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FINTECH **Explained**

**How Technology
is Transforming
Financial Services**

Table of Contents

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	220
9	Payments and Insurtech	245
10	Digital Banking and the Response of Incumbents	275
11	Techfins and Bigtech in Financial Services	305



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, APIs) with newer ones (big data, blockchain, cloud computing, machine learning).



What is Fintech?

- Fintech is the "digital delivery of financial products and services through the internet, a mobile phone, or other electronic device."
 - Fin = financial products and services
 - Tech = use technology to delivery over internet, mobile phone, or electronic device
- Fintechs leverage technology to solve customer pain points by providing a digital solution that is cheaper, easier, faster, and more convenient than traditional financial services.
 - Value proposition: cheaper, easier, faster, and more convenient



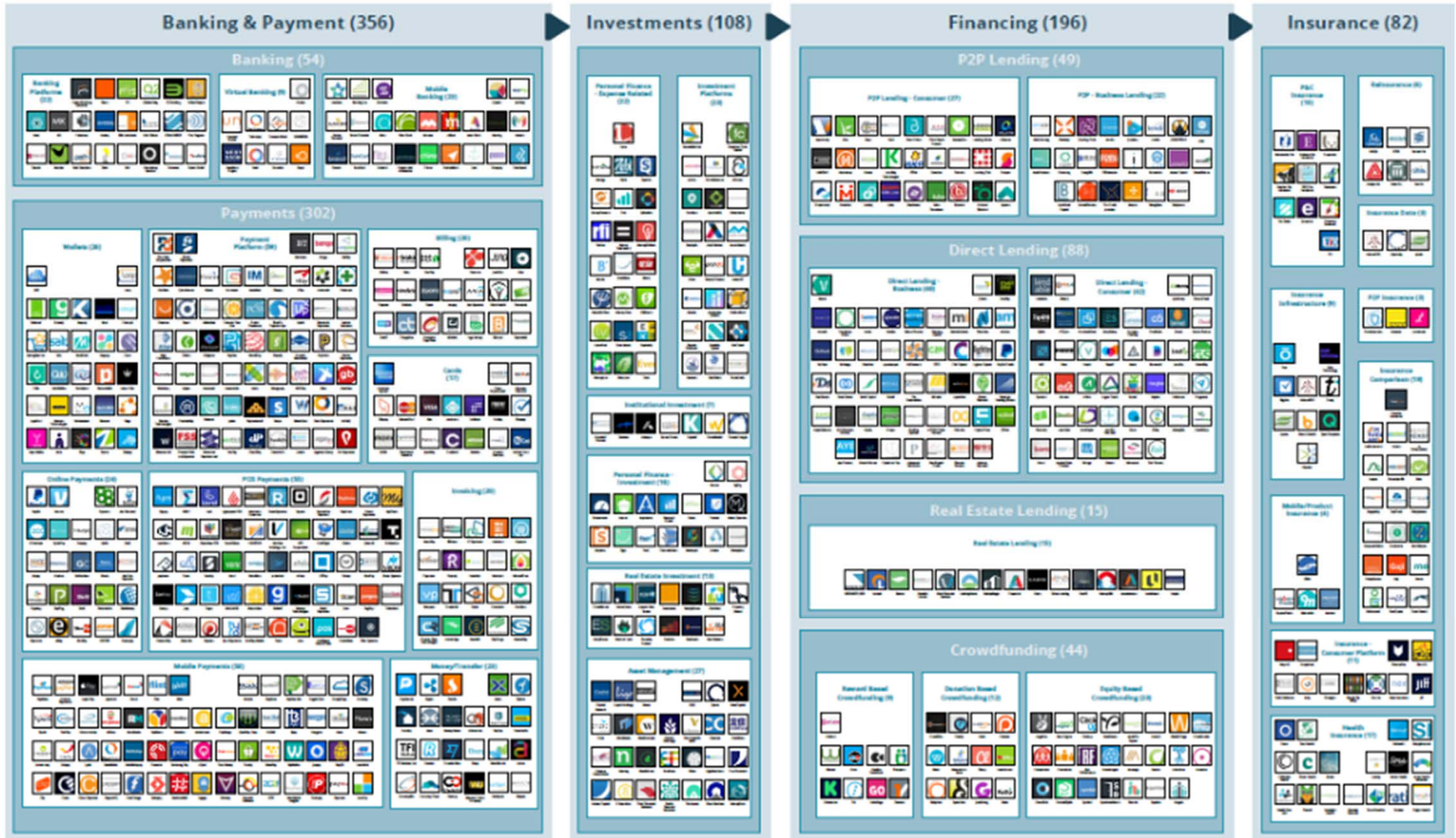
What is Fintech?

- Fintech 3.0 started around 2006 when a number of innovative digital-only companies began disrupting and transforming the financial services industry globally.
- Fintech companies targeted customers who were underserved by traditional financial services.
 - Typically individuals (retail) and small businesses
- Fintech lines of business mirror the financial system
 - Money, lending, capital raising, saving, banking investing, payments, insurance
- Many ways to classify fintechs, from simple tree diagrams to kaleidoscopic collections of logos.

Fintech Lines of Business

DESIGNED BY PIERRE DREUX

Fintech Landscape





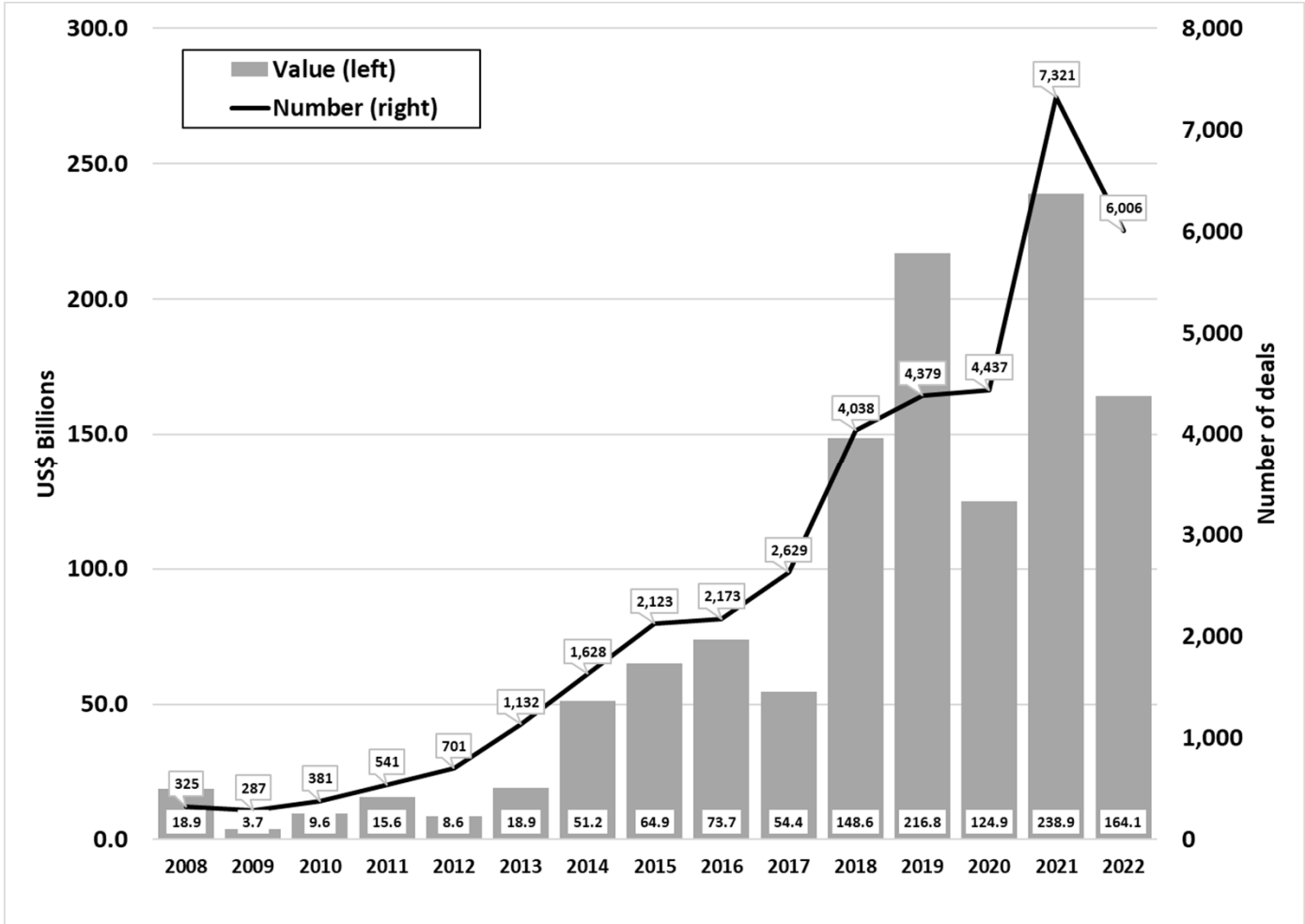
Fintech Lines of Business

- *Fintech Explained* focuses on eight categories:
 - **Crypto**: electronic money & tokens on blockchain.
 - **Decentralized Finance (DeFi)**: an “internet of money” built on blockchain using smart contracts and dapps
 - **Online Lending**: digital platforms to borrow directly.
 - **Crowdfunding**: digital platforms to raise equity, donations & rewards.
 - **Digital Banking**: day-to-day banking & management of personal finances.
 - **Digital Wealth Management**: automate investing, portfolio management, back-office & analytics.
 - **Payments**: digital means of payment, money transfers & remittances, processing & analytics.
 - **Insurtech**: distribute insurance digitally, data analytics & processing.

Growth of Fintech

- KPMG's *Pulse of Fintech* tracks dollars invested in equity by angel investors, venture capitalists, and private equity firms, and through M&A by banks and non-financial businesses

Figure 1.1. Global Investment in Fintech Companies





Growth of Fintech

- KPMG estimates that more than \$1.2 trillion has been invested in close to 38,000 transactions over this 15-year period.

<https://home.kpmg/xx/en/home/industries/financial-services/pulse-of-fintech.html>

- Schumpeter's theory of creative destruction suggests much of this equity investment will be lost as many start-ups inevitably fail.
- The consultancy CB Insights suggests much of the investment in recent years has been follow-on equity investments in the most successful fintechs.

<https://www.cbinsights.com/research/fintech/>

Revolution or Evolution?

- Does fintech represent a natural evolution of the financial system or a revolution?
- Fintech believers describe it as a **revolution**.
- The goal: to disrupt the existing financial order
 - Empower consumers by disrupting the gatekeepers who dominate the financial system – banks, lenders, brokerages, asset managers, insurance companies and other “incumbents”.
 - These incumbents charge high fees and commissions that are not transparent, estimated at [2% of all financial transactions](#)
 - They provide mediocre service to retail and small business customers.



Revolution or Evolution?

- For skeptics, fintech is a natural **evolution** of the current financial system.
 - Incumbents have been investing in IT for centuries with the goal of providing all customers with better products and faster service
 - They have connected the world's banking systems and financial markets.
- A CFA Institute study describes the current era as “Fintech 3.0” – a third wave of digital transformation that followed two earlier bursts of innovation.



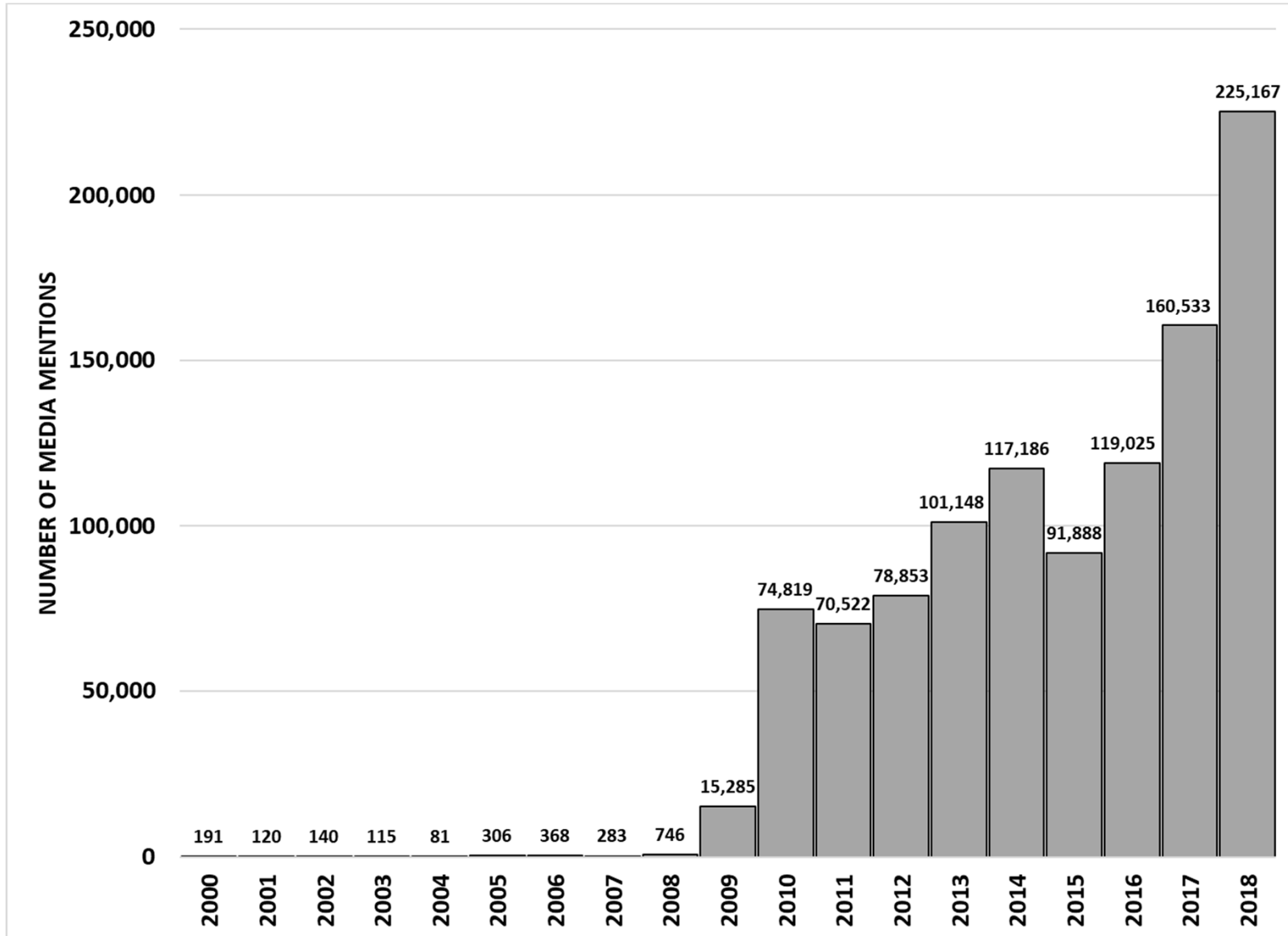
Fintech 3.0

- Fintech 1.0 began in 1858 when a transatlantic cable was laid between London and New York.
 - Fintech 1.0 lasted until 1960s, characterized by analog technology such as the electronic ticker tape.
- Fintech 2.0 started with the computer revolution in the late 1960s and ended in mid-2000s
 - Fax (1966), ATM (1967), NASDAQ (1971), mobile phone (1973), mainframe computers, PCs, World Wide Web (1989), e-commerce, 2G mobile networks (1991), 3G (1998), VOIP and more.
- Fintech 3.0 began mid-2000s & focuses on underserved retail and small business customers
 - P2P lending platforms LendingClub & Zopa launched in 2006, crowdfunding platform Kickstarter in 2008, and the cryptocurrency Bitcoin in 2009.

Fintech 3.0



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



Source: Factiva.

Fintech 3.0

- Why did fintech take off in the mid-2000s?
- ...Technological change
 - Amazon Web Services (AWS) in 2006 provided massive, scalable computing power and data storage at a relatively low cost.
 - Apple iPhone in 2007 and Google Android devices in 2008 put a powerful computer in the pocket of consumers.
- Global Financial Crisis of 2007–2008 broke trust in incumbents and had an unexpected side effect
 - Experienced finance professionals lost their jobs or became motivated to reform the financial system
 - Entrepreneurial start-ups found a ready audience with digital-native millennials (early adopters)



Two Paradigms of Fintech

- 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.
 - Some event causes the dominant paradigm to be updated or overturned -- a discovery, invention, or crisis.
- Technology is causing a paradigm shift in the global economy, of which financial services is one part
 - World Economic Forum calls it the [Fourth Industrial Revolution](#)
- With every paradigm shift, some people hold on to the status quo (e.g. Catholic Church vs. Galileo)
 - Old and new paradigms may coexist for some time, making it difficult to see the bigger picture.

Two Paradigms of Fintech

Traditional Paradigm

- Fintech is an evolution of the financial system.
- Incumbents are product-centric, with business units organized around the products they sell.
- Incumbents are using technology to improve efficiency of back-office to increase the profitability of their one-sided business models.
- The goal: to capture more rents for bank insiders and shareholders.

Transformational Paradigm

- Fintech is a revolution disrupting an oligopolistic, rent-extracting industry.
- Fintechs are customer-centric, focused on providing a delightful experience to consumers.
- Fintechs are leveraging technology to solve customer pain points in financial services.
- The goal: to deliver a customer experience that is cheaper, easier, faster, and more convenient.



Traditional Paradigm of Fintech

- Incumbents is as an evolution of the current financial system, not a revolution.
 - The financial system is a global marketplace where insiders benefit disproportionately from their activities.
 - Incumbents are organized based on the products they sell and maximize profitability through specialization.
 - Each division and product team sees only part of the customer lifecycle, not the bigger picture
 - Use technology to reduce costs and increase profitability of traditional one-sided business models.
 - Fintech is an expansion of their existing distribution channels: branches, phone, and online.



Transformational Paradigm of Fintech

- Fintech is a revolution disrupting an oligopolistic, rent-seeking industry
 - Incumbents are oligopolies who should be turned into utilities; financial products are commodities and should be priced accordingly.
 - Transformational fintechs are customer-centric, not product-centric. They focus on the customer experience – how customers perceive and consume financial services.
 - Managing finance is a major source of stress and anxiety for customers. Technology provides a means to eliminate customer pain points.
 - Fintech is erasing the artificial boundaries between financial services and non-financial day-to-day activities, unbundling and rebundling them to meet customer needs.

The Fintech Explained Lens

- ...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.



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?



Who is the Fintech's Customer?

- Know your customer!
 - Every business exists to serve customers who pay for the company's product or service.
 - May be described as early adopters, the target market or customer segment, serviceable available market.
- Start by identifying the targeted customers and their unmet need.
- Then create a product that fits this customer (*product-market fit*)
 - Do NOT simply use a cool technology to develop a solution for a problem that does not exist!

Fintechs & Their Target Customers

- **Kickstarter** (crowdfunding) → creators of artistic projects who have something to share with others.
- **Wise Financial** (payments) → professional millennials who travel frequently with a need for cash in many countries
- **SoFi** (P2P lending) → young urban professionals who are high earners but not rich yet (HENRYs).
- **M-Pesa** (digital banking) → underbanked households in Africa without a bank account.

Customer Segments

- Fintechs may describe their business as B2C, B2B, B2B2C, or C2C.
 - **Business-to-consumer (B2C)** fintechs sell financial products and services directly to end-customers. Examples: challenger banks, payment companies, robo-advisors, and insurtechs.
 - **Business-to-business (B2B)** fintechs sell to an incumbent. Fintech's product is integrated into a mobile app developed in-house. It may be *white-labeled* (fintech name hidden) or disclosed to end-customer.
 - **Business-to-business-to-consumer (B2B2C)** fintechs sell to the intermediary's end-customer, with fintech having a direct relationship. Examples: financial marketplaces (Borrowell, Credit Karma).
 - **Customer-to-customer (C2C)** fintech is also known as P2P. Examples: cryptocurrencies.



What Pain Point is the Fintech Solving?

- A pain point is a negative experience that a customer would be willing to pay to have fixed (like a toothache).
 - Managing finances is a pain point for many people.
- Pain points create a market opportunity.
 - A fintech can leverage technology to provide an innovative solution to solve it for a target customer.
 - The fintech's solution needs to be cheaper, easier, faster, and more convenient than the incumbent's.
- A fintech may also find success by addressing an unmet customer need or filling a gap in the market.
 - 'Give and get' (e.g. Credit Karma and free credit scores)
 - Banks have internal pain points B2B fintechs can solve using technology (e.g. Finastra, Moven, Plaid, Zafin).

What is the Value Proposition?

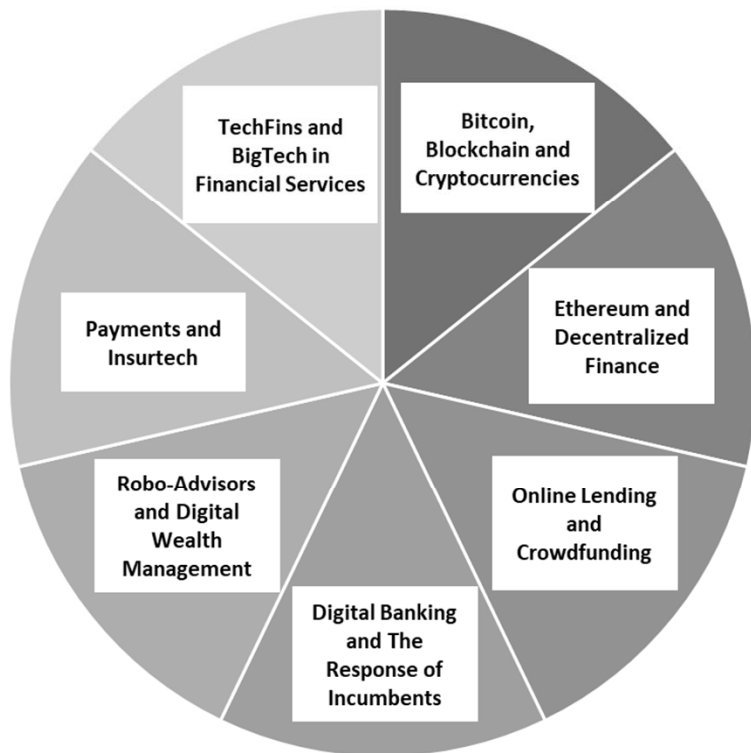
- A successful fintech must offer a clear **value proposition** to their customer.
 - Not enough to solve a pain point. The customer must be willing to pay for it!
- Examples of fintech value propositions:
 - **Wealthsimple** (robo-advisor): “Grow your money. Invest on autopilot. Send cash in seconds. Commission-free stock trading. The simplest way to invest in crypto. File your tax return online. Powerful technology + human help.”
 - **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.”
- Must be short & compelling to hook the customer

What is the Monetization Strategy?

- Monetization = earn money. Fintech needs to capture some of value created for its customers.
 - A business model is a description of the monetization strategy.
- Many ways to generate revenues
 - Crowdfunding platform (Kickstarter) charges a fee or collects a commission
 - Balance-sheet lender (SoFi) profits from risk taking
 - B2B fintech (Plaid) charges bank a subscription to license software, called software-as-a-service (SaaS)
 - Brokerage platform (Robinhood) offers free trades but sells order data to third-parties

Fintech Lines of Business

- Many fintechs built an initial foothold around a single product or service, then diversified revenues to offer a portfolio of products that defy easy classification



2011: P2P platform specializing in student loans for MBAs.

Now: a one-stop shop for financial services where members can borrow, save, spend, invest, and protect their money.



Types of Fintech Companies

- Fintech label describes companies with vastly different capabilities, scale, and funding
 - **Entrepreneurial start-up:** low revenues, fewer than 10 employees, owned by founders & early-stage investors.
 - **Mature company:** thousands of employees, high revenues, & a stock exchange listing (PayPal, Square).
 - **Digital-only bank:** startup or incumbent with a digital-only business (Chime, Nubank).
 - **Global technology platform:** techfin or bigtech that bundles financial and non-financial products & services (Apple, Ant Group).
- More than 300 fintech “unicorns” at year-end 2022; privately-held company with \$1 billion+ valuation based on latest funding round.



Types of Fintech Companies

Type of Fintech	Entrepreneurial start-up	Mature company	Digital-only bank	Global technology platform
Description	New ventures founded and run by entrepreneurs	Former ventures that have scaled and gone public	Banks, insurance companies, asset managers, and other financial intermediaries	E-commerce, gaming, social media, telecommunication & consumer product companies
Innovation culture	√	√		√
Technical expertise	√	√	√	√
Financial expertise		√	√	
Regulatory expertise			√	
Risk management expertise			√	
IT systems	√	√	√	√
Economies of scale		√		√
Access to customers		√		√
Access to funding		√	√	√
Access to talent	√	√		√



The Fintech Ecosystem

- In biology, an ecosystem is a community of living organisms and the non-living components that support them (e.g. rainforest, coral reef)
- Each stakeholders in fintech ecosystem plays a role
 - Fintech companies
 - Innovation labs (incumbent R&D and beta testing)
 - Incubators and accelerators (Level39, Y Combinator)
 - Technology hubs (e.g. MaRS Discovery District)
 - Investors and capital providers (FFF, angels, VCs, P.E.)
 - Regulators and policymakers (incl. sandboxes)
 - Other: universities and colleges, trade and business associations, research organizations, consultancies, shared workspaces, and technology partners.

The Fintech Ecosystem

- Consultancies rank ecosystems globally, highlighting USA (Silicon Valley, New York), the United Kingdom (London), Singapore, Hong Kong, Europe, Australia, Canada, China, and UAE.

Table 1.3. 2020 Rankings of Fintech Ecosystems

Rank	Country	Rank	City
1	United States	1	Silicon Valley (U.S.)
2	United Kingdom	2	New York (U.S.)
3	Singapore	3	London (U.K.)
4	Lithuania	4	Hong Kong
5	Switzerland	5	Boston (U.S.)
6	The Netherlands	6	Singapore
7	Sweden	7	Berlin
8	Australia	8	Dubai
9	Canada	9	Toronto
10	Estonia	10	Shanghai

Source: Findexable Ltd., Accenture.

Promoting Financial Inclusion

- Fintech has potential to democratize access to finance and increase financial inclusion for unbanked or underbanked populations worldwide.
 - 1.7 billion adults worldwide do not have a bank account or access to basic financial services, but two-thirds have a mobile phone (source: World Bank)
 - 6% of American adults do not have a checking, savings, or money market account (source: Federal Reserve)
- Many fintechs have an explicit societal agenda and may be described as "social finance"
 - Target a social return plus an economic return

Promoting Financial Inclusion

- Two types of social finance fintechs:
 1. Earn a profit while providing a service to an underserved customer segment
 - **M-Pesa** (Kenya): launched 2007 to provide cheap and accessible banking using widely available mobile phones via text messages and a network of local representatives from the telecom company Safaricom (Vodafone)
 2. Use technology to democratize finance by disintermediating incumbents and disrupting their monopoly rents
 - **Wise Financial** (UK): founded 2010 to provide a cheaper and faster alternative for cross-border currency transfers by eliminating the hidden costs charged by banks

Ten Technologies Behind Fintech

- Fintech 3.0 is possible due to combination of existing technologies with newer ones.
 - Described pages 24-30.

EXISTING TECHNOLOGIES	NEW TECHNOLOGIES
<ul style="list-style-type: none"> • Computers • Smartphones • Peer-to-peer (P2P) networks • Application programming interface (API) • Artificial intelligence 	<ul style="list-style-type: none"> • Big data • Blockchain & distributed ledger technology (DLT) • Ethereum • Cloud computing • Machine learning • Multi-sided platforms • Smart contracts



Questions for Discussion

1. What is fintech? What do the “fin” and the “tech” represent? Give examples of both.
2. In your opinion, does fintech represent an evolution of the financial system or a revolution? Why?
3. What is a paradigm shift, and what causes it? What are the two paradigms of fintech and what are their key differences?
4. What are the four questions of The Fintech Explained Lens used in this book? How does this framework help to evaluate fintechs?
5. What are the different fintech lines of business? What are their main products or services?
6. What four types of companies are engaged in fintech? What are their respective strengths?
7. What role does the fintech ecosystem play and who are the key stakeholders?
8. How is fintech promoting financial inclusion? What are the two types of social finance fintechs?
9. What is cryptography and why is it important for blockchain?
10. What is a peer-to-peer (P2P) network and how is it related to a multi-sided platform?

Key Terms

- accelerator
- application programming interface (API)
- artificial intelligence (AI)
- banking-as-a-service (BaaS)
- big data
- bigtech
- blockchain
- business-to-business (B2B)
- business-to-business-to-consumer (B2B2C)
- business-to-consumer (B2C)
- cloud computing
- cryptography
- customer-to-customer (C2C)
- decentralized network
- digital ledger technology (DLT)
- distributed network
- ecosystem
- Ethereum
- financial technologies (fintech)
- incumbents
- machine learning
- multi-sided platform
- node
- open banking
- pain point
- paradigm shift
- peer-to-peer (P2P) network
- smart contract
- social finance
- software-as-a-service (SaaS)
- techfin
- unbanked
- unicorn