

**MICHAEL R. KING**

**FINTECH**  
**Explained**

**How Technology  
Is Transforming  
Financial Services**

## **Praise for *Fintech Explained***

*"Fintech Explained* brilliantly deciphers the complex fintech landscape, making it accessible to everyone. King's astute observations and innovative thinking make this book a beacon for anyone looking to understand and leverage the disruptive power of fintech. It's an unparalleled guide in an era of rapid change, and essential reading for anyone interested in the future of finance."

**Craig Asano, Founder and CEO, National Crowdfunding & Fintech Association of Canada**

*"An ambitious and timely project that combines insights from rigorous research and deep understanding of the practice. A really informative book for everyone interested in fintech."*

**Will Cong, Rudd Family Professor of Management and Professor of Finance, Cornell SC Johnson College of Business, Cornell University**

*"Fintech companies are transforming the financial industry by offering a diverse range of financial services and products, including payment solutions, financial advice, loans, and digital currencies, using cutting-edge technologies such as blockchain and artificial intelligence. *Fintech Explained* serves as an invaluable resource to understand this evolution, presenting a clear, pedagogical, and systematic account of this process, drawing upon the latest academic research. I highly recommend this textbook to instructors seeking to develop a course on Fintech 3.0, students eager to enhance their knowledge of the fintech industry, and professionals aiming to stay abreast of the fintech revolution."*

**Thierry Foucault, HEC Foundation Chaired Professor, HEC Paris**

*"Few people know fintech as well as Michael King. *Fintech Explained* provides a comprehensive overview, complete with many colorful examples, of the fintech trends that are driving disruptive change today."*

**Andrew Graham, Co-Founder and CEO, Borrowell**

“The most impressive feature of Michael King’s *Fintech Explained* is its breadth of scope. While so many others focus – often exclusively – on digital assets, blockchain technology, dominant players in the cryptocurrency realm, and DeFi, this book goes well beyond. Fintech, we learn, is just as much about robo-advising, online lending and crowdfunding platforms, insurtech, and bigtech financial services. Michael’s analytical strengths shine through as he deconstructs the business models and economic foundations underlying the value propositions in fintech world. And all of it is done in an accessible, everyday language that ensures it is worthy for all eager to build up their fintech bona fides.”

**Andrew Karolyi, Charles Field Knight Dean and Professor of Finance, Cornell SC Johnson College of Business, Cornell University**

“*Fintech Explained* provides an incisive peek into the technological forces and dynamic innovators currently reshaping every corner of the financial system. From brokerage to bitcoin, the text provides a comprehensive and easy-to-understand view of the problems fintech innovators (whether incumbent or entrepreneur) are seeking to fix and the hurdles they must overcome to achieve those goals.”

**R. Jesse McWaters, Senior Vice President, Global Head of Regulatory Advocacy, Mastercard**

“Michael King is a leading academic expert in the exciting field of technology in the world of finance. In his book *Fintech Explained*, the reader will learn about the current and future trends that these forces will bring to industry, profound change which will largely benefit customers. However, change is always difficult and some may get left behind unless we take steps to avoid this. King provides insights on how the entire society can benefit.”

**Richard Nesbitt, Adjunct Professor and Executive-in-Residence, Rotman School of Management, University of Toronto**

“This is exactly the book I’ve been seeking for my students! *Fintech Explained* fills an important gap in financial education by unravelling the complexities of fintech. Drawing on extensive interactions with key stakeholders, including founders, VCs, angel investors, and influencers, the book offers a rigorous and meticulously crafted analysis supported by Michael King’s deep experience in the financial services industry and solid academic research. I appreciate how the author captures the multidisciplinary nature of fintech, providing a holistic view of the field. The text not only offers a clear and expert explanation of various fintech verticals,

complemented by a multitude of case studies, but also delves into fundamental aspects such as monetization strategies, funding, and valuation of fintech companies. This book has the potential to establish itself as the go-to textbook and become an indispensable resource for students, professors, and practitioners alike.”

**Maria Pacurar, Associate Professor of Finance, Dalhousie University**

“Michael R. King’s book offers a comprehensive and insightful exploration of how financial technology companies are revolutionizing the customer experience in the financial services industry. Through real-world case studies, clear descriptions, and the latest academic research, King highlights the transformative power of fintech, showcasing how it provides cheaper, faster, and more convenient financial products and services. This pedagogical guide is a must-read for anyone interested in understanding the dynamic and evolving world of fintech.”

**Raghavendra Rau, Sir Evelyn de Rothschild Professor of Finance, University of Cambridge**

“Michael King leverages his deep experience in investment and central banking, as well as his international academic background as a finance professor, to offer a masterful handbook on fintech. Using the dual lens of disruptive innovation and financial intermediation theory, King unpacks 30+ real cases of fintech businesses, ranging from crypto protocols to niche lending startups and from globally established unicorns to bigtech’s attempts at competing with traditional banks. It’s concise and crystal-clear, and yet somehow manages to be exhaustive.”

**Jean-Philippe Vergne, Associate Professor of Strategy, UCL School of Management**

“*Fintech Explained* is the ideal introductory companion for all things fintech. It provides a solid educational resource for students and educators as well as a point of entry to professionals who are keen to understand further the applications and strategic impact of technology in financial services.”

**Markos Zachariadis, Chair in Financial Technology & Information Systems, University of Manchester; Member of the World Economic Forum’s Council on the Future of Resilient Financial Systems**

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# **Fintech Explained**

How Technology Is Transforming  
Financial Services

MICHAEL R. KING

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**Canada**

*To my wife, Yanna, and our sons, Robert and Peter.*

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# Contents

*List of Figures* xi

*Preface* xiii

1 Foundations of Fintech	1
2 Fintech Economics, Strategies, and Business Models	33
3 Funding of Early-Stage Fintech Companies	58
4 Valuation of Fintech Companies	90
5 Bitcoin, Blockchain, and Cryptocurrencies	123
6 Ethereum and Decentralized Finance	160
7 Alternative Finance, Online Lending, and Crowdfunding	187
8 Robo-advisors and Digital Wealth Management	219
9 Payments and Insurtech	244
10 Digital Banking and the Response of Incumbents	274
11 Techfins and Bigtech in Financial Services	304

*Notes* 331

*Index* 355

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## Figures

- P.1 Overview of *Fintech Explained* xv
- 1.1 Global Investment in Fintech Companies 3
- 1.2 Count of Fintech in Digital and Print Media, 2000 to 2018 5
- 1.3 The Fintech Explained Lens 10
- 2.1 The Five Dimensions of Financial Intermediation 36
- 2.2 Pisano's Innovation Landscape Map 47
- 2.3 The Fintech Explained Lens 48
- 2.4 One-Sided Business Models in Finance 49
- 2.5 A Multi-sided Business Model 50
- 3.1 Growth Stages of a Fintech Start-Up 59
- 3.2 Stripe Funding Rounds and Post-Money Valuation 69
- 3.3 Fintech IPO Performance over First Year Total Returns 76
- 3.4 Value of Equity Stakes through Funding Rounds 85
- 4.1 The Four Steps in Valuation 92
- 4.2 ARKF Fintech Innovation ETF vs. S&P500 Index 114
- 5.1 Bitcoin Price and Crypto Winters 126
- 5.2 Bitcoin Price vs. Hash Rate 132
- 5.3 FTT vs. Bitcoin 152
- 6.1 Google Search Popularity – Bitcoin and Ethereum 164
- 6.2 DeFi Categories 176
- 6.3 Total Value Locked in DeFi 178
- 7.1 Rise and Fall of Global Crowdfunding 200
- 7.2 US Crowdfunding (US\$ in Billions) 202
- 7.3 LendingClub Structure for Issuing Notes (2014) 203

7.4	LendingClub vs. S&P500 Composite Index	211
8.1	Growth of Exchange Traded Funds	223
8.2	Wealth Management Value Chain	234
8.3	Robinhood vs. S&P500 Composite Index	241
9.1	Global Payments Revenues (2020)	247
9.2	The Payment Players	250
9.3	Gross Written Premiums in the Global Insurance Industry	262
9.4	Insurtech Performance First Year Post-IPO	265
9.5	The Insurance Value Chain	266
9.6	ZhongAn Share Price vs. Hang Seng Index	271
10.1	Nubank Share Performance vs. Brazil's Bovespa Index	290
11.1	Market Capitalization of Bigtech/Techfin vs. Financial Incumbents	306

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# Preface

## **WHAT IS FINTECH EXPLAINED?**

This book provides the foundations for understanding financial technologies, or fintech. Fintech is the digital delivery of financial products and services via the internet or a device such as a mobile phone. We explore how entrepreneurial start-ups, mature businesses, digital-only banks, and global technology companies are transforming the customer experience in financial services. Fintechs are leveraging technologies to solve customer pain points and provide financial products and services that are cheaper, easier to use, faster, and more convenient than traditional methods.

*Fintech Explained* evaluates this paradigm shift and provides a roadmap to understand how fintech is reshaping the competitive landscape of financial services. We evaluate the business models, monetization strategies, funding, and valuation of fintechs. We examine the disruptive strategies of new entrants and the response of incumbents across a range of lines of business. We take a deeper dive into the world of Bitcoin, Ethereum, and decentralized finance (DeFi) to see how cryptoassets are radically transforming financial intermediation.

*Fintech Explained* focuses on fintech applications developed since the mid-2000s that primarily target individuals (retail) and small business customers. This latest wave of innovation has seen the growth of multi-sided portals providing peer-to-peer (P2P) capital raising and payments, challenger banks and apps for managing personal finances, robo-advisors and digital wealth management, insurtechs, and the entry of techfins and bigtech into financial services. Below, we outline the content chapter by chapter, summarizing the key learning outcomes.

## WHO SHOULD READ THIS BOOK?

Like the successful fintechs profiled in this book, *Fintech Explained* solves a pain point for an underserved target customer by providing a compelling value proposition. This course book fills a gap for instructors (the customer) looking for a comprehensive educational resource on fintech (the pain point) that will delight undergraduates, graduate students, and interested professionals alike (the value proposition).

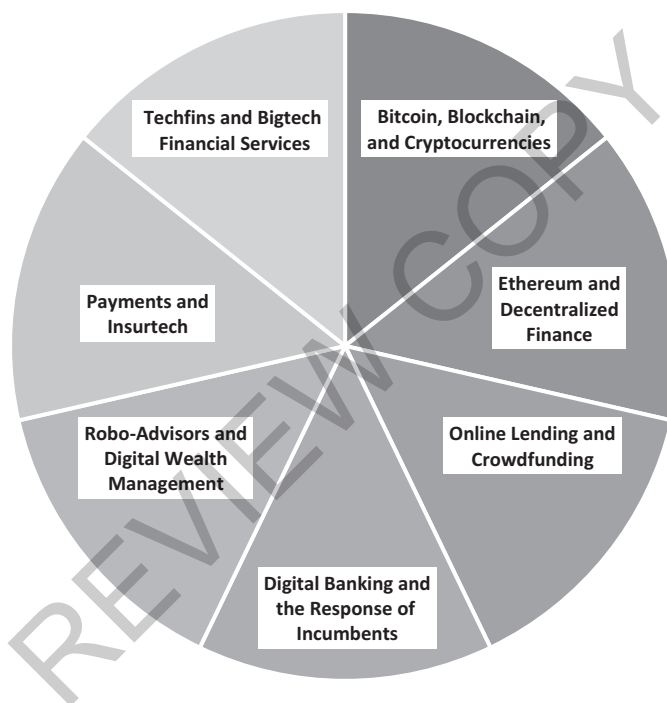
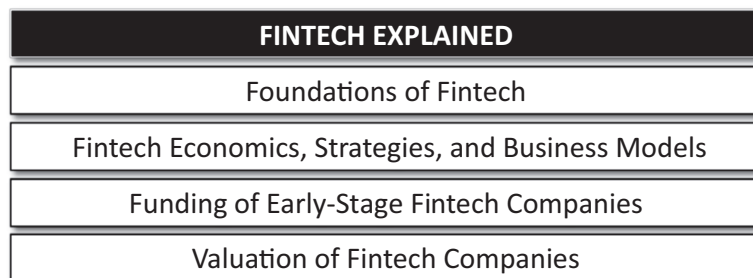
What sets this book apart? *Fintech Explained* provides a structured, pedagogical introduction to the fintech landscape. It combines clear descriptions and real-world case studies with the findings from the latest academic research. It summarizes insights from founders, early-stage investors, incumbents, and other stakeholders in this vibrant ecosystem. The chapters share a common theme but are standalone and can be read in any order. Each chapter ends with key terms, questions for discussion, and suggestions for additional reading.

This book is for anyone who wants to understand this transformational paradigm. Maybe you are interested in a career in financial services and need a roadmap to this field. Or perhaps you are a professional working in financial services wondering where your industry is headed. You might be contemplating launching an entrepreneurial start-up and want to identify the profit pools and develop your business plan. Or you may be an angel, venture capitalist, or institutional investor looking to identify the most innovative fintechs. *Fintech Explained* is your guide to this dynamic, evolving space.

The book provides a comprehensive introduction to a growing, complex topic. Learning about fintech on your own is not easy. If you go onto the internet, you will be overwhelmed by the thousands of blogs, articles, reports, videos, and other resources available. While some are excellent, others are dubious or questionable. Many are thinly veiled self-promotion or sponsored advertising. It is hard to sort the good from the bad. *Fintech Explained* is your curated guide to this field.

## ROADMAP OF FINTECH EXPLAINED

Figure P.1 provides an overview of the book. *Fintech Explained* has two sections. **Section 1: The Fintech Toolbox** provides the tools needed to evaluate and understand this disruptive industry. It describes the foundations, economic theories, business models, funding, and valuation of fintech companies. **Section 2: Fintech Products and Services** explores the main lines of business and players in fintech. We examine the world of cryptocurrencies and DeFi, capital raising using online lending and crowdfunding, robo-advisors and digital wealth management, payments and insurtech, digital

**Figure P.1. Overview of *Fintech Explained***

banking and the response of incumbents, and the entry of techfins and bigtech into financial services. These chapters profile successful fintechs to illustrate how they are leveraging technology to solve customer pain points in financial services.

## **SECTION 1: THE FINTECH TOOLBOX**

The four chapters in Section 1 provide a toolbox for understanding and evaluating a fintech business.



## Chapter 1: Foundations of Fintech

The first chapter defines fintech and describes its growth before presenting two paradigms of fintech: the traditional (evolutionary) paradigm and the transformational (revolutionary) paradigm.

The traditional paradigm is held by many professionals working in financial services today. They see fintech as an evolutionary process where new technologies create digital distribution channels, increasing the profitability of existing businesses. Examples of fintech businesses that fit under this paradigm are balance sheet lending, digital wallets, and automated investing using robo-advisors. These fintechs are product-centric and employ the same centralized, one-sided business models as incumbents.

The transformational paradigm sees fintech as a revolution disrupting financial services by disintermediating incumbents. Transformational fintechs leverage technology to solve customer pain points and deliver an experience that is cheaper, easier, faster, and more convenient. Examples are financial marketplaces built on multi-sided platforms, decentralized applications running on blockchains, and techfin/bigtech ecosystems that bundle financial and non-financial products and services. These innovations reimagine the customer experience, how it is delivered, and how financial products and services are monetized.

In this first chapter we introduce *The Fintech Explained Lens*. This framework helps you see clearly why fintechs are successful by asking four questions: Who is the customer, what is their pain point, why is the fintech's solution valuable to the customer, and how does the fintech share in the value created for the customer? These four questions make up the essence of a founder's elevator pitch to a venture capitalist. This lens highlights that fintechs are customer-centric, not product-centric. It illustrates how technology is only valuable if it solves a customer pain point and provides a compelling value proposition. Finally, successful fintechs adopt a business model that allows them to monetize (or capture) some of the value created for the customer.

This opening chapter concludes by reviewing the main fintech lines of business, describing the types of fintech companies, and highlighting the importance of the fintech ecosystem. We consider how fintechs are promoting financial inclusion. The chapter concludes with an overview of 10 key technologies underpinning fintech.

## Chapter 2: Fintech Economics, Strategies, and Business Models

The study of fintech requires a multidisciplinary lens covering financial intermediation, disruptive innovation theory, digital strategy, and business models. Financial

intermediation theory examines how intermediaries address five dimensions: information asymmetry, transaction costs, liquidity creation, risk sharing, and trust. The theory of disruptive innovation recommends that new entrants build a foothold by targeting underserved customers with a cheaper product or service, before moving into the mainstream. Digital innovations may be classified by whether they involve a new technology, a new business model, or both. Many companies fail at innovation because they do not align their business strategy with their digital strategy.

We will see that business models in financial services may be one-sided, such as a bank selling to its customers, or multi-sided, with some groups treated as a loss leader (subsidy-side) while others are the profit center (money-side). In general, one-sided financial businesses make money by acting as agents who collect fees and commissions or by acting as principals who profit from risk taking. Many fintechs belong to the traditional paradigm and have created digital versions of their bricks-and-mortar counterparts. These traditional paradigm fintechs have replaced banking with digital banking, lending with online lending, asset managers with robo-advisors, and insurance with insurtech.

Transformational fintechs have adopted multi-sided business models that generate revenues from multiple sides of their digital platforms. We see them in all lines of business: crowdfunding, online lending, banking and personal finance, wealth management, and insurance. The key to success is to generate network effects, where adding some customers attracts others to join.

While the primary fintech narrative used to be one of disruption by start-ups who were targeting underserved end-customers through business-to-consumer (B2C) business models, it is now one of partnership as more and more fintechs pivot to sell innovative products and services through business-to-business (B2B) business models.

### **Chapter 3: Funding of Early-Stage Fintech Companies**

This chapter examines the funding of fintech start-ups. We discuss the founder's elevator pitch to an investor, review the different funding rounds, look at a capitalization table, and examine the types of securities issued to raise capital. A founder's elevator pitch identifies the customer segment, their pain point, the fintech start-up's value proposition, and their monetization strategy.

Before deciding to invest, a venture capitalist will want to know the size of the market opportunity (or total addressable market) and the background of the founding team. Fintechs raise capital in funding rounds starting with early stage (pre-seed, seed), advancing to growth stage (Series A through F), and exit via an initial public offering (IPO) or acquisition. A capitalization table shows the pre-money and

post-money ownership stakes at each funding round, reflecting dilution from broadening the shareholder base. Start-up funding takes the form of equity (common, preferred, Simple Agreement for Future Equity) and debt (convertible note, venture debt) with the rights and seniority of different securities set out in a contract.

## Chapter 4: Valuation of Fintech Companies

This chapter examines the valuation of fintech companies at different stages in their lifecycle. We describe the methods used by angel investors and venture capitalists for early-stage companies and investors in mature companies. Valuation of a pre-revenue company is an art, not a science. The buyer and seller negotiate the value, relying on experience and qualitative judgments. Angel investors use scorecards and risk factors; they may delay putting a value on the start-up until it has gained traction with customers.

Venture capitalists (VCs) look for a minimum viable product and growth in monthly recurring revenues. VCs work backward based on a targeted internal rate of return, adjusted for the risk of default and equity dilution. Valuation of mature companies for IPOs or strategic acquisition is based on the market multiples of comparable companies, precedent transactions, or a discounted cash flow (DCF) model. Some financial intermediaries such as banks cannot be valued using the DCF model, so relative valuation using market multiples is used.

## SECTION 2: FINTECH PRODUCTS AND SERVICES

The second section dives into the fintech lines of business, evaluating them using the tools from the first section.

### CASE STUDIES OF LEADING GLOBAL FINTECHS

*Fintech Explained* illustrates the transformational paradigm of fintech and the tools in the fintech toolbox using more than 30 case studies of leading global fintechs and incumbents:

- The robo-advisor Wealthsimple's seed-stage pitch to angel investors
- Wise Financial's pain point and market opportunity in payments
- JPMorgan's value drivers and valuation in traditional banking
- Funding Circle's financial ratios and performance in online lending
- Adyen's market multiples vs. comparable companies

- Bitcoin's solution to the double-spend problem
- Ripple XRP's search for a use-case
- The rise and fall of the FTX cryptoexchange
- Ethereum's vision and dominance of DeFi
- The DAO Hack and the immutability of blockchains
- LUNA's unstable stablecoin TerraUSD
- MakerDAO and Curve Finance's use-cases
- R3 Corda's DLT for regulated financial services
- Lendified's use of artificial intelligence
- Kickstarter's mission to bring creative projects to life
- LendingClub's marketplace lending platform
- SoFi's evolution from P2P lender to full-service bank
- Vanguard's move into robo-advice
- Wealthfront's sophisticated, low-cost financial advice
- Robinhood's commission-free trading for retail
- Paytm's business model and monetization strategy
- Innovations by Alipay, M-PESA, WorldRemit, and Octopus in payments
- ZhongAn, China's online-only insurance company
- Sensibill and Moven's personal finance apps
- Credit Karma's \$7 billion multi-sided platform
- Nubank building Latin America's sixth largest bank
- Goldman Sachs' entry into consumer banking with Marcus
- Ant Group and Tencent's multi-sided platforms
- Amazon's path into financial services
- Apple's partnering with incumbents
- Facebook's troubles with regulators
- Google's struggle to find product-market fit

## Chapter 5: Bitcoin, Blockchain, and Cryptocurrencies

In this chapter, we dive into the world of Bitcoin, cryptocurrencies, and other digital tokens. Ownership of these cryptoassets is recorded on an electronic ledger called a blockchain and secured using cryptography. The emergence of blockchain technology is driving innovations in how companies are organized, contracts are set up, and incentives are established, known as the field of cryptoeconomics.

In 2009 Bitcoin was the first cryptocurrency to be launched, providing an innovative solution to the double-spend problem using hashing. Ownership of bitcoins is recorded in an electronic distributed ledger called the blockchain, so named because transactions are batch processed in blocks and secured using cryptography in an immutable, append-only public ledger. Other developers soon launched alternative cryptocurrencies to Bitcoin (“altcoins”) and, later, digital tokens. The common feature of these cryptoassets is they are all recorded on separate blockchains.

Many cryptoassets were pre-mined and sold to the public through initial coin offerings (ICOs), before this market was shut down by regulators in mid-2018 due to the large number of scams. As the cryptocurrency market has grown, innovations such as cryptowallets for storage and cryptoexchanges for trading have emerged to address user pain points. Academic researchers have studied the economics of Bitcoin as a means of payment, the ability to conduct arbitrage across cryptocurrency exchanges, and the returns from investing in cryptocurrencies versus traditional assets.

## **Chapter 6: Ethereum and Decentralized Finance**

This chapter takes us into the world of Ethereum, smart contracts, and decentralized applications. *Decentralized* is a magic word in the crypto world. It means no single entity has control; decision making is distributed across a network of computers.

The Ethereum network has built a foundation for an internet of value where P2P transactions take place securely without a trusted intermediary. Smart contracts are coded on the Ethereum blockchain, automating execution. Developers combine them like LEGO blocks to create decentralized applications (dapps) and decentralized autonomous organizations (DAOs). To run smart contracts and dapps, users buy “gas” using the cryptocurrency ether (ETH), one of many tokens that can be exchanged on Ethereum. Stablecoins are a cryptocurrency with a value kept stable by pegging it to another asset, with the token backed by fiat currency, commodities, cryptocurrencies, or nothing at all.

Decentralized finance, or DeFi, is a new financial system and “internet of money” built on blockchain that allows P2P trading that is faster, cheaper, more personalized, and secure. An estimated 10% of cryptocurrencies are locked into DeFi smart contracts used for decentralized exchanges, borrowing or lending, liquidity staking, yield farming, stablecoins, service tokens, and derivatives.

## **Chapter 7: Alternative Finance, Online Lending, and Crowdfunding**

This chapter looks at how individuals, small businesses, and social causes can raise capital through centralized portals that connect them to the crowd. Crowdfunding

platforms allow individuals, businesses, and social causes to raise capital directly from individuals and institutional investors. As of 2021, activity is concentrated in the US and Europe. Crowdfunding portals are categorized as investment and non-investment. Investment portals issue debt (loans) and equity. Non-investment portals are donation-based and rewards-based. P2P/marketplace lending and balance sheet lending represent 90% of all money raised. Equity crowdfunding represents only 3%, with donation-based and rewards-based crowdfunding at 7%.

Online portals charge a variety of fees but feature high operating expenses. Losses have forced some of the biggest pioneers to pivot their business away from retail, move into financial services, or allow themselves to be acquired. The main benefit of digital capital raising for borrowers is ease of application, speed, and access to capital, but costs are high and success is uncertain. The main risks for investors are illiquidity, principal-agent problems, and the potential for fraud. In theory alternative finance may be able to increase financial inclusion, but for now most capital is raised by borrowers and issuers who have access to traditional sources but prefer to use fintechs.

## **Chapter 8: Robo-advisors and Digital Wealth Management**

This chapter examines the rise and stumble of robo-advisors, the online investment portals that automate retail investment in a portfolio of exchange traded funds (ETFs). It also looks more broadly at how technology is transforming the wealth management industry, increasing transparency, and reducing fees, while also making financial advisors more efficient.

Robo-advisors are the most visible fintechs driving innovation and disruption in investing and financial planning. These new entrants have faced an uphill battle to acquire customers, with many start-ups pivoting to serve incumbents or being acquired. Incumbent financial institutions have been fast-followers, launching successful robo-advisor services that have captured most of the assets under management (AUM) in the robo segment.

The wealth management industry manages \$100 trillion in investments with three distinct activities: financial planning, investing, and operations. Digital wealth management uses technology to automate and improve the customer experience, while generating fees and commissions from asset acquisition, portfolio management, and automation of back-office operations. Many successful fintechs in wealth management are working behind the scenes to partner with incumbents and provide B2B products and services. The future of digital wealth management is a hybrid model of a human advisor supported by computer algorithms that automate routine tasks and improve the customer experience.

## Chapter 9: Payments and Insurtech

This chapter shows how fintechs have successfully attacked the profit pools of the payments and insurance industries, both of which are complex, regulated, and fragmented. The secret is to develop apps that solve customer pain points and automate processing.

Payments is a \$2 trillion industry that generates close to 40% of bank revenues. It is complex, with many players collaborating and competing in overlapping networks. The large profit pools and many pain points in payments have attracted many successful fintechs, with more fintech unicorns born in payments than any other area of financial services. These fintechs started with a single use-case (such as a new form of mobile money or fair currency exchange) and have expanded their product offerings over time. Successful payment fintechs have solved pain points around e-commerce, money transfers, foreign exchange, international remittances, and cashless means of payment.

Insurance is a \$6 trillion industry broken down into life insurance, property and casualty insurance, and health insurance. Insurtechs are exploiting mobile apps, cloud computing, biometrics, sensors, data science, and artificial intelligence (AI) to disrupt this industry. Insurtechs leverage technology and big data to develop customized insurance products that meet the needs of underserved and niche customers. Digital-only insurance companies are using AI and machine learning to develop and price innovative products that formerly were not possible given the underwriting history required and the high distribution costs.

## Chapter 10: Digital Banking and the Response of Incumbents

This chapter examines the strategies of three categories of fintechs in banking and personal finance: fintech app developers, challenger banks, and financial marketplaces. It then looks at the various strategies used by incumbents to respond to this disruptive threat. Fintechs are targeting customer pain points in managing their day-to-day banking and personal finances, delivering a superior customer experience that is easier, cheaper, faster, and more convenient. This disruption has been enabled by technological advancements and the loss of trust post-Global Financial Crisis, propelled by open banking legislation around the globe.

Fintech app developers are unbundling financial services and solving specific use-cases, selling directly to end-customers (B2C), or partnering with incumbents (B2B). Challenger banks began by unbundling but are now rebundling financial products and services with transparent fees, faster service, and more personalized products. Financial marketplaces use application programming interfaces (APIs) to build an online platform offering third-party financial products and services to consumers.



Financial incumbents have responded with a range of strategies based on their own capabilities and scale, including building in-house, setting up innovation labs, forming strategic partnerships, licensing software, buying equity, or acquiring and targeting fintechs as customers.

## **Chapter 11: Techfins and Bigtech in Financial Services**

This chapter reveals that the biggest threat to incumbents is coming from outside the financial service industry. Global technology platforms from China and North America are bundling financial and non-financial products and services on their platform ecosystems, creating network effects that attract billions of customers.

While fintech startups were initially seen as disrupting financial services, the consensus is that the greatest threat comes from Chinese techfins and North American bigtech companies. Alibaba and Tencent have built platform ecosystems that addressed institutional voids in China's economy by providing financial services to underserved or unbanked consumers. From a foundation in payments, Alibaba's Ant Group and Tencent WePay expanded to offer money market funds, loans, wealth management, insurance, and banking to their large user bases.

The North American bigtech companies are following the techfin playbook by moving into select financial services. Amazon's payments, cash products, and merchant loans support its e-commerce business. It has built internally, learning through trial and error, rather than relying on external partnerships. Apple has partnered with incumbents to protect its share of the smartphone market by providing increased functionality on the iPhone and Apple ecosystem. Facebook and Google have struggled to move beyond payments; Facebook's cryptocurrency project was canceled, while Google's launch of bank accounts was scrapped.

## **WHAT IS NOT COVERED IN THIS BOOK?**

This book does not examine Fintech 2.0, the wave of IT investment from the late 1960s to mid-2000s. These investments focused on wholesale markets, improving the speed, communications, and efficiency of trading in financial markets. Fintech 2.0 targeted the experience of financial intermediaries, corporations, and institutional investors. It saw the computerization of financial services, the creation of electronic communication networks (ECNs) and alternative trading systems (ATS), the founding of Nasdaq, the growth of electronic brokers and Bloomberg terminals, and the creation of ETFs.



Fintech 2.0 gave us algorithmic trading, which began in the 1990s and grew exponentially in early 2000s. With algorithmic trading, a computer algorithm determines an order-submission strategy and executes trades without human intervention. Some algorithms simply automate existing strategies – for example, they break up large trades to minimize transaction costs – while others take advantage of superior execution speeds, known as high frequency trading. Algorithmic trading, earlier known as program trading, is behind many successful quantitative investment strategies.

Similarly, this book does not focus on the many B2B innovations developed for banks, other financial intermediaries, and institutional investors. Examples are applications for commercial lending, equity and debt underwriting, institutional sales and trading, and the asset management industry. To find excellent research and policy papers on these topics, visit the Centre for Economic Policy Research’s site on “Finance & Fintech” at <https://cepr.org/themes/finance-and-fintech>.

## A WORD ON JARGON

Jargon is a common problem in finance. Financial insiders and specialists use language that is unfamiliar or complex to demonstrate their expertise and exclude outsiders. Fintech is no exception. Fintech insiders use unfamiliar expressions (digitization, decentralization, disintermediation), acronyms and abbreviations (P2P, SHA-256, DAO), and computer-speak (algorithms, protocols, hashing).

An insider might describe the blockchain as *a cryptographically secured distributed ledger that is immutable, append-only, and the common source of truth*. But they could just as easily say a blockchain is *a secure electronic database recording ownership of an asset that is shared among different people*.

*Fintech Explained* demystifies fintech, translating jargon into everyday language. Like fintech itself, the goal is to provide a delightful experience for the reader built on easy-to-understand descriptions, accessible summaries of academic findings, and real-world case studies. Some fintech terminology and concepts are going to be new or unfamiliar. *Fintech Explained* addresses this pain point by defining and explaining new concepts and highlighting key terms at the end of each chapter.

## A NOTE ON ACADEMIC RESEARCH

Academic research on fintech has grown rapidly over the past decade, mirroring the growth of the industry. A naïve search of the three words *fintech bitcoin crypto\** using

EBSCOhost's Business Source Complete generates over 114,000 hits, of which around 13,000 are classified as "peer-reviewed" publications. This wave of academic research began post-2008 but kicked into high gear a decade later, spurred by specialized conferences and special issues from the *Journal of Economics and Business* (2018), the *Review of Financial Studies* (2019), and *Financial Management* (2019). Leading researchers and newly minted PhDs alike jumped on the topic. Some of the 5,000+ working papers on fintech posted on the Social Science Research Network (SSRN) have been published or were forthcoming by year-end 2022. This book only references articles published in the finance and economics journals in the FT 50 journals list used by the *Financial Times* to rank business schools.<sup>1</sup>

## ACKNOWLEDGMENTS

This book is the culmination of six years of research and engagement with the fintech ecosystem in Canada and abroad. On this journey I have learned from many fintech founders, investors, academics, financial professionals, and other fintech stakeholders whom I met and interviewed along the way. These individuals have been very welcoming and generous with their time and insights.

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# 1

## Foundations of Fintech

### SUMMARY

- Fintech is the digital delivery of financial products and services through the internet, a mobile phone, or other electronic device.
- While holders of the traditional paradigm see fintech as a natural evolution, believers in the transformational paradigm see it as a revolution transforming financial services.
- The fintech label describes companies with vastly different capabilities, scale, and funding: from entrepreneurial start-ups to mature global players to technology companies (techfins, bigtech).
- Fintechs operate in different lines of business, leveraging technology to solve customer pain points in managing their finances.
- The current fintech wave has been made possible due to a combination of existing technologies (computers, smartphones, peer-to-peer networks, application programming interfaces) with newer ones (big data, blockchain, cloud computing, machine learning).

This chapter defines fintech, describes its growth and evolution, outlines the traditional and transformational paradigms, provides a lens for evaluating successful fintechs, and presents other building blocks that make up the foundational knowledge in this field.

## FINTECH DEFINED

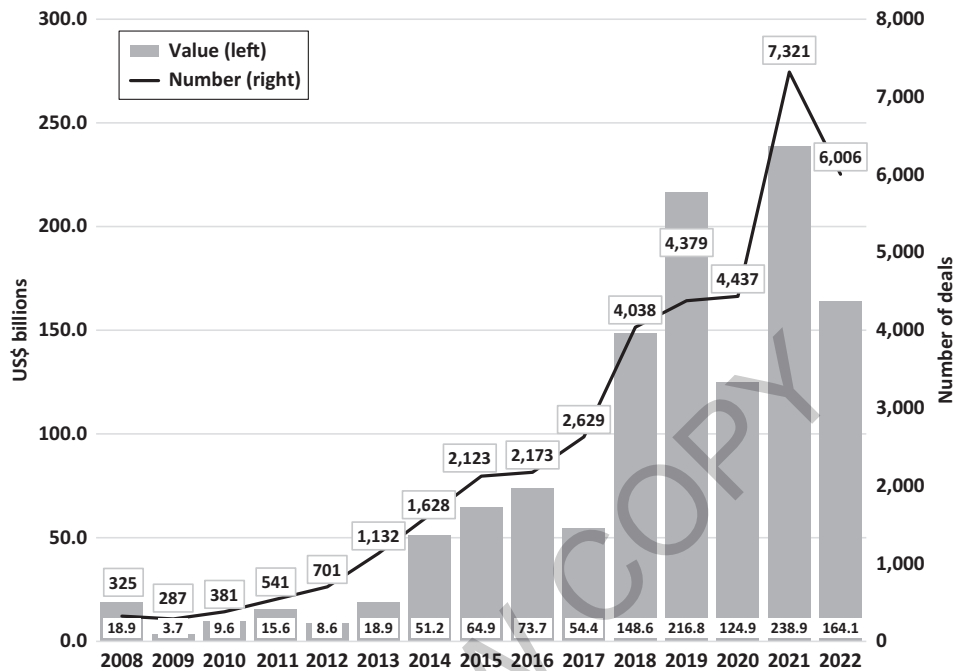
Fintech is shorthand for *financial technology*. The “fin” refers to financial products and services, such as taking out a loan, making an investment, or sending a payment. The “tech” describes the technologies used to deliver financial products and services over the internet or a device like your mobile phone. Fintech is defined as *the digital delivery of financial products and services through the internet, a mobile phone, or other electronic device*. There is no accepted spelling, so you may see it styled as FinTech, Fintech, or fintech.

Starting around 2006, a growing number of innovative digital-only companies began disrupting and transforming the financial services industry globally. These fintech companies, or simply fintechs, target customers who are underserved by the traditional financial services industry, typically individuals and small businesses. These entrepreneurial start-ups focus initially on a problem, or pain point, related to financial services. Fintechs then leverage technology to offer a solution to this problem electronically that is less expensive, easier to use, faster, and more convenient than traditional methods. That is the fintech value proposition: cheaper, easier, faster, and more convenient.

### Growth of Fintech

The growth of fintech can be measured in many ways. We can count the number of fintech companies, the number of fintech apps, or the number of Google searches for the term. The consultancy KPMG measures fintech by collecting data on global investment over time. KPMG began publishing “The Pulse of Fintech” in 2016 and has collected data back to 2008.<sup>1</sup> KPMG defines *fintech* as “businesses who are using technology to operate outside of traditional financial services business models to change how financial services are offered.”<sup>2</sup> KPMG adds up dollars invested in equity by angel investors, venture capitalists, and private equity firms, and through mergers and acquisitions (M&A) by banks and non-financial businesses. The data does not include the value of initial public offerings (IPOs), where a fintech goes public and lists on a stock exchange.

Figure 1.1 shows the dollars invested in US billions on the left axis and the number of deals on the right axis. Fintech has seen waves of activity. Investment falls around the Global Financial Crisis of 2008–2009, hitting a low in 2012 before rising to a peak in 2016, then falling again in 2017. A third wave begins in 2018 and tops \$200 billion in 2019, before dropping with the COVID-19 pandemic in 2020. It then rebounds to close to \$240 billion in 2021, with around 7,300 transactions. There is a pull-back in 2022 reflecting the rise in global interest rates, causing a broad fall in the valuation of high-growth companies and an increase in the cost of capital.

**Figure 1.1. Global Investment in Fintech Companies**

Source: KPMG, "The Pulse of Fintech," various years.

KPMG estimates that more than \$1.2 trillion has been invested in close to 38,000 transactions over this 15-year period. Schumpeter's theory of creative destruction suggests much of this equity investment will be lost as many start-ups inevitably fail. Consistent with this view, research by the consultancy CB Insights suggests much of the investment in recent years has been follow-on equity investments in the most successful fintechs.

## Revolution or Evolution?

Does fintech represent a natural evolution of the financial system or a revolution? Let's consider both perspectives.

Fintech believers describe it as a revolution transforming financial services. The goal is to overturn the existing financial order, empowering consumers by disrupting the gatekeepers who dominate the financial system – banks, lenders, brokerages, asset managers, financial advisors, insurance companies, money transfer companies, foreign exchange dealers, and other financial intermediaries (collectively called "incumbents"). These incumbents control access to capital and serve large corporations and institutional investors. The incumbents charge high fees and commissions that

are not transparent, estimated at 2% of all financial transactions,<sup>3</sup> and provide mediocre service to retail customers and small businesses.

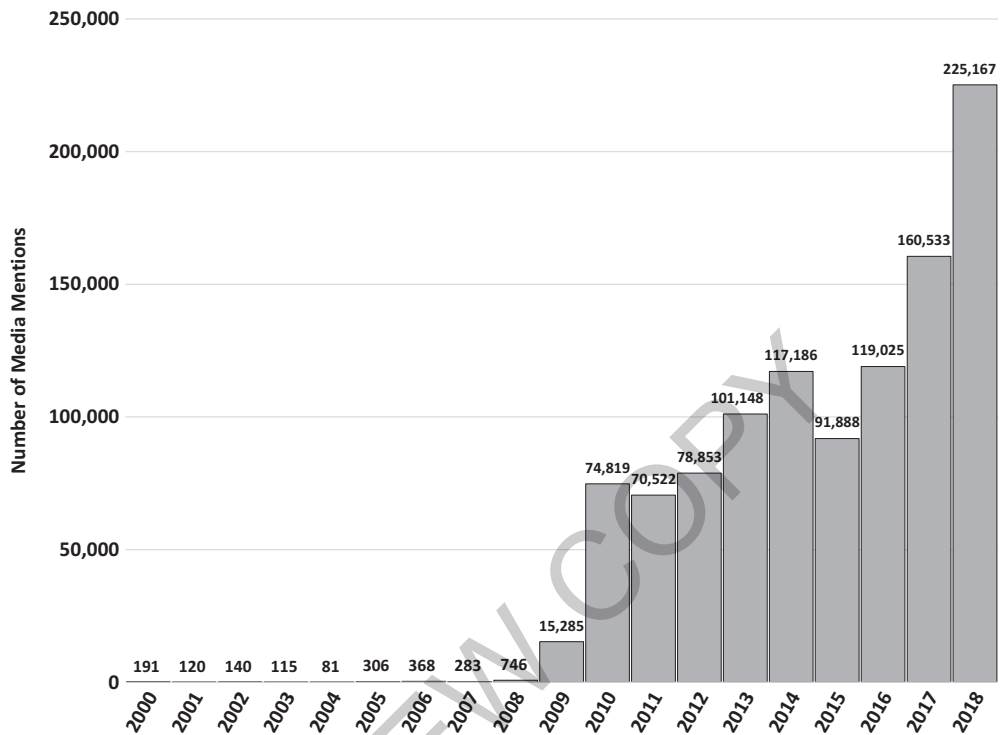
Fintechs are disrupting the incumbents using technology. They are armed with big data, blockchain, peer-to-peer (P2P) networks, cloud computing, artificial intelligence (AI), and other technologies. Using these tools, agile new entrants are bypassing traditional bricks-and-mortar branches and offices, unbundling expensive and complicated product offerings, and democratizing finance by increasing access to capital. Seen from this perspective, fintech is part of what the World Economic Forum calls the *Fourth Industrial Revolution*, a technological revolution that will fundamentally alter the way we live, work, and relate to one another.<sup>4</sup> This fusion of technologies is blurring the lines between the physical, digital, and biological spheres.

For skeptics, fintech is not a revolution; it is a natural evolution of the current financial system. The incumbents have been investing in information technology (IT) for centuries with the goal of providing all customers with better products and faster service while connecting the world's banking systems and financial markets. A 2017 study published by the CFA Institute, an industry association of finance professionals, describes the current era as "Fintech 3.0" – a third wave of digital transformation that followed two earlier bursts of innovation.<sup>5</sup>

In this view, the first era, Fintech 1.0, began in 1858 when a transatlantic cable was laid between London and New York. Starting in 1867, the electronic ticker tape made possible rapid transmission of information about the prices of stocks, bonds, and foreign exchange in the financial centers in North America and Europe. Fintech 1.0 lasted for a century, characterized by analog technology where data was transmitted using continuous electrical pulses of varying amplitude.

The second era, Fintech 2.0, started with the computer revolution in the late 1960s. These machines allowed the rapid transmission of discrete binary data over local and wide area networks. Examples were the facsimile (fax) machine invented in 1966, the automated teller machine (ATM) launched in 1967, and the fully electronic Nasdaq stock exchange that opened in 1971. The first portable cell phone was developed by Motorola in 1973, weighing over a kilogram and known affectionately as "the brick."<sup>6</sup>

By the 1980s, the global financial system was running on networks powered by mainframe computers and personal computers (PCs). The invention of the first web browser in 1989 (called the World Wide Web) made it possible for users to access pages of information located on different computers via the internet.<sup>7</sup> This paved the way for the arrival in the 1990s of e-commerce websites such as Amazon and eBay, electronic payments such as PayPal, personal financial software such as Intuit and Mint, and online banking and investing. The number of mobile phones grew exponentially, receiving a boost from the launch of second-generation (2G) mobile networks in 1991 that enabled data encryption, text messages, and multimedia messages. The launch of third generation (3G) mobile networks in 1998 made possible mobile internet access and voice over internet (VOIP).

**Figure 1.2. Count of Fintech in Digital and Print Media, 2000 to 2018**

Source: Factiva.

The first two fintech waves, Fintech 1.0 and 2.0, used technology to improve wholesale financial markets. Incumbents developed digital financial products and services that targeted their largest clients, namely publicly listed corporations and institutional investors.

Our current era, Fintech 3.0, has used technology to broaden and deepen the financial system. The third wave of innovation focuses on underserved retail and small business customers. The year 2006 saw the launch of the P2P lending platforms LendingClub and Zopa, followed by the crowdfunding platform Kickstarter in 2008 and the cryptocurrency Bitcoin in 2009. Figure 1.2 shows that mentions of the term *fintech* increased exponentially in digital and print media from 2008 onwards.

The latest wave of fintech innovation has been made possible by a perfect storm of innovative technologies. The launch of Amazon Web Services (AWS) in 2006 provided massive, scalable computing power and data storage at a relatively low cost. Fintech start-ups could get to market quickly, without having to purchase and maintain expensive servers and infrastructure. The arrival of the Apple iPhone in 2007 and Google Android devices in 2008 put a powerful computer in the pocket of consumers. Smartphones made possible the rapid transmission of financial data through mobile networks.



There has been a downside to this technological change. Technology contributed to the Global Financial Crisis of 2007–2008 where excessive risk taking by banks in mortgage-backed securities, credit default swaps, and other derivatives led to the collapse of Lehman Brothers and the near-failure and government bailouts of banks and insurance companies in the US and Europe. These speculative activities were made possible by computers and trading algorithms, with the contagion spread globally through interbank networks and financial markets.

The Global Financial Crisis had an unexpected side effect. Many experienced finance professionals lost their jobs or became motivated to reform the financial system. Disgruntled, knowledgeable insiders launched innovative fintech businesses that targeted the profit pools of their former employers. These entrepreneurial start-ups developed innovative websites and mobile apps that found a ready audience with digital-native millennials who joined the workforce over this period. Millennials put greater trust in consumer brands, such as Apple, Google, and Facebook, than in traditional banks. Millennials had heightened expectations for user experience and customer service. They were the early adopters who provided a foothold in financial services for fintech start-ups.

## TWO PARADIGMS OF FINTECH

Whether you subscribe to the revolution or evolution perspective, a main conclusion of this book is that *fintech is causing a paradigm shift in financial services*.

A paradigm is a way of looking at the world – a shared point of view or understanding about how things work.<sup>8</sup> The theory of paradigm shift was popularized by Thomas Kuhn in his 1962 book *The Structure of Scientific Revolutions*. Kuhn argued that some event causes the dominant paradigm to be updated or overturned, causing people to see the world in a new way. The catalyst may be a discovery, an invention, or a crisis.

Technology is causing such a paradigm shift in the global economy, of which financial services is one part. The arrival of the desktop computer, the internet, and web browsers has ushered in a paradigm shift known as e-commerce, creating a new way for consumers to shop. Similarly, the arrival of smartphones, digital apps, and cloud computing has caused a similar paradigm shift in how we manage our personal finances.

With every paradigm shift, some people hold on to the status quo. These people are heavily invested in the old way of doing things and cling to the existing paradigm. In the sixteenth century, the Catholic Church maintained the belief that the sun revolved around the Earth despite the scientific findings of Copernicus and Galileo.

**Table 1.1. Two Paradigms of Fintech**

The Traditional Paradigm	The Transformational Paradigm
<ul style="list-style-type: none"> <li>• Fintech is an evolution, not a revolution, of the financial system.</li> <li>• Incumbents are product-centric, with business units organized around the products they sell.</li> <li>• Incumbents use technology to improve efficiency of back-office tasks and increase the profitability of their one-sided business models.</li> <li>• The goal: to capture more rents for bank insiders and shareholders.</li> </ul>	<ul style="list-style-type: none"> <li>• Fintech is a revolution disrupting an oligopolistic, rent-extracting industry.</li> <li>• Fintechs are customer-centric, focused on providing a delightful experience to consumers.</li> <li>• Fintechs are leveraging technology to solve customer pain points in financial services.</li> <li>• The goal: to deliver a customer experience that is cheaper, easier, faster, and more convenient.</li> </ul>

The Church's paradigm reinforced their authority over society. Today's incumbents are clinging to the belief that the financial system revolves around them. It is a source of rents that benefits their employees and shareholders, not customers or broader society. In both periods, a new paradigm transformed how we view the economy, markets, and society.

Kuhn observed that the old and new paradigms may coexist for some time, which can make it difficult to see the bigger picture. This observation is true about fintech. We see two competing views of fintech that coexist, which I call the traditional paradigm and the transformational paradigm. Table 1.1 compares these two paradigms of fintech. This description is intentionally stark, provocative, and controversial. It illustrates the extreme position on each side, highlighting their main differences.

### The Traditional Paradigm

Incumbents holding the traditional paradigm see fintech as an evolution of the current financial system, not a revolution. They see the financial system as a global marketplace where banks, asset managers, and insurance companies earn high profits from selling products and services to customers. Insiders pay themselves high salaries, extracting rents from this oligopolistic industry. Incumbents benefit disproportionately by capturing most of the value added from their activities.

This product-centric view is reflected in how incumbents organize their businesses. A typical bank is organized into divisions: retail banking, commercial banking, investment banking, asset management, and so on. Each division is organized into sub-units that sell a homogeneous product: deposits, loans, mortgages, credit cards, payments, mutual funds, equities, fixed income, currencies, and so on. Employee job titles reflect this product-centric orientation: manager of corporate lending, vice-president of payments, global head of securities. The list goes on. This structure

is designed to maximize profitability through specialization, not to deliver the best possible experience to the customer.

Incumbents holding the traditional paradigm do not have a holistic view of the customer and their needs. Different parts of the same organization sell products to the same customer without even knowing it. These large, diversified businesses have deep pockets and talented employees who have a narrow focus. They pay lip service to the customer lifecycle, where individuals naturally require different financial products and services as they move through life. Each division and product team sees only their part of the puzzle, not the bigger picture.

From the perspective of the traditional paradigm, the current wave of investment in technology is designed to reduce costs and increase profitability of their traditional business models. The goal is to upgrade legacy computer systems and automate back-office processes to capture more rents. The incumbents have always invested in technology, with the latest wave (Fintech 2.0) designed to upgrade their wholesale and institutional businesses.

Now these incumbents are investing in Fintech 3.0 to increase the profitability of their retail and small business franchises. But rather than trying to solve customer pain points, the aim is to create a digital distribution channel for existing products that is more efficient. Fintech 3.0 is an expansion of the incumbent's omnichannel, adding to the existing physical (bank branches, ATMs) and electronic (telephone banking, online banking) distribution channels. The mobile channel may be new, but the underlying products (deposits, loans, payments) have not changed. Fintech investments are doing little to improve the customer experience or reduce the price charged to the consumer.

## **The Transformational Paradigm**

Believers in the transformational paradigm see fintech as a revolution disrupting an oligopolistic, rent-seeking industry. In this view, the financial system exists to serve customers, not insiders. The incumbents are powerful and have built moats around their businesses to overcharge customers. Under the transformational paradigm, incumbents are oligopolies who cannot be trusted and should be turned into utilities, their profitability regulated. In this paradigm, financial products are commodities and should be priced accordingly, eliminating monopoly rents made possible by a lack of true competition in the financial system.

Transformational fintechs are customer-centric, not product-centric. They focus on the customer experience – how customers perceive and consume financial services, both now and in the future. Managing finance is a major source of stress and anxiety for customers. Fintechs are leveraging technology to eliminate customer pain points

and provide a delightful customer experience. Using design thinking, fintechs are developing apps and online dashboards that are uncluttered and easy to read, making them simpler to use. Technologies such as the internet, mobile phones, the cloud, and P2P networks make it possible to provide faster service at a lower cost. Digital access to financial services can be convenient, available 24/7 online.

We are seeing some technology companies unbundling financial products and services, then rebundling them with non-financial activities. From a customer's point of view, many financial and non-financial activities are part of the same experience or transaction. Buying a house and financing the purchase are part of home ownership. Earning a living and investing savings for future expenses or retirement are part of a career. Going out with friends and making a digital payment are part of entertainment. Fintech is erasing the artificial boundaries between financial services and non-financial day-to-day activities.

This bundling of financial and non-financial products and services has opened the door to non-traditional players in financial services. We see the entry into payments, lending, investing, and insurance by technology companies such as Apple, Amazon, Google, Facebook, Shopify, Alibaba, and Tencent. These bigtech and techfin companies are building platforms that offer end-to-end experiences where non-financial and financial products and services are consumed together. China's Ant Group, which was spun out of the e-commerce company Alibaba, describes it this way: Financial services should be like water – you just turn on the tap and it comes out. Consumers do not need to ask which utility or what plumbing makes this possible; it just happens.

We will talk about bigtech and techfins in Chapter 11. We will also look at how the leading incumbents are responding to the threat of disruption by partnering, acquiring, or launching fintech businesses of their own. The most successful incumbents recognize that the key to success is maintaining the customer relationship and controlling the user experience. They are embracing the transformational paradigm and seeking to be part of the customer journey from end to end. They see the risk of being relegated to a drop-down list for financial products sold on a multi-sided platform run by one of these technology companies.

## **THE FINTECH EXPLAINED LENS**

Having introduced the two paradigms of fintech, we now lay out a framework for evaluating fintechs that we use in the rest of the book. I call this framework *The Fintech Explained Lens*. It is a series of questions about a fintech's strategy and business that will allow you to see more clearly what makes a fintech successful. *The Fintech Explained Lens* is shown in Figure 1.3.

**Figure 1.3. The Fintech Explained Lens**

The four questions of *The Fintech Explained Lens* are

- 1 Who is the fintech’s customer?
- 2 What customer pain point is the fintech solving?
- 3 Why is the fintech’s solution valuable to the customer?
- 4 How does the fintech share in the value created for the customer?

These four questions – who, what, why, and how – provide a successful fintech with a roadmap to product-market fit and customer adoption. A successful fintech must have clear, succinct answers to these questions to acquire customers, to raise capital, and to scale their business. These questions form the basis of a standard elevator pitch to a venture capitalist (VC), a customer sales pitch, or a presentation to a bank partner. Let’s take a closer look at each question.

### **Customer (Who?)**

The first question in *The Fintech Explained Lens* is “Who is the customer?” Every business exists to serve customers who pay for the company’s product or service. The customers may be individuals or small businesses, few or many, near or far away. A founder may call them early adopters. A marketer may call them the target market or customer segment. A VC may call them the serviceable available market. (We will have more to say about VCs later.)

The first step to building a successful fintech is to identify the targeted customers and their unmet need. Then the fintech creates a product that fits this customer, leading them to pay for it and hopefully tell others about it. Founders and VCs call this product-market fit. Without product-market fit, any venture will fail.

Too often, aspiring fintech entrepreneurs create a product where there is no customer demand. These fintechs develop a solution for a problem that does not exist. They focus on a cool technology and build something without asking the customer whether they need it. As a result, the fintech fails to get traction and is forced to pivot their business to survive. In the early years of fintech, for example, many developers coded digital wallets to replace physical wallets. What a cool idea! But retail customers didn’t want or need a digital wallet. They liked their physical

wallets. So most digital wallet start-ups failed. Eventually bigtech companies like Apple and Google developed mobile wallets that combined payments (a financial product) with their expanding lifestyle ecosystems (non-financial products and services). These mobile wallets now dominate this space, but they were not built by the fintech start-ups or incumbents.

Successful fintechs identify their target customer. They segment these customers based on demographics, location, or some other feature. The crowdfunding portal Kickstarter targets *creators of artistic projects who have something to share with others*. The payments fintech Wise targets *professional millennials who travel frequently with a need for cash in many countries*. The online lender SoFi targets *young urban professionals who are high earners but not rich yet (HENRYs)*. The mobile money transfer service M-PESA targets *underbanked households in Africa without a bank account*. These successful fintechs developed a product that fit their target customer; they did not simply build a product that was cool but no one needed.

Successful fintechs may describe their business with reference to their customer segment using the acronyms B2C, B2B, B2B2C, and C2C. Let's look at each one in turn.

Business-to-consumer (B2C) fintechs sell financial products and services directly to end-customers, such as individuals or small businesses. B2C fintechs are the developers of mobile apps and online websites that allow you to manage your financial life electronically, when and where you want to. Challenger banks, payment companies, robo-advisors, and insurtechs are examples of B2C fintechs.

Business-to-business (B2B) fintechs sell their products or services to an incumbent, such as a bank, an asset manager, or an insurance company. The fintech's software, app, or other technology is used by the incumbent to improve their digital offering to their end-customers. The incumbent may integrate the fintech's product into a mobile app developed in-house. This relationship may be white-labeled, which means the identity of the fintech is not disclosed to the end-customer. Or the fintech's brand may be disclosed using phrases such as "Powered by PayPal." The distinguishing feature of a B2B fintech is that the end-customer relationship remains with the incumbent, not the fintech.

Some fintechs describe themselves as business-to-business-to-consumer (B2B2C). In this case, they sell a product or service through a financial intermediary to the intermediary's end-customer. The fintech's brand is visible to the end-customer, and the fintech may develop a relationship with and collect data from the customer. An example might be a financial marketplace such as Borrowell or Credit Karma. Both marketplaces sell financial products from bank and non-bank financial partners to individuals. Similar platforms exist for crowdfunding, online lending, banking, personal finance, wealth management, and insurance. The platform collects a fee or

commission and may sell the customer data to third parties if it operates a multi-sided business model.

Finally, a customer-to-customer (C2C) fintech is more commonly known as P2P. This fintech provides a technology platform that allows end-customers to deal directly with each other, bypassing traditional financial intermediaries. Most cryptocurrency exchanges are P2P, as they allow individuals to buy and sell cryptocurrencies and digital tokens directly with each other. The exchange runs the network, maintains the software, and collects a fee for these services.

But beware, many businesses may describe themselves as P2P when they involve a financial intermediary. An example is P2P lending platforms, where a fintech operates the online space where savers and borrowers transact. From the perspective of the customer, it may appear to be a P2P relationship. But from the point of view of the fintech, an online lender is a B2C business model. True P2P businesses are hard to find as there is often an intermediary who is making money in between somehow.

### **Pain Point (What?)**

Once they identify the target customer, a successful fintech must create something the customer will pay for. The best approach is to solve a customer pain point.

A pain point is a negative experience that a customer would be willing to pay to have fixed. If you have a painful tooth, chances are you will pay a dentist to make it go away. The same goes for banking. People view managing their finances as a pain point and are willing to pay a financial intermediary to look after them, even when they do not enjoy the experience. Most people are as excited about visiting their bank as they are to see their dentist!

Financial services are full of pain points. You may feel anxious asking for a loan. You may hate paying a fee to withdraw your money. You may struggle to manage your personal finances. You may waste time driving to a bank to deposit a check. You may be overcharged when you send money abroad. You may be overwhelmed when looking to invest. In surveys of consumers, individuals list concern with their personal finances as a leading cause of stress.

These customer pain points create a market opportunity for fintechs. A fintech can leverage technology to provide an innovative solution to a specific pain point for a target customer. The fintech may develop a website or mobile app that allows a customer to apply for a loan, deposit a check, manage day-to-day banking, make fast and cheap payments, or invest their savings online. It goes without saying that the solution needs to be cheaper, easier, faster, and more convenient than the incumbent's product or service.



Instead of solving an existing pain point, a fintech may find success by addressing an unmet customer need or filling a gap in the market. Customers may not realize they want something because they are unaware of what is possible. For example, Credit Karma provided customers with their credit score, when many did not realize this score existed or understand its importance. Credit Karma then built a multi-sided platform that allows consumers to find the financial products they need easily and conveniently, saving time and money.

B2B fintechs develop products that address pain points facing incumbents. Yes, banks have pain points. They may be held back by a legacy (or old) IT system programmed in Fortran, Cobalt, or C that must be run on a mainframe computer. Or a bank may have undergone several mergers, leaving them with siloed IT systems that are not integrated. An incumbent may not have the design talent or research and development capacity in-house. Or they may lack the budget of larger rivals. By working with a B2B fintech, an incumbent can gain access to innovative, specialized software without the need to develop or maintain it in-house.

B2B fintechs such as Finastra, Moven, Plaid, and Zafin have developed innovative software solutions that allow banks to onboard customers, aggregate data, generate customer insights, and track customer relationships. An incumbent may license software from these B2B fintechs to automate the incumbent's sales and trading, product distribution, or back-office processes such as record keeping, reporting, compliance, security, and risk management. By working together, fintechs and incumbents can deliver the superior user experience that end-customers are seeking.

### **Value Proposition (Why?)**

A successful fintech must offer a clear value proposition to their customer. We call it a "value" proposition because the customer must be willing to pay for it. It is not enough to develop a product that addresses a customer pain point. The customer must be willing to exchange something of value (i.e., money) to have it. If no one will pay for a product or service, it has no value. It is easy to grow a customer base by giving something away for free; it is harder to stay in business over the long run if you do.

Successful fintechs highlight their value proposition on their app or website:

- Wealhtsimple (robo-advisor): "Grow your money. Invest on autopilot. Send cash in seconds. Commission-free stock trading. The simplest way to invest in crypto. File your tax return online. Powerful technology + human help."<sup>9</sup>
- Funding Circle (online lender): "Fast, affordable loan programs with a simple online process and funding in as little as 48 hours. See what's possible for your business when you have it all."<sup>10</sup>



- Revolut (challenger bank): “One app, all things money. From easy money management, to travel perks and investments. Open your account in a flash. Send, spend, and save smarter. All your accounts, all in one place.”<sup>11</sup>
- Wise (foreign exchange and transfer provider): “Send money cheaper and easier than old-school banks at the real exchange rate with no hidden fees. Spend abroad in 175 countries and withdraw anywhere. Receive payments like a local in 10 currencies. Holding multiple currencies is completely free, and we use the real exchange rate to convert.”<sup>12</sup>

Notice these value propositions promise cheaper (commission-free, affordable, free), easier and faster (send cash in seconds, simple online process, send money cheaper and easier, open your account in a flash), and convenient (auto-pilot, online process, like a local, one app, all in one place). Because people have short attention spans, the value proposition must be short and easy to understand. The customer must immediately be hooked.

### **Monetization (How?)**

Once the fintech has created a valuable product that addresses a customer pain point, the next question is how to profit from it. Monetization means to make money. A fintech needs to capture some of the value created for its customers in order to earn a profit. A business is not viable if it cannot pay its bills and reward its employees and investors. The million-dollar question: What fintech product or service will be profitable, and how can a fintech grow and scale this business over time?

Fintechs use many different strategies to generate revenues and monetize their businesses: charging a fee or commission, selling advertising or data, profiting from risk taking, and more. A common technology business model is software-as-a-service (SaaS). SaaS is a subscription strategy where the customer pays a regular fee to license software, much like Netflix charging a monthly fee for movie streaming. A SaaS product is delivered using cloud computing and computer networks. For this reason, SaaS may be called web-based software, on-demand software, or hosted software. There are a variety of related SaaS business models known by different acronyms, including platform-as-a-service (PaaS), infrastructure-as-a-service (IaaS), and banking-as-a-service (BaaS). We will discuss these more later.

We will use *The Fintech Explained Lens* to evaluate different fintechs in the coming chapters. Each time you read about a fintech business, ask yourself: who (customer), what (pain point), why (value proposition), and how (monetization). The answers to these questions will help you to see clearly.