms optimize supply chains, manage inventory, and automate shipping processes. Emerging technologies like blockchain are increasingly used to ensure transparency and traceability, further improving the efficiency of order fulfilment.

Part of the Fulfilment phase is the returns and refunds process. Hassle-free return policies and instant refunds have simplified this process through automated systems and digital refund options. Retailers leverage Fintech solutions to automate return authorizations, track returned items, and process refunds efficiently. This not only reduces operational costs but also improves customer retention by creating a positive post-purchase experience.

4. Revenue Recognition

While customers are generally unaware of the intricacies of revenue recognition and payment settlement, they expect accurate billing and timely settlements. Digitization ensures that transactions are processed correctly and reflected in their accounts without delays. For retailers, Fintech platforms automate revenue recognition and settlement processes, reducing manual errors and improving cash flow management. Real-time settlement systems further enhance liquidity, enabling retailers to operate more efficiently.

The process of Reconciliation and Debt collection helps the retailers at this stage to maintain financial accuracy and recover overdue payments. Customers benefit from clear and accurate billing statements, which reduce disputes and enhance trust. Digitization enables automated reminders for overdue payments, helping customers manage their finances more effectively. Retailers, on the other hand, use AI-powered reconciliation tools to match transactions and identify discrepancies. Automated third party debt collection improve recovery rates while maintaining positive customer relationships.

5. Post Purchase Communication

Post Purchase Stage refers to the sum of all the communication processes that occur at the end of a O2C-transaction. This includes chargebacks and disputes, customer support and the handling of Feedback and Reviews.

At this stage, customers nowadays demand 24/7 access to assistance through hotlines, chatbots or AI-driven assistants. Digitization has made customer support more accessible and responsive, enabling customers to resolve issues quickly and conveniently. Retailers use Fintech-enabled customer relationship management (CRM) systems to provide personalized support, resolve issues efficiently, and gather feedback for continuous improvement. This creates a more engaging and satisfying customer experience.

Chargebacks and disputes are an inevitable part of the financial value chain. Customers expect fair and transparent dispute resolution processes, and digitization has made it easier to file claims and track their status. This enhances trust in the payment system and ensures a positive customer experience. Retailers use Fintech solutions to manage chargebacks efficiently, leveraging data analytics to identify fraudulent claims and reduce losses. This not only protects revenue but also strengthens the retailer's reputation.

With the help of feedback and review systems, customers can access ratings from other customers to make informed purchasing decisions. On these platforms, customers share feedback and access reviews, creating more transparent and trustworthy marketplaces. For retailers, Fintech tools analyze customer feedback to identify trends and improve products and services. Sentiment analysis and AI-driven insights help retailers stay competitive by addressing customer needs and preferences.

Looking at the five steps of the digital O2C chain in Fintech industry demonstrates how digital solutions like AI have fundamentally transformed the industry in the last decade, creating a more efficient, transparent, and customer-centric ecosystem. From the initial evaluation of the order process to the collection of feedback and reviews, each step has been enhanced by technological innovations that benefit both customers and retailers. However, challenges such as data privacy, data transparency, financial inclusion, and cybersecurity, remain. Other emerging technologies continue to reshape this value chain, creating new opportunities and challenges for stakeholders. The next chapter will explore these technological changes in greater detail, setting the stage for envisioning the Fintech ecosystem of the future

Transformation

Selected Technological Changes in the Market.

Six technology clusters that promise to reorder cost curves, business models and customer expectations.

Financial technologies are evolving along two critical dimensions: *Personalization and Automation*. Personalization answers the question how tailored and user-centric new technologies are. Automation clarifies how autonomously they can operate.

The following section maps six key technologies on a Personalization–Automation matrix, projecting their 2040 position, trajectory from 2025 to 2040, and consumer-facing impacts. Each placement is backed by current research and industry analysis.

All examined technologies have an impact on the O2C value chain by making it more efficient, and consumer friendly. The following chapter analyzes the changes for the observed value chain and describes the improvements that can be implemented for either the merchants, the consumers, or the industry.

1. AI agents
2. AI based Cybersecurity
3. Cryptocurrency & DeFi
4. Embedded Finance
5. Financial Transparency, Literacy & Inclusion
6. Quantum Computing

The key effects of these technological categories on consumers can be differentiated based on a two-axis scale from Standard Products to Personalization and from Human centered Processes to Automation. The volume of the current and the potential markets is represented by the volume of the bubble for each category (→ **FIGURE 4**).[1]

1 It is important for the reader to keep in mind, that the prognosted market volumes for the different key technologies imply that the world growth path will stay "constant" in the upcoming 15 years and that potential external shocks like global diseases, war situations etc. are not included into the future projections.

1. AI agents

AI agents are software entities that can perceive their environment, learn from data, and take autonomous actions to achieve specific goals. They draw on a combination of neural networks, machine learning algorithms (ML), and natural language processing (NLP) to analyze information, refine predictive models, and interact with users through conversational interfaces. By making these technologies more accessible – with the help of new devices and cloud computing – AI agents can serve as always-available assistants, handling tasks from personalized financial advice to real-time fraud detection (Russel and Norvig, 2021).

Changes for the O2C value chain

In Fintech AI agents can be used to execute complex tasks – such as the creation of personalized investment strategies, risk assessments, fraud detection, and automated lending decisions. Current studies imply that these abilities will continuously increase and that the efficiency can exceed the efficiency of their human counterparts (Vilar and Khan, 2021).

Instead of segmenting customers into broad groups, financial institutions can aim with the help of AI agents for a "segment of one", treating each customer as unique in the O2C value chain. Starting with order placement, AI agents can enhance personalization for consumers by analyzing transaction history, spending patterns, savings habits, and even social media usage to offer customized products.

For example, an AI system might detect that a customer frequently spends on travel and has a growing savings balance; it could then proactively offer a tailored travel rewards credit card or a higher-yield savings account.

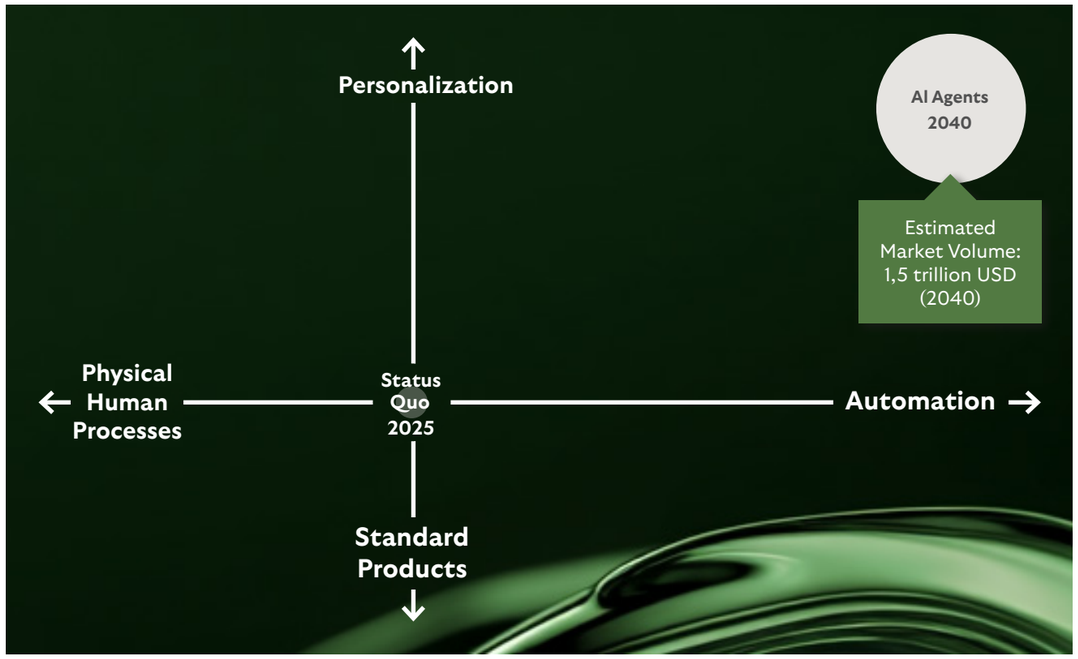
In the phase of fulfillment, AI agent may provide information via real-time tracking, keeping consumers informed about their orders. Post-Purchase Communication benefits from AI through proactive customer support, addressing inquiries and issues promptly.

At the same stage, AI agents can optimize logistics by predicting demand spikes and automating warehouse operations, similar to Amazon's anticipatory shipping models, which reduce delivery times and cut costs through smarter inventory management (Poechhacker and Nyckel, 2020).

From an industry perspective, the adoption of AI agents in the O2C process sets new standards for efficiency and customer engagement. Ecommerce companies can explore advanced AI technologies to develop autonomous shopping agents that assist customers by recommending products, adding items to their cart, or even making purchases on their behalf. These AI agents understand user habits and trends to provide personalized shopping experiences, thereby enhancing customer satisfaction and loyalty.

Financial institutions are on track to save more than $1 trillion by 2030 thanks to AI agents that negotiate, invest and detect fraud autonomously.

FIGURE 4: Trajectory AI agents from 2025 to 2040.



Trajectory from 2025 to 2040

Today, the use of AI in Fintech Industry is largely focused on the backend side of Fintech systems (fraud detection, credit scoring) with modest personalization. (Poon et al., 2024) Over the next 15 years, AI agents are assumed to evolve from basic chatbots to sophisticated financial concierges that proactively manage budgets, investments, and transactions. Analysts estimate the potential savings for the Banking and Fintech Industry until 2030 at over 1 trillion USD (Joyce, 2018). Low estimations from the consulting company McKinsey expect an annualy volume of 1.5 trillion USD for AI software and services in the year 2040 (and the high estimations go up to 4.4 trillion USD per year) (Kaput, 2024).

As AI agents in Fintech continue to improve in the upcoming years, the user experience will probably shift to conversational interfaces and recommendations that imitate real life conversations. These give the consumer the feeling of being accompanied by a personal assistant that is always ready to interact (Marous, 2025).

These personal finance management assistants of the future can – other than today – become proactive: for example, an AI agent might alert the customer of upcoming bills and automatically adjust spending or find personalized deals for insurance and credit.

By 2040, it is assumed that advanced AI will progress its capacity to understand the psychological and emotional situation of customers (Rainie and Andersson, 2024), ensuring recommendations that respect personal risk tolerance and long-term financial objectives while requiring minimal intervention from human operators.

With greater capabilities of its AI agents, the Fintech branch will presumably arrive in an "agentic AI era," where the tasks of AI move beyond back-office tasks to front-end customer engagement, enabling more intuitive interactions and tailored solutions for individuals seeking streamlined banking and investment services.

This trajectory is represented in the analytical framework matrix by an upward and rightward shift (→ **FIGURE 4**). The technology is becoming increasingly personalized by learning about the individual situation and financial habits of the customer – and more autonomous by making more decisions on a user's behalf.

2. AI based Cybersecurity

In Fintech, cybersecurity encompasses the processes, tools, and best practices designed to protect digital financial systems and user data from unauthorized access and cyberattacks. Today, Fintech institutions rely on technologies such as advanced firewalls, end-to-end encryption, intrusion detection systems, multi-factor authentication, and real-time threat intelligence to safeguard operations and customer information. Machine learning models analyze network traffic and user behavior to identify potential threats (Javaheri et al., 2023).

As these technologies evolve, so do the threats to customers and companies alike. Emerging technologies, such as artificial intelligence, machine learning, and quantum computing offer new ways to enhance cybersecurity. But they also provide attackers with tools to develop more advanced threats.

At the same time, financial services firms face a significantly higher risk of cyber-attacks compared to companies in other industries, with studies showing they are 300 times more likely to be targeted. This growing threat is reflected in the fact that 63% of financial institutions reported a rise in cyber-attacks in recent years (Heins, 2022).

The costs arising from breaches – including ransom payments, system repairs, reputational damage, and loss of trust – are substantial. Fintech companies are increasingly aware of these risks and are investing in cybersecurity to mitigate potential financial losses. In response, approximately one-third of these institutions have boosted their cybersecurity budgets by 20 to 30% to strengthen their defenses (Heins, 2022).

Changes for the O2C value chain

In the next 15 years the expanded integration of artificial intelligence can drive the evolution of cybersecurity. A key application of AI in cybersecurity is threat detection. Conventional security approaches typically rely on signature-based detection, which identifies threats by matching known patterns. While effective against recognized threats, this method often struggles with new or unfamiliar threats. AI, particularly through machine learning, can analyze vast quantities of network data, system logs, and other security-related information. It identifies anomalies and potential threats that might otherwise go unnoticed.

In the eCommerce Order-to-Cash (O2C) value chain, AI-based cybersecurity could emerge as a critical enabler of trust and resilience across all five phases of the value chain. At the payment stage, AI models trained on global transaction datasets will detect subtle anomalies indicative of fraud, such as mismatched billing addresses or unusual purchase velocities.

During fulfillment, AI can oversee supply chain operations to detect vulnerabilities or breaches, ensuring that products are delivered securely and inventory data remains uncompromised. During revenue recognition, AI will safeguard financial systems from manipulation or data leakage, automatically flagging discrepancies in invoicing or compliance reporting. Revenue recognition tools such as BlackLine employ AI to audit revenue cycles, ensuring adherence to standards like ASC 606 while detecting internal fraud (Boyle and Milne, 2018). Finally, in post purchase communication, AI-powered tools can secure customer interactions by detecting phishing attempts and ensuring that communication channels remain trustworthy, thereby enhancing customer confidence and loyalty.

Moreover, AI is transforming incident response by automating critical processes. AI-powered security systems can isolate compromised devices, block malicious traffic, and even initiate remediation efforts. This rapid response capability is crucial for minimizing damage and reducing downtime, especially in today's fast-paced digital environment (Hightower, 2024).

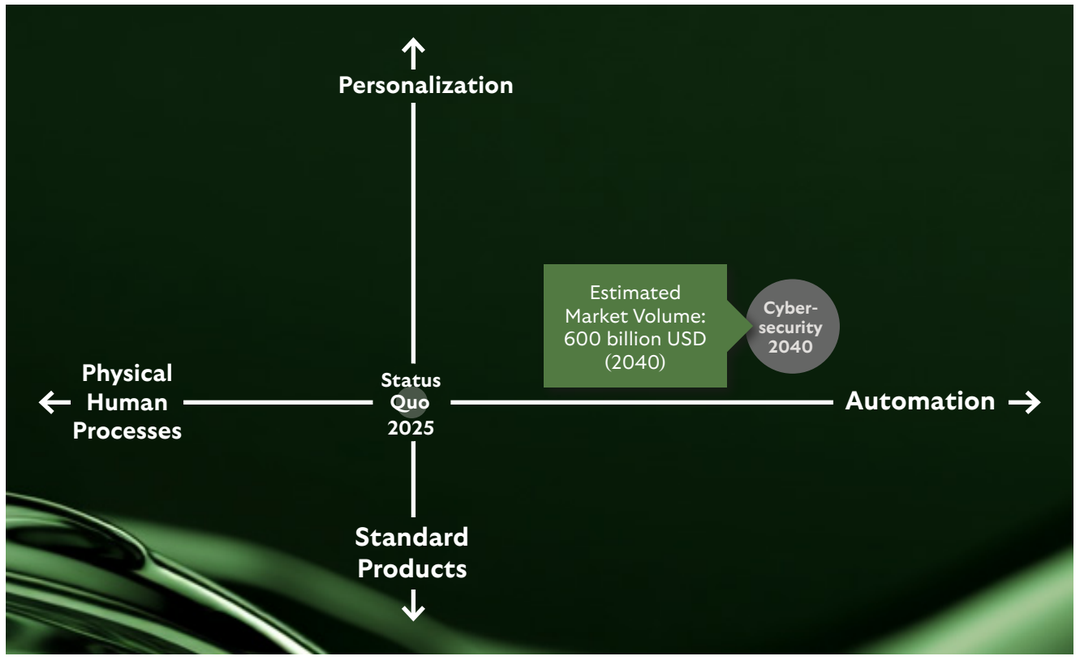
Consumers benefit from personalized fraud prevention – for example, if an unusual transaction occurs, AI will instantly block or verify it based on the user's typical behavior. Thanks to predictive analytics financial systems will likely predict and prevent breaches before they impact customers. The result is less friction, fewer false fraud alerts or locked accounts and more trust from the consumers.

Trajectory from 2025 to 2040

In 2025, cybersecurity in finance relies on AI primarily for fraud monitoring and anomaly detection. Human analysts still play a major role in overseeing alerts and decisions. Over the next 15 years, the Fintech industry is likely to embrace more autonomous cybersecurity systems that handle both routine tasks and sophisticated threat responses with minimal human involvement. By 2030, an estimated 70% of cybersecurity responsibilities could be fully automated (Hightower, 2024), accelerating further into 2040 as these systems gain the ability to self-learn and adapt to increasingly complex threats.

By seamlessly adapting to each user's behavioral patterns in real time and highlighting unusual deviations, AI based cybersecurity systems in 2040 can reduce fraud, enabling people to conduct financial transactions with confidence. Passwords and routine logins may disappear and could be replaced by passive, continuous authentication based on biometric factors. Even factors like typing rhythm or phone usage habits could be analyzed by these systems leading to an increased layer of security. In this way, future cybersecurity in Fintech balances automation and personalization to deliver both robust protection and a frictionless customer experience.

FIGURE 5: Trajectory Cybersecurity from 2025 to 2040



The market for AI in cybersecurity is anticipated to expand significantly in this timespan, increasing from 28.51 billion USD in 2025 to 177.14 billion USD by 2034 (Munde, 2025). This growth reflects a compound annual growth rate (CAGR) of 22.50%. Assuming the market keeps growing at that pace, the AI in cybersecurity market is projected to reach approximately 600 billion USD by the year 2040.

At that time, financial cybersecurity will probably operate largely on autopilot, leveraging AI-driven threat detection and response across accounts and transactions without the need for human intervention. This high level of automation places cybersecurity firmly on the upper end of the automation spectrum. Meanwhile, the integration of adaptive security measures provides a moderate boost in personalization, tailoring defenses to each user's activity and risk factors, though it often remains hidden from the experience of the customer. This evolution moves cybersecurity toward the upper-middle of the matrix – high in automation, moderate in personalization (→ **FIGURE 5**).

The biometric-security market is on track to hit $307 billion by 2034, almost the size of today's global apparel e-commerce sales.

3. Cryptocurrencies and Decentralized Finance

Decentralized Finance (DeFi) represents a paradigm shift in financial services, leveraging blockchain technology to eliminate intermediaries, such as banks and brokers, from financial transactions. Instead, it relies on decentralized protocols to facilitate activities like lending, borrowing, trading, and investing. As highlighted by Gogol et al. (2024), DeFi protocols provide secure, transparent, and automated financial solutions, appealing to both retail and institutional users.

A cornerstone technology of DeFi are the so-called smart contracts. Smart contracts are self-executing agreements embedded in blockchain technology, enabling trustless, automated financial transactions and services without intermediaries. They facilitate secure and transparent interactions, powering key financial applications such as lending, borrowing, decentralized exchanges, and automated market-making. Their immutability and programmability allow for innovative financial products and governance mechanisms, enhancing efficiency and reducing operational costs (Chen and Bellavitis, 2020).

Cryptocurrencies, such as Bitcoin or Ethereum, are decentralized digital assets secured by cryptography, enabling peer-to-peer transactions without traditional intermediaries (Kayani and Hasan, 2024). They can facilitate near-instant international remittances without incurring high intermediary fees, making them especially appealing to international financial transactions – like migrant workers sending money home. By removing much of the overhead associated with traditional cross-border transactions, they offer a faster, more cost-effective alternative to fiat money.

Central Bank Digital Currencies (CBDCs) are government-backed digital currencies designed to combine the transparency and efficiency of blockchain technology with the stability of traditional central bank created money. Cryptocurrencies and CBDCs play a significant role in the evolution of Fintech markets by expanding access the access of consumers to global markets, reducing transaction costs, and increasing transparency. Moreover, CBDCs may help streamline government-to-person payments, while cryptocurrencies can foster financial innovation in areas like cross-border trade, and decentralized finance. As these digital currencies evolve and mature, they are poised to reshape how individuals, businesses, and governments perform transactions in the future.

Changes for the O2C value chain

In the eCommerce Order-to-Cash (O2C) value chain, cryptocurrencies, and decentralized finance (DeFi) can increase transparency for the customers and the companies across all five stages. Smart contract features enable automated contracts and conditional payments, serving as powerful tools in supply chain finance or insurance claims that trigger payouts upon the occurrence of specific events, such as delivery confirmations or natural disasters.

At order placement, blockchain-based smart contracts can automate and enforce terms between buyers and sellers, eliminating disputes over pricing or delivery conditions. For companies, platforms like OpenSea already demonstrate how programmable agreements reduce administrative overhead, while consumers gain clarity on obligations before committing to purchases (Shah et al, 2023).

In the payment phase, cryptocurrencies facilitate lower transaction fees compared to traditional payment methods, as they eliminate intermediaries like traditional banking accounts. This reduction in costs can lead to increased profit margins. Additionally, the immutable nature of blockchain technology ensures secure transactions, mitigating risks associated with fraud and chargebacks.

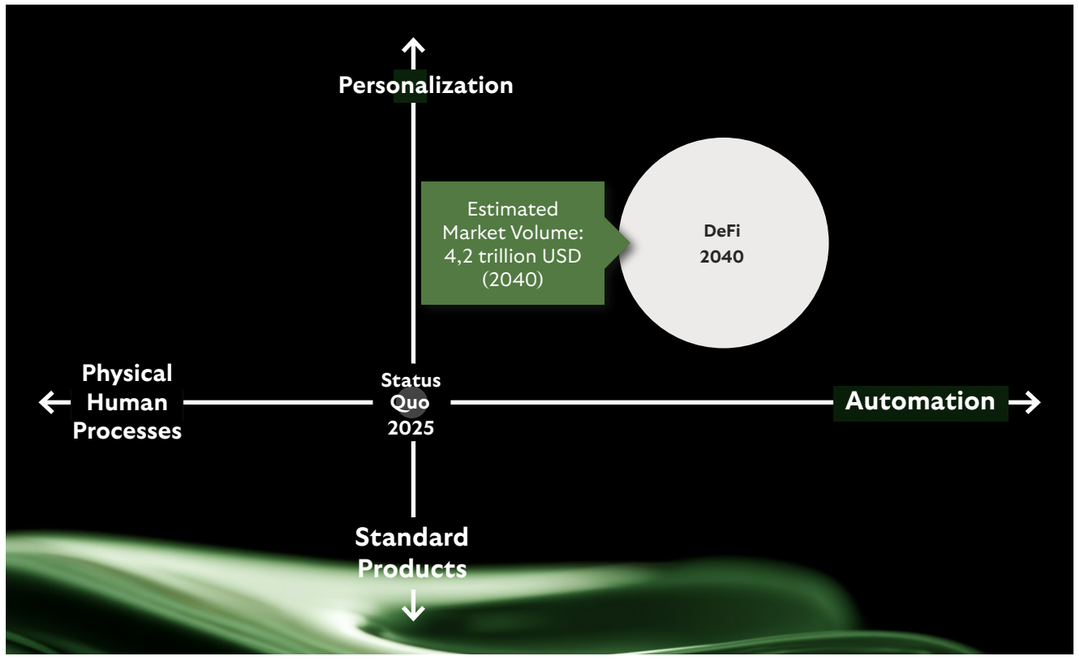
The transparency of DeFi structures is another benefit: public blockchains let users audit transactions and understand fee structures, unlike the often untransparent remittance processes in traditional banking. Personalization is enabled by letting users combine various DeFi services to fit their needs –such as using a decentralized exchange for selected assets and a lending protocol with custom parameters.

In fulfilment, blockchain's immutable ledger will enhance supply chain transparency, enabling real-time tracking of goods from warehouse to delivery. Companies like VeChain use decentralized networks to verify product authenticity and shipment integrity, reducing fraud and returns.

Projects like Chainlink's decentralized oracles can feed real-time data into financial systems, minimizing manual reconciliation for businesses. Consumers benefit from precise billing records, while regulators gain transparent access to audit trails, fostering industry-wide compliance.

Finally, in post-purchase communication, decentralized identity solutions and tokenized loyalty programs can empower consumers to own and monetize their data (Kaul, 2024). Platforms like Brave's Basic Attention Token (BAT) exemplify how users might earn crypto rewards for engaging with post-sale content, while cryptocurrencies like Rally enable brands to issue branded tokens for personalized customer engagement.

FIGURE 6: Trajectory DeFi from 2025 to 2040.



Trajectory from 2025 to 2040

Between 2025 and 2040, DeFi and cryptocurrencies could transform from a niche option predominantly used by crypto enthusiasts into a mainstream system that offers both high automation and increasing levels of personalization. This evolution expands financial inclusion, enabling people in remote locations to join the global economy without traditional banks. PwC estimates the the DeFi economy could add over 1.7 trillion USD to the global GDP by 2030, illustrating how transformative DeFi could become in reshaping financial industry (PwC, 2020). Experts from Market Research Future expect similar numbers, projecting that the DeFi market could rise from 44.59 billion USD in 2025 to USD 1.4 trillion USD by 2034. This expansion corresponds to a compound annual growth rate (CAGR) of 46.8% over the forecast period (Dhapte (a), 2025). If the DeFi market continues growing with a lowered CAGR of 20% beyond 2034, as the adaptation of DeFi and cryptocurrency are limited by the number of potential users, the projected market volume could still be expected to reach approximately 4.2 trillion USD by 2040.

If these numbers were correct, the corresponding widespread adoption would lead to a completely revolutionized, decentralized financial ecosystem. Consumers in this ecosystem could have on-demand access to lending, savings, or investment opportunities, all governed by transparent smart contracts and easily integrated into everyday apps. Central banks could lean on CBDCs to monitor monetary policy more precisely, adjusting supply or interest rates in real-time to stabilize markets. In this environment, individuals enjoy faster, cheaper, and more secure financial services, while governments and businesses benefit from transparent, efficient transaction rails.

In this scenario, DeFi and cryptocurrencies will strengthen automation over time, as smart contracts gradually replace manual processes like legal agreements and intermediaries, handling everything from insurance claims to trade finance. Personalization also improves in the next 15 years as user-friendly interfaces, AI-driven agents, and modular platforms let individuals customize their financial investments. For the trajectory from 2025 to 2040, DeFi and cryptocurrencies remain near the top of the automation scale and provides moderate-to-high personalization. (→ **FIGURE 6**).

4. Embedded Finance

Embedded Finance refers to the seamless integration of financial services into non-financial platforms, products, or services. This innovative approach enables companies to provide financial functionalities such as payments, lending, insurance, or investment directly within their offerings, enhancing user experience and operational efficiency. It also opens new revenue streams for businesses by leveraging data-driven insights to customize financial solutions, thereby improving customer retention and fostering greater convenience.

Wearable fitness trackers f.e., typically associated with health monitoring, step counting, or calorie tracking, could be equipped with embedded finance capabilities. This wearable device could automatically facilitate micro-payments for gym memberships, personal trainer sessions, or premium subscriptions based on usage data, activity levels, or achieving certain fitness milestones. For instance, after a user completes a predefined fitness goal – like reaching 10,000 steps daily over a pred-defined time span – the wearable seamlessly unlocks rewards or cashback offers directly into the user's linked bank account or digital wallet. Additionally, embedded finance could enable the wearable to offer insurance tailored to health metrics, dynamically adjusting premiums according to real-time biometric data.

As more businesses recognize the benefits of integrating financial products into their existing platforms, embedded finance is evolving along two primary axes: increased personalization and enhanced automation. Early implementations often meant a simple payment option within an app. In the future, however, embedded finance might tap into rich data to deliver financial service at the right moment for each user.

Changes for the O2C value chain

Along the O2C process, embedded finance provides additional financing options, enabling customers to choose payment plans that suit their financial situations, thereby enhancing purchasing power and satisfaction.

During the first step of the O2C value chain, embedded finance enables businesses to offer tailored financing options, such as buy-now-pay-later (BNPL) services, directly within the purchasing process. This flexibility can increase conversion rates and average order values by making products more accessible to customers.

In the Payment phase, seamless integration of payment methods within the eCommerce platform simplifies the checkout process, reducing friction and the likelihood of cart abandonment. During fulfillment, consumers benefit from improved transparency and trust, knowing that sellers have immediate access to funds, which can lead to faster and more reliable deliveries.

Finally, in post-purchase communication, embedded loyalty ecosystems – such as Amazon's co-branded credit cards or Starbucks' rewards-linked savings accounts – will deepen engagement. Consumers automatically earn interest or redeem points for future purchases within the same interface, while companies leverage embedded data analytics to personalize retention offers. For the industry, embedded finance turns post-sale interactions into profit centers, as platforms like Salesforce integrate banking-as-a-service (BaaS) to monetize customer insights through tailored microloans or insurance upsells (Ilfrim, 2024).

Trajectory from 2025 to 2040

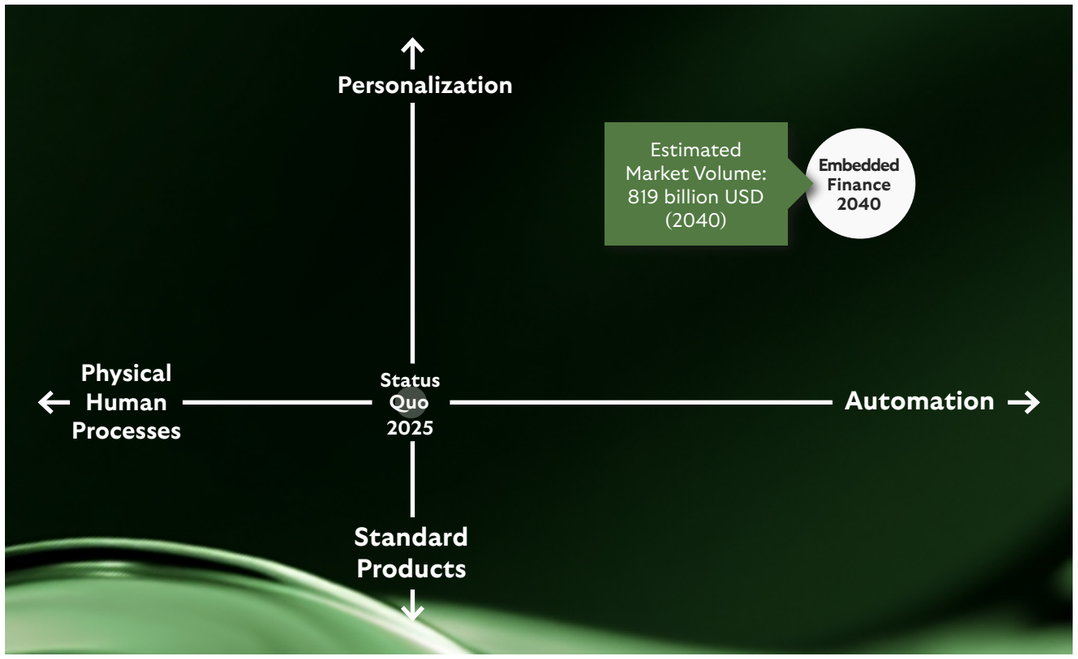
Consumers in 2040 may hardly notice that they are using financial services because these systems are so deeply integrated into their everyday experiences. Embedded finance allows customers in 2040 to have access to solutions whenever a need arises – whether to pay, borrow, insure, or invest. The boundaries between these activities are shaped to continuously blur. Thanks to contextual data, each option is personalized: location, activity, loyalty status, and purchase habits all factor in. Thus, financial transactions can happen seamlessly in the background with minimal customer input.

From a consumer standpoint, this integration expands access and saves time, especially for those who might not have sought traditional financial offers. For example, a small business using an e-commerce platform might automatically receive a financing offer based on sales data. Similarly, a Fintech app in 2040 might integrate social messaging, payments, and micro-loans, all in one place.

By 2040, industries ranging from retail to healthcare can embed financial products directly into their platforms, greatly reducing friction for users. Embedded finance could make financial tasks so intuitive and user-friendly that the notion of a standalone banking app could disappear. These functionalities simply reside within the apps people already use.

The Embedded Finance market was valued at 73.57 USD billion in 2023 and is projected to expand significantly to 241.79 billion USD by 2032 (Dhapte (b), 2025). This growth represents a compound annual growth rate (CAGR) of approximately 16.50%. If the market maintains this CAGR beyond 2032, the projected market size for 2040 can reach up to USD 819.40 billion USD by 2040.

FIGURE 7: Trajectory Embedded Finance from 2025 to 2040.



Between 2025 and 2040, embedded finance is set to become highly automated, yet still user-driven. Many processes – like instant credit checks at checkout or automatic insurance when booking a flight – will happen without the necessity for the consumer to intervene. As a result, embedded finance is near the top-right in the model: highly personalized and moderately automated. (→ **FIGURE 7**).

Embedded finance – payments and loans baked into every app – is forecast to reach $819 billion in revenue by 2040, enough to eclipse today's global airline industry.

5. Financial Transparency, Literacy & Inclusion

Open access to personal financial data could become the foundation stone of an enhanced financial transparency and literacy: in the future, consumers will probably demand clearer explanations of how their data is collected, processed, and used, fostering deeper confidence in the services they adopt.

With user-permissioned open access to their bank account, credit history, investment portfolio, and spending data, financial transparency apps could provide comprehensive, personalized insights for customers that clearly illustrate how spending decisions today directly impact long-term financial goals, such as retirement or purchasing a home.

Financial inclusion refers to the ability of individuals and businesses – especially those in underserved or unbanked communities – to access affordable, reliable, and innovative financial services. By addressing barriers like high fees and limited infrastructure, financial inclusion helps people build savings, establish credit histories, and invest in their futures. This includes basic banking, digital payments, credit, insurance, and investment opportunities, enabling broader participation in economic activities and fostering development.

In 2025, roughly 1.4 billion adults globally still lack formal banking access, though progress continues – Indonesia, for example, increased its banked population from 49% in 2014 to 83% in 2023 with the help of Fintech growth (Iswaratioso, 2025).

According to the World Economic Forum, financial inclusion applications already enhancing financial inclusion by refining risk assessments and detecting fraud, especially for underserved segments. Consumers who were previously “unscorable” can now be assessed using mobile payment histories, social data, or other non-traditional indicators. Moreover, automated processes drive down service costs, enabling banks and Fintechs to offer no-fee accounts or very small loans profitably, thus bringing more people into the financial system (World Economic Forum. 2024).

A rural entrepreneur, for instance, could open an account on his phone within minutes, guided by an AI assistant in his local language. After the IP process is successfully finished, he could receive a micro-loan tailored to his specific needs within minutes.

In combination, financial transparency, literacy, and inclusion help to push forward the so-called concept of “Open Banking” that helps shifting control of financial data from institutions to consumers, allowing them to access a wider variety of financial products and services that can be customized to their specific needs. Ultimately, strengthening market efficiency, reducing entry barriers for Fintech innovators, and driving consumer-centric financial services that are more convenient, personalized, and cost-effective.

Changes for the O2C value chain

Along the O2C value chain, financial transparency, literacy, and inclusion empower customers to make informed purchasing decisions, understanding the implications of their financial commitments. Before placing an order at an ecommerce platform consumer will be able to oversee the consequences of their decisions. With the help of intuitively designed digital dashboards, all relevant data can accessible in real-time. For example, including a warning alert by an AI agent when exceeding the credit line with a new acquisition.

For businesses, transparent pricing algorithms reduce disputes and build brand loyalty, while industry-wide adoption of standardized disclosure frameworks – such as the global Legal Entity Identifier (LEI) system – could curb hidden fees, leveling the playing field for smaller merchants (Frosinini, 2025).

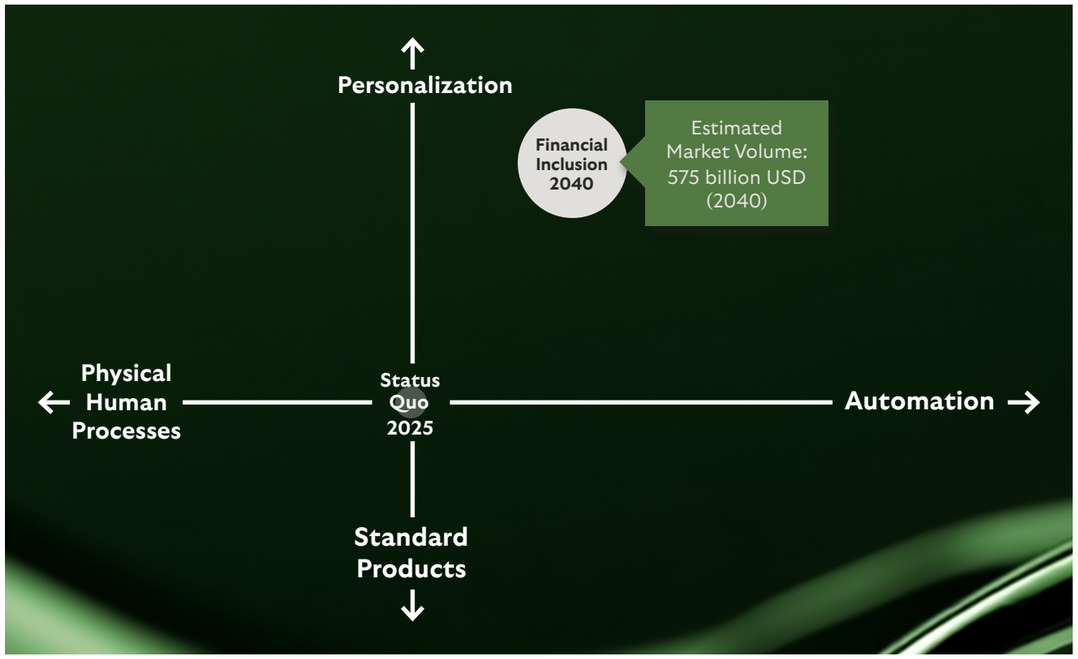
Platforms like PayPal’s Community feature demonstrate how integrating literacy resources into checkout flows can educate users on managing digital transactions securely. Companies benefit from reduced cart abandonment in emerging markets, while consumers gain autonomy through tools like savings calculators or debt management tips embedded in payment interfaces.

From an industry perspective, promoting financial transparency across the O2C process sets a standard for new business practices, encouraging accountability and reducing fraud. Enhancing financial literacy across the consumer base leads to a more informed market, where customers can engage more effectively with financial products and services. Advancing financial inclusion contributes to economic growth by integrating a larger segment of the population into the formal economy, thereby expanding the potential customer base for eCommerce businesses.

Trajectory from 2025 to 2040

In the upcoming 15 years, Open Banking and data standards likely mature globally, enabling secure real-time sharing of financial data between institutions and apps. This fosters an ecosystem where consumers can select from a wide array of integrated financial services and create personalized solutions by aggregating data.

FIGURE 8: Trajectory Financial Inclusion from 2025 to 2040.



Application Programming Interfaces (APIs) and the further development of Explainable AI stand at the technological forefront of this development. With the help of APIs banks and other financial institutions can securely share customer data, at the customer’s request, with third-party providers. Explainable AI (XAI) refers to artificial intelligence systems designed to provide clear, understandable, and interpretable explanations for their decisions, predictions, or actions. Unlike traditional "black-box" AI models, which operate in ways that are difficult for humans to comprehend, XAI aims to make AI’s decision-making process transparent, enabling users to understand, trust, and effectively manage AI-driven outcomes. In Fintech this technology can be used to empower consumers by providing clear explanations for decisions, detecting and mitigating biases, and offering personalized feedback. A consumer whose application for a loan was just denied gets a detailed explanation why this happened. Additionally, XAI can inform the consumer how to improve its credit scores. For example, it might suggest reducing credit card utilization or paying off outstanding debts to enhance the creditworthiness and suggest when reapplication might be more successful (Rane and Paramesha, 2024).

By 2040, probably more consumers will be able to experience financial transparency as all their accounts and transactions could be unified on a single dashboard, with AI highlighting relevant information and proposing potential solutions.

Importantly, transparency gains are not only expected for the user’s own data: by 2040 there may be broader transparency in fees, product terms, and even how institutions use the customer’s money. With open data, switching financial providers or benchmarking one’s rates will be easier, empowering consumers.

Applications like Proactive Debt Prevention and Financial Wellness Tools can encourage users to adopt healthier financial habits by offering budgeting tips, savings prompts, and alerts that help people avoid debt before it accumulates. In practice, this could mean personalized reminders to save a portion of each paycheck, or AI-driven insights into spending patterns that might lead to unnecessary debt.

Hyper-Personalized Payment in 2040 may offer options for real-time adjustments to payment terms and methods, making it easier for users to manage transactions according to their unique financial situations. For example, someone with an irregular income might access flexible payment plans or schedule automated bills to match their paydays.

In the global market for company loans small businesses are currently experiencing a significant financing shortfall, estimated at USD 5.7 trillion worldwide. This gap represents approximately 19% of GDP and amounts to 1.5 times of the existing supply of available funding in

emerging markets and developing economies (EMDE). As a result, about 40% of micro-, small-, and medium-sized enterprises in these regions encounter unmet financing requirements (Worldbank, 2025).

With an expected growth of the world population from recently 8 billion people to 9.2 billion people in 2040 (DNI, 2025) – and with the assumption that 10% of this formerly unbanked companies can gain access to credit solutions via financial inclusion apps in this time span – the predicted market volume can be estimated at 575 billion USD per year. And this number does not include the market potential for integrating unbanked consumers in the same time span on a global scale.

With these developments the trajectory of financial transparency, literacy and inclusion is pointing sharply toward the top-right of the matrix: handing personalized information and automated options at scale to the consumers. (→ **FIGURE 8**).

Today 1.4 billion adults are unbanked; if just 10 % gain digital credit access, it unlocks a $575 billion a-year lending market by 2040.

6. Quantum Computing

Quantum computing, which leverages the principles of quantum mechanics to perform complex calculations at unprecedented speeds, has the potential to address some of the most pressing challenges in finance, from risk modeling and fraud detection to portfolio optimization and cryptography (Hollebeek, 2024).

Quantum computing represents a paradigm shift in computational power, enabling the processing of vast amounts of data and solving problems that are currently intractable for classical computers. Unlike classical bits, which can be either 0 or 1, quantum bits (Qubits) can exist in multiple states simultaneously, thanks to the principles of superposition and entanglement. This allows quantum computers to explore many possible solutions at once, making them ideally suited for complex optimization and simulation tasks (Auer et al, 2024).

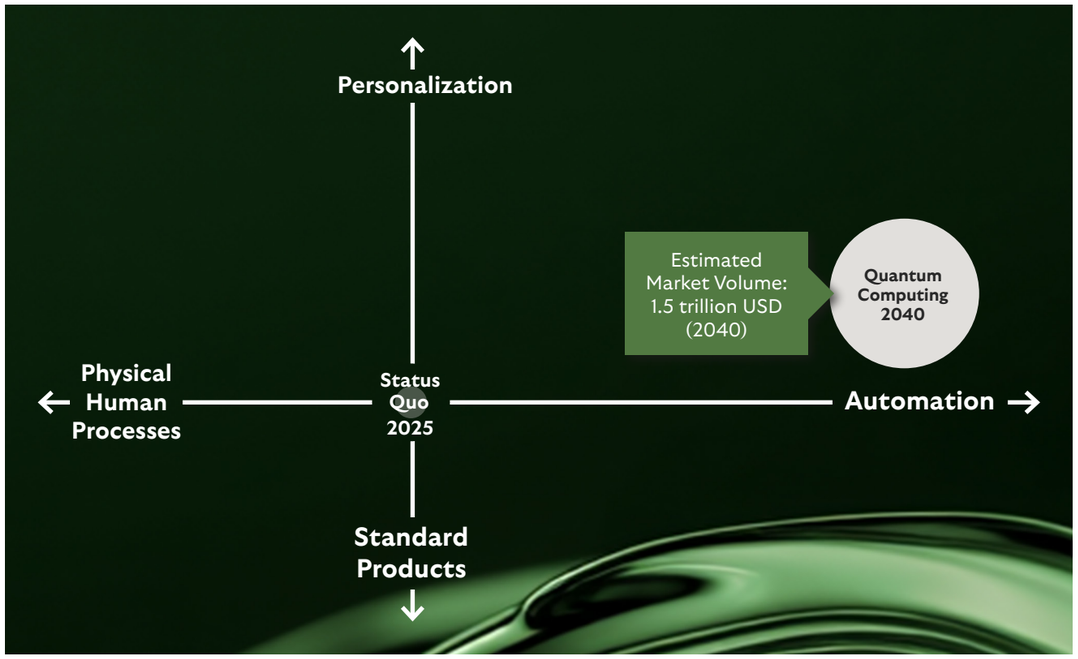
In the Fintech ecosystem, this computational power can be harnessed to drive innovation across a wide range of applications. For example, quantum algorithms can optimize investment portfolios by analyzing millions of variables in real time, enabling asset managers to maximize returns while minimizing risk. Similarly, quantum computing can enhance fraud detection by identifying patterns and anomalies in large datasets that would be impossible to analyze using classical methods.

One of the most promising applications of quantum computing in Fintech is risk modeling and simulation. Financial institutions rely on complex models to assess risk and make informed decisions, but these models often require significant computational resources and time. Quantum computers can perform these calculations exponentially faster, enabling real-time risk assessment and more accurate predictions. This is particularly important in areas such as credit risk, market risk, and operational risk, where even small improvements in accuracy can have a significant impact on outcomes.

Another key application is portfolio optimization. Traditional optimization techniques are limited by the sheer complexity of financial markets, which involve countless variables and constraints. Quantum algorithms, such as the Quantum Approximate Optimization Algorithm (QAOA), can explore a vast solution space simultaneously, enabling more efficient and effective portfolio management. This could lead to higher returns, lower costs, and better alignment with investor goals (Auer et al. 2024).

Quantum computing also has the potential to revolutionize cryptography and cybersecurity. Many of the cryptographic protocols currently used to secure financial transactions, such as RSA (Rivest–Shamir–Adleman) and ECC (Elliptic Curve Cryptography), rely on the difficulty of factoring large numbers or solving discrete logarithm problems. Quantum computers, however, can solve these problems exponentially faster using algorithms like Shor's algorithm, rendering traditional encryption methods obsolete. To address this, Fintech companies are exploring quantum-resistant cryptographic techniques, such as lattice-based cryptography, to ensure the security of financial systems in a post-quantum world.

FIGURE 9: Trajectory Quantum Cumputing from 2025 to 2040.



Changes for the O2C value chain

In the eCommerce Order-to-Cash (O2C) value chain, quantum computing has the potential to catalyze breakthroughs in speed, security, and optimization, addressing previously intractable challenges across all five stages. At order placement, quantum algorithms can analyze vast datasets – from global pricing trends to individual browsing histories – to generate hyper-personalized product recommendations in real time. Ecommerce sellers could deploy quantum machine learning to predict demand spikes with greater accuracy, dynamically adjusting inventory and promotions. Consumers benefit in this situation from tailored shopping experiences.

During payment, quantum-resistant cryptography will future-proof transaction security as traditional encryption methods become vulnerable to quantum decryption. Firms like Visa are already experimenting with quantum key distribution (QKD) to secure payment gateways, ensuring fraud-proof transactions even as cyberthreats evolve (compare chapter QKD).

In fulfilment, quantum computing could leverage help to optimize global delivery networks, balancing variables like fuel costs, weather disruptions, and customs delays to slash last-mile expenses. Consumers receive packages faster via optimized routes, while companies achieve near-zero waste in warehouse management.

Revenue recognition will transition to real-time, error-free accounting as quantum systems process millions of transactions simultaneously, reconciling cross-border tax codes and revenue streams instantaneously. Platforms like SAP could integrate quantum processors to automate compliance with regulations like ASC 606, eliminating manual audits. Consumers benefit from transparent, instantly generated invoices, while regulators gain quantum-validated financial reports, reducing industry-wide accounting fraud. Finally, in post-purchase communication, quantum natural language processing (NLP) will analyze customer sentiment across millions of interactions, enabling AI agents to resolve complaints or upsell products with human-like intuition. Companies like Zendesk might deploy quantum-enhanced chatbots that anticipate customer needs based on entangled data patterns – such as linking a product return query to a personalized loyalty offer. Consumers experience proactive, context-aware support, while the industry moves toward "quantum empathy," where machines decode emotional subtext in feedback to drive retention.

Trajectory from 2025 to 2040

By 2040, quantum computing will probably have moved from cutting-edge experimentation to a fundamental part of modern finance. As digital transactions balloon in complexity, cybersecurity is no longer a simple "add-on" but a major differentiator for Fintech firms. Quantum breakthroughs may render current encryption methods vulnerable, prompting a rapid shift to quantum-secure cryptography to protect sensitive data. Because of these developments, companies that harness quantum computing for tasks like real-time risk evaluation, encryption, and market forecasting can gain a major competitive edge.

In this future landscape, quantum computing's immense processing power could pair seamlessly with AI and blockchain. Quantum-enabled AI can analyze huge datasets to identify subtle patterns, enhancing everything from fraud detection to credit scoring. Meanwhile, quantum-based blockchain systems could support nearly unbreakable, transparent ledgers for financial transactions, further boosting efficiency and trust.

At its core, quantum computing is all about raw computational strength. Banks and Fintech platforms will likely run quantum workflows in the background, out of sight for the average Fintech consumers. Consequently, personalization remains limited – most people probably will not be interested in switching "quantum features" on or off.

By 2025, quantum computing in finance is mostly in pilot form. As we move towards 2040, quantum computers with high qubit counts could start outmatching classical systems, paving the way for mainstream adoption. Tasks like risk simulations or large-scale asset management, which take nowadays hours of manual oversight, could be done in seconds. Major players might rely on quantum to catch fraudulent transactions in real time or dynamically reconfigure global trading strategies, drastically reducing human intervention. Once fault-tolerant quantum computing becomes a reality, experts project that its applications in the financial sector could generate an estimated 622 billion USD in value until 2035 (Gschwendtner et al., 2023).

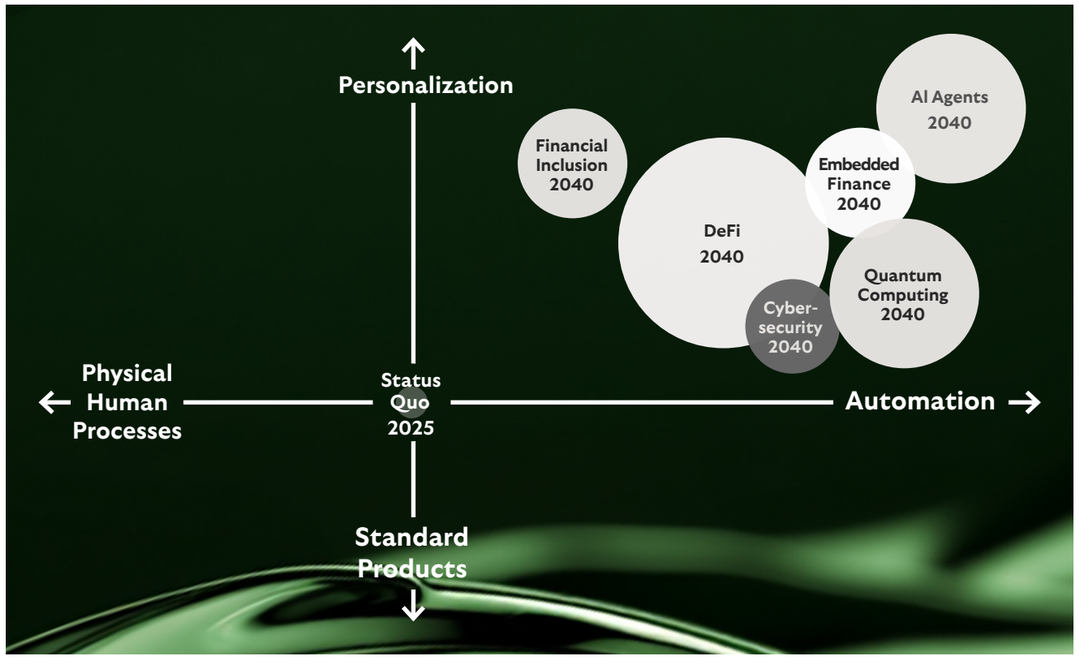
Banks and institutions worldwide are already investing heavily in quantum R&D – global spending on quantum computing in financial services is projected to surge from just 80 million USD in 2022 to 19 billion USD by 2032 (Soutar et al., 2023) – reflecting a 72.7% compound annual growth rate (CAGR). If this exponential growth persists, investment could reach 1.5 trillion USD by 2040.

In practical terms, quantum computing remains mostly unseen for the customer. It may indirectly enable more personalized robo-advisors or faster loan approvals. Instead, consumers simply notice safer, faster, and more advanced products. The associated trajectory can be described from a consumer perspective as high in automation but low in personalization (→ **FIGURE 9**).

By 2040, all analyzed six categories cluster toward the upper-right quadrant, reflecting a reshaped Fintech landscape that is both highly automated and tailored to individual users (→ **FIGURE 10**). AI agents and Embedded Finance are projected near the top-right, as they combine autonomous operation with user-specific customization. DeFi and Financial Inclusion also trend high on personalization while delivering more automated processes along the O2C vaule chain than ever before – though a step behind the former group. Cybersecurity and Quantum Computing both sit high on automation but moderate on personalization.

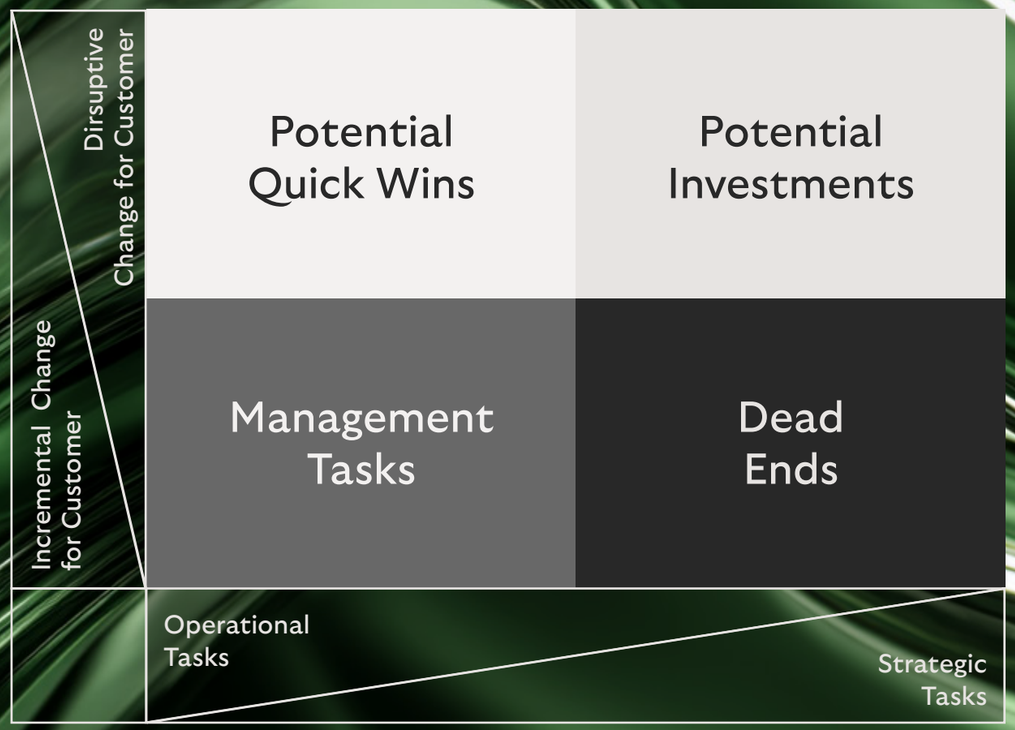
The mapping in → **FIGURE 10** underscores a common theme: automation enables personalization at scale. As routine tasks and complex computations are handed over to AI, smart contracts, and algorithms, financial services can be more customer-centric, meeting individual needs in real time. For consumers, the year 2040 promises daily financial interactions that are more convenient, inclusive, and aligned with personal preferences than ever, as evidenced by the trajectory of these technologies.

FIGURE 10: Trajectory Fintech Drivers from 2025 to 2040



Financial firms expect quantum-computing applications to unlock $622 billion in new value by 2035—more than the total annual cybersecurity spend worldwide.

FIGURE 11
Adaptation Model for Technological Changes



Adaptation

The Adaptation Model for Technological Changes in the Future Fintech Industry.

By distinguishing between quick operational wins, incremental management tasks, high-stakes investments and dead-end streets, scarce resources can be channeled strategically

From the perspective of the Fintech Industry, it is crucial to understand how to respond effectively to the described technological changes in the market. To analyze the impact of these advancements in more detail, the following section introduces an "Adaptation Model for Technological Changes in Fintech". This model helps categorize expected Fintech innovations in 2040, focusing on how they will affect consumers and their financial experiences.

In this Adaptation Model the expected technological innovations on the Fintech market in 2040 are categorized from the consumer's perspective.

— The x-axis explains the time span until the "Plateau of Productivity" of each technology is reached (Gartner, 2025)
— The y-axis describes the degree of change perceived by consumers in the Fintech sector

The vertical axis moves from Incremental Change for the Customer (bottom) to Disruptive Change for the Customer (top), while the horizontal axis spans Operational Tasks (left) to Strategic Tasks (right). Each quadrant thus indicates a combination of how large the impact on the customer is, and whether the tasks involved are mainly day-to-day-business or more long-term/visionary (→ **FIGURE 11**).

Potential Quick Wins (Top-Left Quadrant)
— Disruptive for customers (offering noticeable, high-impact improvements)
— Operational in nature (can be implemented relatively quickly)
— These initiatives often provide immediate benefits without requiring extensive strategic planning.

Potential Investments (Top-Right Quadrant)
— Disruptive for customers (transformational changes or innovations)
— Strategic in nature (requires long-term planning, significant resource allocation)
— These efforts can shape the future direction of the company, though they demand more time and investment before delivering results.

Management Tasks (Bottom-Left Quadrant)
— Incremental for customers (smaller improvements or optimizations)
— Operational in nature (focused on day-to-day processes and maintaining current offerings)
— These tasks keep core activities running smoothly and form the backbone of consistent service delivery.

Dead Ends (Bottom-Right Quadrant)
— Incremental for customers (minimal or negligible direct impact)
— Strategic in nature (longer-term or high-level projects)
— Because they involve strategic resources but do not substantially enhance customer value, they risk consuming effort without yielding significant benefits, potentially creating "dead ends" for the organization.

In the upcoming section three different Fintech technologies will be evaluated with the help of the Adaptation Model for Technological Changes in the Future Fintech Industry

1. Biometric Scans
2. Haggling Bots
3. Quantum Key Distribution

The selection of these technologies is based on the disruptive Technology Assessment in Chapter 5. Further Studies can be brought forward in the next years to analyze and evaluate further technologies with the help of the model.

1. Biometric Scans

Biometric scans refer to the use of unique biological characteristics – such as fingerprints, facial features, iris patterns, or voice – to verify identity within financial transactions. This technology has matured significantly due to advancements in smartphone integration (f.e., Apple's Face ID in 2017) and regulatory pushes for secure authentication. Surveys indicate that the majority of global consumers prefer biometric authentication methods like fingerprint and facial recognition over traditional PINs or passwords (Zabidi et al., 2018).

Biometric scans are being deployed at multiple stages of the Order-to-Cash (O2C) payments process to enhance security and efficiency. A primary use case is identity verification during customer onboarding or order placement. Banks and Fintech platforms now commonly ask users to verify identity with biometrics – for example, leading digital banks like Monzo and Revolut have integrated facial recognition to authenticate new customers as part of KYC (Know Your Customer) checks. Additionally, biometric technology is increasingly used in physical retail environments through systems like Mastercard's "Smile to Pay", reporting a 70% customer acceptance and a significant reduction in checkout time for users (Matuli-onyte, 2022).

Impact on Consumers

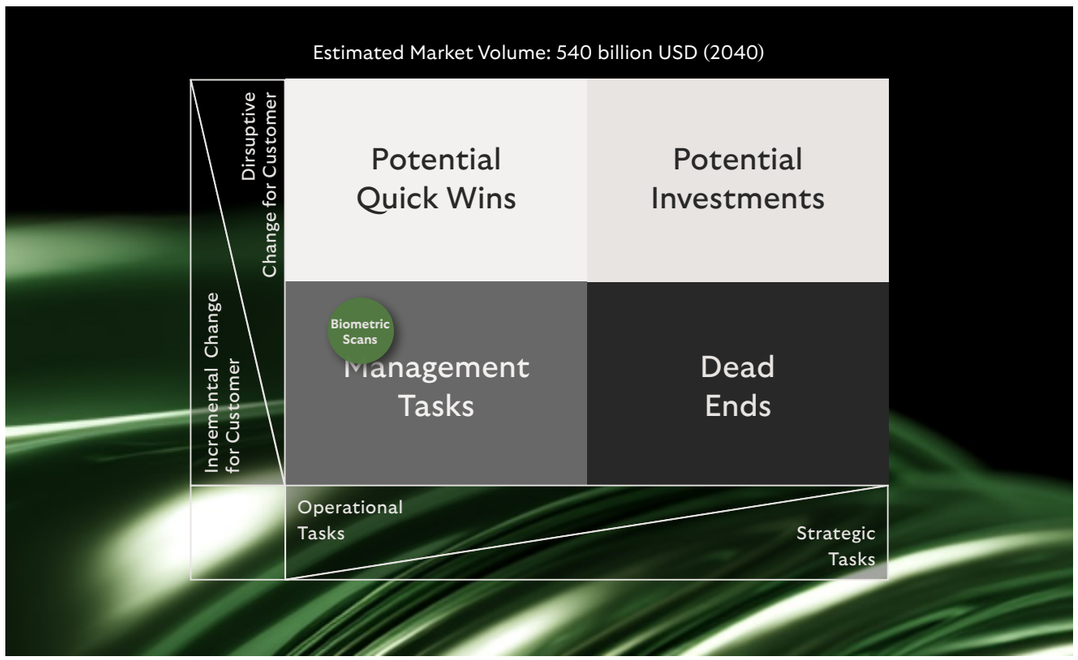
The introduction of biometric scans in payments offers a medium to low level of disruption for consumers. On the one hand, these systems can be seamlessly integrated in the financial services used by the customers. Therefore, their awareness of the new technology is not very high. On the other hand, biometric scans offer enhanced convenience compared to conventional methods like 2FA verification, passwords, or PINs. In fact, about 40% of banks now use physical biometrics to fight fraud, up from just 26% five years ago, making its adoption in Fintech feel incremental for the customers rather than disruptive (ACFE, 2024).

Implementation Effort

Modern smartphones and laptops come equipped with fingerprint readers, cameras, and secure biometric libraries. Fintech developers can simply leverage native APIs provided by operating systems – for example, Apple's Face ID/Touch ID frameworks or Android's BiometricPrompt API – to enable secure fingerprint or face authentication in their apps

For Fintech companies this means that adding biometric login or payment approval is often a matter of software development rather than deploying new hardware. In cases where hardware is needed (f.e. fingerprint scanners for point-of-sale or ATMs), costs have been dropping steadily as the technology matures.

FIGURE 12: Adaptation Model for Autonomous Reconciliation Process



Moreover, a growing ecosystem of Biometrics-as-a-Service providers offers API-based solutions. These cloud-based services handle the heavy lifting of biometric matching and storage, so a Fintech company only needs to capture the biometric input (e.g. via the user's phone camera or a fingerprint scanner) and the cloud service does the rest.

Conclusion

Biometric Scan technology can be assigned to the "Management Tasks" quadrant of the Adoption Model. The implementation of this technology into the services and applications of a Fintech company is typically characterized by medium to low customer awareness and low implementation effort. With mature technology, declining costs and pre-built solutions, Fintech firms can deploy biometrics as routine upgrades rather than transformative initiatives.

Users can still order and pay as usual, only now with a quicker fingerprint or face scan in place of typing passwords or presenting IDs. This added security layer works largely in the background and does not require to learn complex new behaviours. So, customers experience it as a minor change to their routine.

Even though marked as an "Management Task" in the model, the biometrics market is projected to grow at a CAGR of 19.9% from 2025 to 2034, reaching 307 billion USD, driven by demand for fraud prevention and seamless user experiences. Making this market an highly important growth field of the future of Fintech (Zoting, 2025). If we extent the CAGR only half as beyond 2034 (to reflect maturity) market size for biometric scans could reach 540 billion USD by 2040.

2. Haggling Bots

Haggling Bots are specialized AI agents that perform the task of deal-making in favor of their users. The assumption is that automated negotiations can optimize deals for customers in the future – without the need for human intervention into the process. From the perspective of the customer, Haggling Bots will be able to negotiate and find the best deal through processing a huge number of contracts to find the best price (Searles, 2024). From the perspective of a retailing company a Haggling Bot can include accessible information about the consumer to increase the accuracy of the offered products.

AI-Driven Negotiation Models: Haggling bots typically rely on advanced AI models that enable strategic decision-making in bargaining scenarios. A key approach is reinforcement learning (RL), where an agent learns optimal negotiation tactics through trial-and-error interactions in a simulated environment. The Haggling Bot observes states (e.g. offers, counter-offers, time remaining) and takes actions (propose, concede, walk away) to maximize cumulative reward (such as the value of the deal). Over many iterations, the Haggling Bot autonomously refines its policy for making offers or concessions, effectively learning to negotiate without hard-coded rules (Zhang et al., 2025). This data-driven learning gives negotiation bots adaptability in complex, dynamic settings that would be hard to handle with static strategies.

Application Scenarios

Haggling bots are poised to revolutionize e-commerce by enabling dynamic pricing and personalized negotiations. In a future where online shopping is increasingly dominated by AI-driven platforms, these bots could act as intermediaries between buyers and sellers, optimizing prices in real time based on supply, demand, and user preferences. For example, a haggling bot could analyze a customer's purchase history, browsing behavior, and current market trends to negotiate discounts, bundle deals, or loyalty rewards. This would create a win-win scenario for both consumers and retailers, as buyers receive personalized offers while sellers maximize revenue and customer satisfaction. For example, the startup "DoNotPay" built a chatbot that can renegotiate bills with service providers. In a public demo, their AI conversed with a Comcast internet support service and secured a 120 USD reduction per year in the customer's bill, all without the user's direct involvement (Humphries, 2022).

The relevance of haggling bots in e-commerce could become even more pronounced as Fintech services such as buy-now-pay-later (BNPL) and digital wallets become deeply integrated into online shopping platforms. By automating negotiations and ensuring fair pricing, haggling bots could streamline transactions and enhance the overall user experience. This would not only drive customer loyalty but also foster a more competitive and efficient marketplace.

In the P2P lending space, haggling bots could facilitate negotiations between borrowers and lenders, ensuring optimal interest rates and loan terms. By analyzing creditworthiness, market conditions, and risk profiles, these bots could create mutually beneficial agreements that traditional financial intermediaries might overlook. For instance, a haggling bot could negotiate lower interest rates for borrowers with strong credit histories while offering competitive returns to lenders.

As P2P lending continues to grow in popularity, haggling bots could democratize access to financing by automating negotiations and reducing reliance on traditional banks. This would align with the broader trend of financial inclusion, enabling individuals and small businesses to secure funding on fair and transparent terms. Moreover, by leveraging AI to assess risk and optimize terms, haggling bots could enhance the efficiency and scalability of P2P lending platforms.

Impact on Customers

Haggling bots can deliver high impact for customers by saving them money, time, and stress. Many consumers are reluctant or unaware of how to negotiate with financial service providers. By automating this task, haggling bots unlock savings that customers might otherwise miss (Myers, 2023). This positive reception from consumers' perspective indicates a high demand for Haggling Bot solutions in the upcoming years.

Implementation Effort

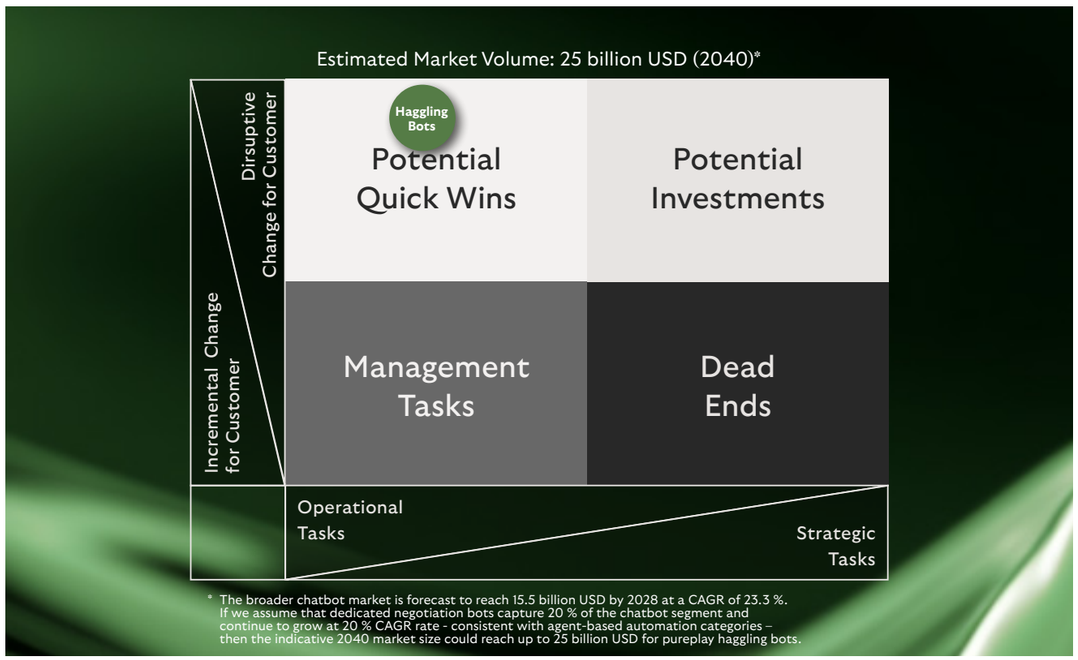
For Fintech companies the effort to adopt Haggling Bots is relatively low compared to other Fintech technologies. Many haggling bot solutions are available as SaaS (Software as a Service) platforms, such as Pactum AI (Wang, 2023). These platforms offer API integration with existing systems, reducing development time and costs.

Additionally, financial interactions with consumers already happen via digital chat, apps or web browser. Haggling bots can be deployed across these channels without significant additional effort. This scalability makes them an ideal investment for Fintech companies looking to expand their customer base.

Conclusion

In summary, haggling bots represent a high-impact, low-effort opportunity in Fintech. They leverage readily available AI tech to solve a real customer pain point – negotiating better financial deals – resulting in measurable savings and improved satisfaction. Implementation is relatively quick and cost-effective, especially compared to heavy infrastructure projects, making it a "Quick Win".

FIGURE 12: Adaptation Model for Haggling Bots



3. Quantum Key Distribution (QKD)

Quantum computing not only supercharges computation; it also necessitates a leap in security. A powerful quantum computer could eventually crack today's encryption standards, posing an existential threat to data security in finance.

This is where Quantum Key Distribution (QKD) becomes a relevant future technology in Fintech Industry. QKD leverages quantum physics to create unhackable encryption keys: it uses particles of light (photons) to transmit cryptographic keys such that any eavesdropping attempt will disturb the quantum state and be detected. In essence, QKD allows two parties to establish a shared secret key with the guarantee that if the key was intercepted, both sides would know and could abort the transaction. This level of security is physically impossible to achieve with classical encryption alone (Auer et al., 2024).

In the Fintech 2040 vision, QKD is expected to underpin transaction security across banking networks. Financial institutions handle enormous volumes of sensitive data and payments: for example, HSBC processes 4.5 billion payments a year. and all transactions rely on encryption for safety.

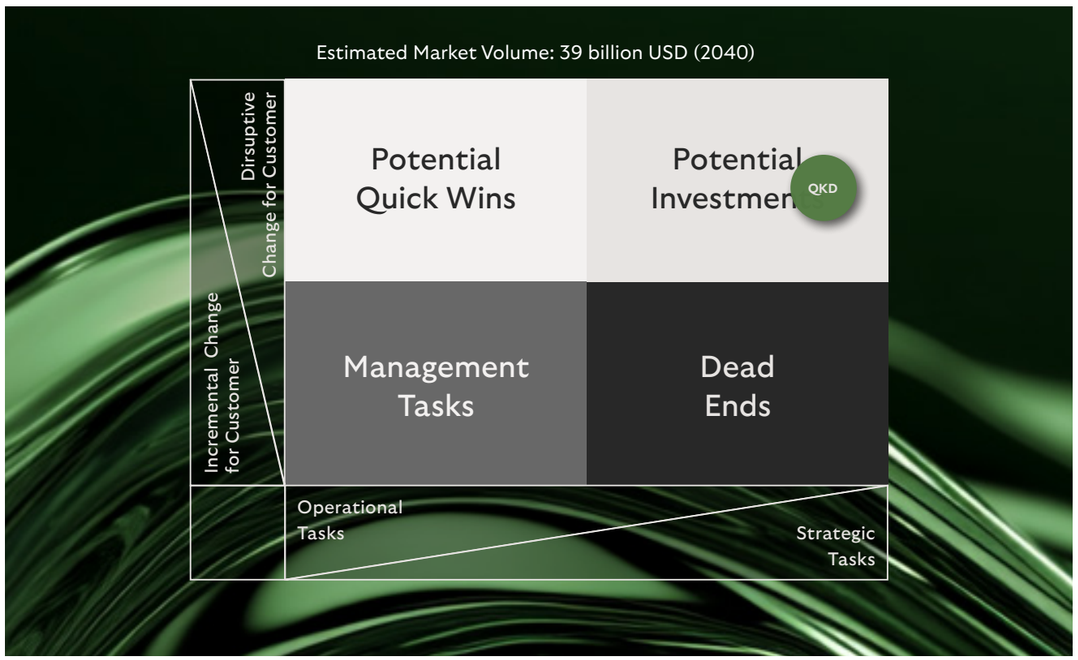
QKD can future-proof these communications against cyber threats, including attacks from quantum computers themselves. Recognizing this, major banks have begun piloting QKD networks. HSBC in the UK, for instance, connected its data centers with QKD links in a live trial to prepare for "quantum attacks," becoming the first bank on a quantum-secured network. Similarly, the Monetary Authority of Singapore and Banque de France have partnered with banks to test QKD for protecting cross-border payment data as a "major cybersecurity concern" in the quantum era.

Application Scenarios

Keys exchanged via QKD are truly random (often using quantum random number generators) and known only to the communicating parties. Any interception by a hacker – whether an external attacker or a future quantum computer – would be immediately evident, allowing the system to discard compromised keys. This means communications (e.g. transaction instructions, customer data transfers) can be encrypted with keys that an eavesdropper cannot steal without detection (Pirandola et al., 2020).

QKD provides insurance against the "store-now, decrypt-later" strategy of attackers: Currently, adversaries can capture encrypted financial data and simply hold it, hoping to decrypt it once quantum decryption becomes feasible. With

FIGURE 13: Adaptation Model for Quantum Key Distribution (QKD)



QKD and quantum-safe encryption in place, even data siphoned today remains secure because the encryption cannot be retroactively broken (Mosca and Sharma, 2023).

This longevity of security is crucial for protecting long-term financial records and communication. By 2040, quantum-secured banking networks are anticipated where interbank communication lines run on QKD links or quantum networks. Secure QKD channels could connect payment systems, ATMs, and online banking servers, rendering transactions immune to man-in-the-middle attacks (Auer et al., 2024).

By 2040, it is likely that specialized quantum communication infrastructure will be more widespread, making QKD a practical cornerstone of Fintech cybersecurity. Governments and industry players are already building quantum networks, heralding a future where global financial networks might be shielded by quantum encryption.

Impact on Customers

For customers, the advent of quantum computing and QKD in Fintech can largely be felt through greater security along the O2C value chain, speed, and trust in financial services. While much of the quantum revolution happens behind the scenes, its benefits translate into a smoother and safer user experience by 2040:

Customers in 2040 can expect that their transactions and personal data are protected by quantum-secure encryption. This strengthened digital trust means consumers can confidently use digital finance channels, boosting adoption of online and mobile banking even further. Financial institutions that invest early in quantum security are likely to retain and attract customers through a reputation of greater safety (Gschwendtner et al., 2023).

Implementation Effort

Deploying QKD in financial networks is highly demanding. The introduction of QKD involves specialized hardware like quantum random number generators, single-photon emitters, and detectors. Based on the technology, the market is segmented into fiber-based QKD and satellite-based QKD. Fiber-based QKD is primarily utilized for short-distance communications, particularly within metropolitan areas or among institutions needing highly secure data transmission. On the other hand, satellite-based QKD, despite its higher costs, is increasingly recognized as essential for long-distance communication.

Extending QKD across global networks requires careful planning. Therefore, financial institutions may need to invest millions in new equipment and encryption systems to use QKD at scale. Nevertheless, the global QKD market is projected to grow from about 2 billion USD in 2024 to nearly 8.94 billion USD in 2032 (Credence Research, 2024).

Conclusion

In summary, The QKD technology stands for the promise of making financial data and transactions future-proof. It may help preventing quantum-era cyber threats and strengthening customer trust. However, it also comes with high-effort requirements: high investment costs, technical hurdles, and the need for industry-wide collaboration. Fintech institutions may see QKD as a long-term strategic investment that can pay off in the future (Maciel, 2025).

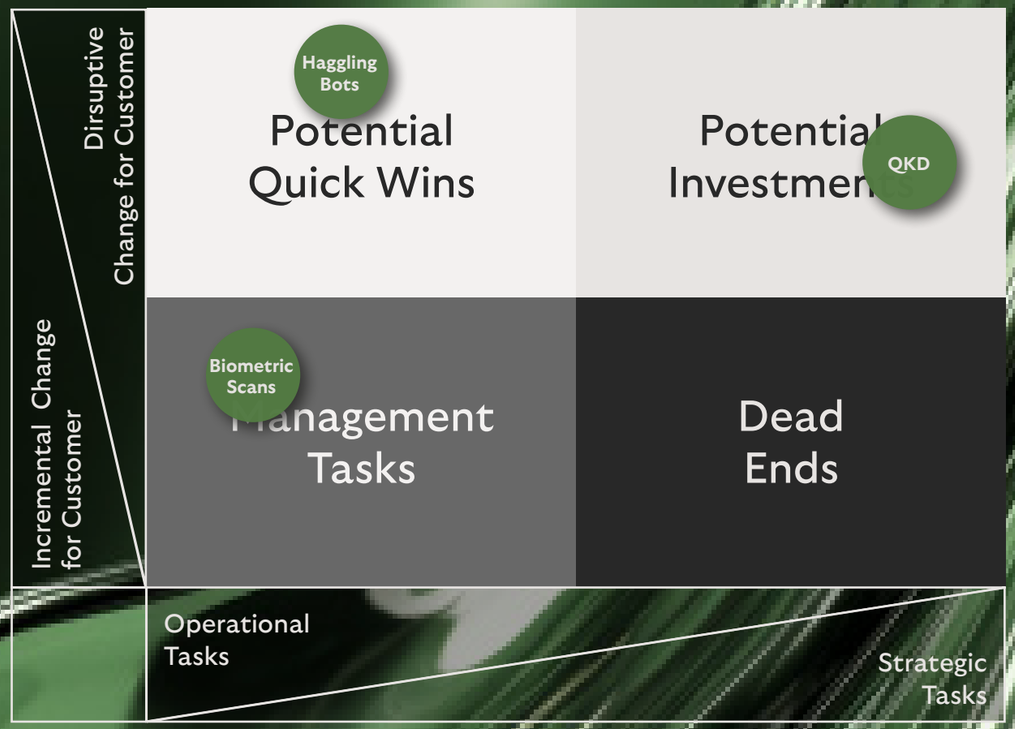
Fintech Companies must decide – under the prerequisites of limited time and limited resources – in which future technologies they want to invest in.

Some technologies – like Haggling Bots – can be qualified as “Quick Wins”. Here, two favourable elements come together: The technological “readiness” and the potential high impact on the customers. Therefore, these “Quick Win” technologies should be actively investigated by companies in the Fintech Branch.

Technologies like the Biometric Scans are important – but the changes only represent incremental changes for the consumer as the technology can be integrated seamlessly in the user journey. These technological developments can be qualified as a “Management Task”: the integration in the value chain of a Fintech company can lead to substantial profit growth. But the development of this technology requires more of tactical than strategical decisions.

Technologies like Quantum Key Distribution can be qualified as a Potential Investment. The development cost and the uncertainties are high as the development of the technology is still in an early stage. On the other hand, is the relatively high potential disruptive change from the perspective of the customer a good argument to invest in the research process.

FIGURE 14
The results of the Adaptation Model for the Fintech 2040 Industry



Fluidity

The Fintech 2040 Ecosystem.

Who wins and who fades? And what money might mean to consumers when intermediaries fade into code.

In the Fintech 2040 ecosystem, the previously distinct financial dimensions of everyday consumption, long-term investment, and saving can seamlessly converge. Driven by technological innovations, the rigid barriers once separating these financial categories may dissolve, fostering a flexible and dynamic environment for holistic financial management.

A prominent example illustrating this convergence is the innovative capability to transform future pension payments into immediate consumption or investment opportunities. Enabled by predictive algorithms, blockchain-based smart contracts, and real-time data analytics, individuals may effortlessly shift resources across these financial domains based on personal goals, market conditions, and evolving life circumstances.

In practice, this means that an individual's long-term retirement savings might instantaneously become collateral for a short-term consumption need, or alternatively, be dynamically reallocated into strategic investment opportunities tailored to current economic forecasts.

Ultimately, by 2040, new Fintech technologies have the power to reshape the financial landscape into a highly interconnected network, wherein everyday consumption, investment strategies, and savings plans coexist within a fluid, responsive, and personalized financial ecosystem. This evolution holds profound implications for economic behavior, societal financial resilience, and the democratization of sophisticated financial management tools, fundamentally redefining how individuals engage with their financial futures.

In this scenario banks play a less central role in the evolving Fintech market (Poon et al. 2024; Ciulla and Mantegna, 2020). Traditionally, banks have relied on three key business pillars – account management, lending and investment. However, the profitability of one of the pillars (account management) has already declined for many banks, particularly as digital payments gain prominence and drive the emergence of "Zero Marginal Cost Business Models". In these models, the cost of providing additional accounts or processing more transactions approaches zero. In this environment regulators are increasingly encouraging banks to pass on the resulting benefits to the customers.

Additionally, the Fintech landscape is poised for a significant shift to Peer-to-Peer (P2P) transactions, driven by both technological advancements and changing consumer preferences. Blockchain technology, decentralized finance (DeFi), and digital wallets are empowering individuals to exchange value directly, bypassing traditional financial intermediaries such as banks. As these innovations mature, customers can benefit from faster, lower-cost transfers and greater financial autonomy. Additionally, P2P services often come with enhanced transparency, as each transaction is recorded on secure, distributed ledgers.

In the same time the boundaries between traditional financial services and other sectors – such as e-commerce, healthcare, real estate, and mobility – will blur, giving rise to the appearance of new Business Model and new Participants in the Fintech Market.

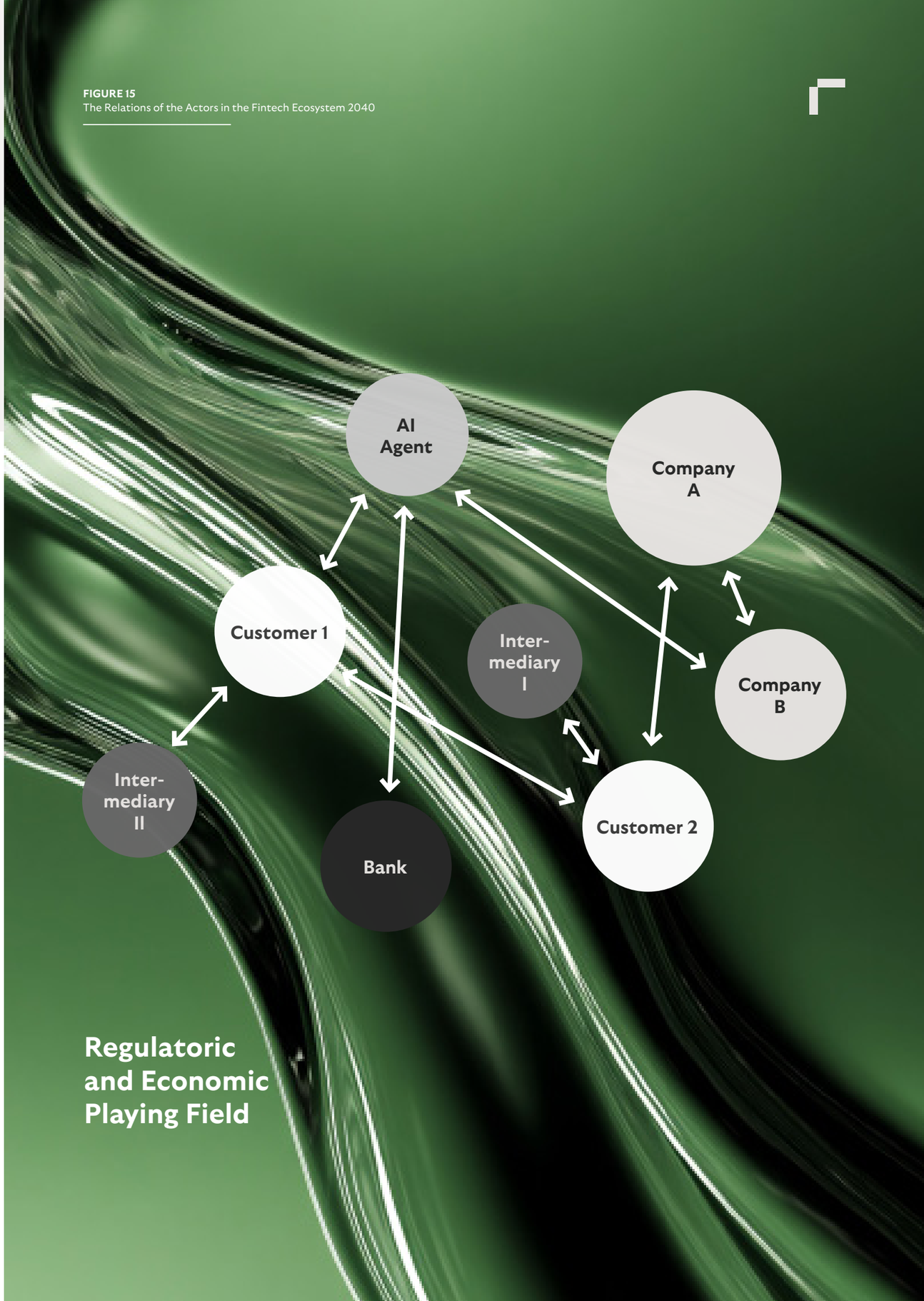
The combination of all these factors could result in interconnected networks on the Fintech Market visually represented in Figure 20. Fintech solutions are not only offering payment solutions but are also integrated seamlessly into broader consumer experiences, offering its users one-stop access to a variety of services.

An example for this development is the potential disruption of the healthcare systems. Fintech platforms could be used for secure patient billing, insurance processing, and digital health records management – all on one user friendly digital platform.

These convergences can create new revenue streams for Fintech providers by allowing them to leverage data insights across industries – informing product development, refining personalization algorithms, and enhancing risk analytics.

Ultimately, this shift toward integrated networks and cross-industry collaborations is shaped not only to revolutionize the Fintech sector but also to drive broader economic growth and societal benefits by creating end-to-end solutions that address multiple customer needs in a single digital journey.

FIGURE 15
The Relations of the Actors in the Fintech Ecosystem 2040



Navigate

Recommendations for Action.

Vision is translated into operations, pinpointing what must start today.

As the Fintech ecosystem evolves toward 2040, business leaders in the industry have the task to proactively adapting to emerging technologies and shifting consumer expectations. The insights gathered throughout this paper highlight the transformative potential of innovations such as quantum computing, autonomous reconciliation processes, decentralized smart contracts, and haggling bots. To remain competitive and capitalize on these opportunities, Fintech companies should take strategic action. This chapter outlines key recommendations for business leaders to navigate the future of Fintech successfully.

Invest in Emerging Technologies

To stay ahead in the Fintech 2040 ecosystem, companies must prioritize investments in emerging technologies that are poised to reshape the industry. This includes quantum computing, artificial intelligence, blockchain. Quantum computing, for instance, offers the perspective of highly increased computational power for risk modeling, portfolio optimization, and cryptography. Business leaders could begin exploring quantum applications by partnering with technology providers and research institutions to stay at the forefront of this transformative field.

Similarly, artificial intelligence and machine learning are critical for driving personalized financial services, fraud detection, and credit assessment. Blockchain technology, with its ability to enhance transparency, security, and efficiency, could be integrated into financial transactions, particularly in areas such as decentralized finance (DeFi), smart contracts, and cross-border payments.

Concentration on Quick Wins and Potential Investments

Fintech firms can strategically focus their digital transformation efforts by distinguishing between two core initiatives: "Quick Wins" and "Potential Investments."

"Quick Wins" represent initiatives that can rapidly and dramatically enhance customer experience through disruptive technological advancements that are achievable in the short term. These projects typically demand fewer resources and a shorter development timeline, yet their impact on user satisfaction can be immediate and significant.

Conversely, "Potential Investments" refer to strategic projects that promise substantial long-term benefits but require considerable investment in terms of time, finances, and resources. These endeavors, such as integrating Quantum Key Distribution or developing blockchain-based transaction systems, can dramatically reshape customer experiences in the future. While their payoff is substantial, patience and sustained investment are necessary.

An optimal Fintech digital strategy carefully balances both dimensions. By pursuing Quick Wins, companies can swiftly generate momentum, capturing customer interest and building credibility. Simultaneously, investing strategically in longer-term "Potential Investments" positions Fintech firms to remain innovative, competitive, and relevant in the face of future industry disruptions.

Prioritize Customer-Centric Solutions

Hyper-personalization and seamless user experiences stand in the center of the development of the Fintech ecosystem. Only those business leaders that place the customer at the center of their strategies have the chance to meet the evolving expectations. Leveraging real-time behavioral data, for example, can enable companies to offer personalized financial products and services tailored to individual needs. By analyzing spending patterns, savings behavior, and other dynamic data points, Fintech platforms can deliver highly relevant and timely recommendations. Designing intuitive and frictionless user interfaces for digital platforms is equally important. Customers expect to access financial services anytime, anywhere, and on any device. Furthermore, Fintech companies should focus on financial inclusion by developing solutions that address the needs of underserved populations. Using alternative data sources to assess creditworthiness can expand access to financial services for individuals with limited credit history or access to traditional banking.

Strengthen Cybersecurity and Data Privacy

As Fintech becomes increasingly digital and interconnected, cybersecurity and data privacy will be critical to maintaining customer trust and regulatory compliance. The advent of quantum computing, for instance, poses a significant threat to traditional encryption methods, as quantum algorithms may threatens traditional cryptographic protocols. To prepare for the post-quantum era, companies can adopt quantum-resistant cryptographic techniques such as Quantum Key Distribution (QKD) to ensure that sensitive financial data remains secure. AI-powered systems can also play a crucial role in detecting and responding to cyber threats in real time. By continuously monitoring for vulnerabilities and updating security protocols, companies can stay ahead of potential risks.

The Fintech ecosystem of 2040 will be shaped by disruptive technological advancements and evolving customer expectations. To thrive in this environment, business leaders must take proactive and strategic action. By investing in emerging technologies, fostering innovation, prioritizing customer-centric solutions, and strengthening cybersecurity, Fintech companies can position themselves as leaders in the digital finance revolution. Additionally, embracing agility, building resilient infrastructure, driving sustainability, and staying attuned to market trends can ensure long-term success.

Global financing for quantum computing in financial services may surge from $80 million in 2022 to about $1.5 trillion by 2040, enabling risk simulations that once took hours to run in seconds.

Empower

Conclusion and Outlook.

Six key hypotheses that outline the future developments most likely to shift the trajectories

The Fintech landscape of 2040 will strongly differ from today's financial services ecosystem. The interplay of AI, blockchain, open banking, and P2P innovations does not only reshape traditional business practices but also redefine the relationships between consumers, institutions, and regulatory frameworks. Several Key Hypothesis of the Paper define and where the Fintech industry stands today and how it may evolve by 2040.

Convergence of Financial Dimensions

The financial landscape of 2040 will probably be marked by the convergence of three historically distinct financial dimensions: everyday consumption, long-term investment, and saving. Driven by relentless innovation in financial technology, these categories will no longer remain isolated, but instead form a seamlessly integrated ecosystem.

Diminishing Role of Traditional Banks

By 2040, traditional banks might see a notable decline in their intermediary functions as peer-to-peer platforms, decentralized finance (DeFi), and digital-first challengers from other branches provide more direct and cost-effective alternatives to consumers.

Rise of Autonomous, AI-Driven Services

The widespread adoption of AI and machine learning enables personalized, around-the-clock financial services—such as automated lending decisions, investment strategies, and real-time risk assessments—reshaping how consumers interact with financial institutions.

Decentralized Finance and P2P Finance as the New Standard

Smart contracts and other programmable financial instruments can automate complex transactions, reducing operational friction. At the same time, peer-to-peer solutions will cater to consumer demand for direct, transparent exchanges of value without relying on centralized intermediaries.

Convergence of Ecosystems and Cross-Industry Collaboration

By 2040, Fintech is shaped to increasingly intersect with sectors like e-commerce, healthcare, real estate, and mobility, resulting in holistic, platform-based ecosystems. In such scenarios financial services will be seamlessly embedded into everyday consumer journeys, unlocking new revenue streams for Fintech providers while offering more integrated, frictionless experiences for customers.

Consumer Empowerment

Consumer protection and data sovereignty are going to become key success factors for Fintech companies. Individuals can gain greater agency over their financial data, with user-centric design and transparent data practices becoming elementary elements of the Business Models of Fintech providers looking to win trust in increasingly democratized P2P financial Ecosystems.

By understanding the potential trajectories of technological development and their impact on financial services, Fintech companies can develop strategies to adapt, innovate, and thrive in an increasingly dynamic and interconnected landscape. The outlook presented here aims to inspire proactive engagement with the future of Fintech, ensuring that the industry remains resilient, inclusive, and responsive to the rapidly changing needs of consumers.

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About the Author:

Roland Frank is Professor of Digital Leadership at the Mediadesign University (MD.H) in Berlin.

His research focuses on digital transformation, disruption of consumer markets and trends and future research. He currently holds workshops and seminars on the question of how AI can be integrated into companies' workflows and innovation processes to create new digital products.

Before taking up the professorship, Roland Frank was responsible for the banking regulation section of the Börsen-Zeitung in Frankfurt.

About Riverty:

Riverty, the Fintech company of **Bertelsmann**, supports thousands of merchants and over 28 million consumers by processing more than 80 million transactions monthly. Offering flexible payments, debt collection, and smart accounting solutions, Riverty empowers businesses and consumers with cutting-edge financial services. With a dedicated team of over 4,000 employees across 11 countries in Europe and North America, Riverty is a leader in delivering comprehensive financial solutions.

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