



# Fintech Unfolding: Financial Revolution in India

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## Abstract

The aim of this paper is to present the role of Financial Technologies, or Fintech, in the financial industry, specifically in the banking sector, using data from the Reserve Bank of India's Report of the Working Group on Fintech and Digital Banking (2017). The paper discusses recent Fintech developments in Indian banking in detail. This research indicates a direction for Fintech evolution in terms of changing industries and customers. It will dive deeper into the logical progression of Fintech-based developments, as well as the connection between Fintech and financial inclusion. The study indicates that there is a value frontier in further exploration of new perspectives on upcoming financial technology and its implications for the banking sector.

**Keywords:** Financial inclusion, Peer-to-peer lending, Crowd funding, Blockchain, Big data.

**JEL Classifications:** F38; O16; O33

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## **1. Introduction**

Fintech refers to the use of technology to provide various financial services. Traditional financial firms, startups, venture capitalists, and regulators are all involved in Fintech (Lee and Shin, 2018; Chanson et al., 2018). Fintech, at its most basic level, uses specialised software and algorithms to help organisations, business owners, and people better manage their financial operations, procedures, and lifestyles through the use of computers, and, increasingly, smartphones (2018, Jung, Dorner, Weinhardt, and Pusmaz).

Fintech is described as the “technologically enabled financial innovation” and is defined by the Financial Stability Board (FSB) as “new business models, technologies, procedures, or products that have a significant impact on financial markets and institutions, as well as financial services provision.” Fintech is used to deliver financial services by a range of industries, including the insurance industry, asset management companies, payment companies, and many more. Smartphone use for advanced access to banking facilities, investment administrations, and digital currency are examples of advancements aimed at expanding financial services available to the public.

The production and use of digital currencies such as bitcoin falls under the Fintech umbrella. While that area of Fintech receives the most attention, the majority of the money remains in the traditional global banking industry, which has a multi-trillion-dollar market cap (2019, Goldstein et al.). The term "Financial Technology" can be applied to any advance in how individuals transact business, from the advent of digital money to double-entry accounting. Fintech, which originally referred to computer technology, applied to the back office of banks or trading firms, has grown explosively since the internet revolution and the mobile internet/smartphone revolution, and Fintech now refers to a wide range of technological interventions into personal and commercial finance (Arner, Barberis, & Buckley, 2015). Transferring money, depositing a check with your smartphone, applying for credit without going to a bank, obtaining cash for a company start-up, and managing your investments are examples of Fintech today. According to EY's 2017 Fintech Adoption Index, one-third of customers use two or more Fintech services, and these customers are becoming more conscious of Fintech as a part of their daily lives (Böhme et al., 2015; Yu et al., 2017).

The most well-known (and well-funded) Fintech startups all have one thing in common: they're designed to challenge, and eventually usurp, established traditional financial services providers by being nimbler, serving an underserved segment, or providing faster and better service (Belanche et al., 2019; D'Acunto et al., 2019).

Machine learning, artificial intelligence, predictive behavioural analytics, and data-driven marketing are examples of new technologies that will remove the guesswork and habits from financial decisions. (Frame et al., 2019). "Learning" apps will not only study users' hidden patterns but also involve them in learning activities to improve their habitual, unconscious spending and saving decisions. Fintech is also a quick adopter of automated customer care technologies, relying on chat-bots and AI interfaces to help customers with basic tasks while simultaneously reducing staffing expenses. Fintech is also being used to combat fraud, with payment history information being utilised to spot unusual transactions. Fintech developments (Frame et al., 2019) are divided into categories based on financial market domains as stated in Table 1.

Table 1: FinTech Ecosystem

Clearing and Settlement of Payments	Deposits, Lending, and Funding	Provisioning on the market	Investment Management	Risk Assessment & Data Analytics
Payments via mobile and the internet Crypto currencies Ledger that is distributed	Ledger decentralised, Currency in the digital age, Crowdfunding, Peer-to-peer Lending	Cloud networking, Smart contracts, e-Aggregators	Advice from a robot e-Trading for smart contracts	Artificial Intelligence, Robotics, and Big Data

Source: World Economic Forum

## 2. FINTECH IS REVOLUTIONIZING FINANCE AND USHERED IT INTO THE DIGITAL AGE

According to Gomber et al. (2018), Fintech, or digital technologies, has played a vital role in the transformation of financial markets. Fintech is a rapidly emerging segment of the financial services industry, where technology-enabled business model startups and other new market entrants are posing a threat to the current financial ecosystem's operations (Jagtiani and Lemieux) (2018a, 2018b). The presence of an untapped vast consumer base, focused on creative start-ups, and benevolent government policies and guidelines have all contributed to India's unparalleled advancement in the Fintech field. Both conventional banking institutions and non-banking financial companies (NBFCs) are adopting fintech to keep up with the speed of numerous dynamic startups. This latest wave of revolution is hitting the financial services market, and it is triggering a paradigm shift in banking. Fintech in India could be able to provide a viable solution to conventional financial institutions' problems with low market penetration, credit history, and cash-based transactions in the economy.

Only with the involvement of regulators, industry participants, and investors can the Indian banking and financial services sector be significantly transformed. Fintech companies are reshaping markets and consumer paths by lowering the cost of everyday transactions. India has made tremendous strides as a digital economy. Currently, India has more than 1,500 Fintech start-ups, both large and small, half of which were established in the last two years. Between 2013 and 2014, India's Fintech industry grew by 282 percent, reaching USD 450 million in 2015. More than 400 fintech companies are currently operating in India, with investments expected to increase by 170 percent by 2020, according to NASSCOM, the National Association of Software and Services Companies. From USD 33 billion in 2016, the Indian Fintech market is projected to reach USD 73 billion in 2020. Table 2 presents the different facets of Fintech in the Indian financial markets:

Table 2: top 50 Fintech Companies in India

Company	Website	Capital	Subdivision	Founder/s / group with MDs
Paytm Payments Bank (Paytm Wallet; One97 Communications)	paytm.com	2.77 billion	Payments	Vijay Shekhar Sharma
ItzCash Card	itzcash.com/	174 million	Payments	Naveen Surya
MobiKwik	mobikwik.com	161.81 million	Payments	BipinPreet Singh; UpasanaTaku
Financial Software & Systems	<a href="http://www.fsstech.com/">www.fsstech.com/</a>	99.51 million	Payments	Nagaraj V. Mylandla; J. Rudhraapathy (Full-time director)

Table 2: top 50 Fintech Companies in India

Company	Website	Capital	Subdivision	Founder/s / group with MDs
Bank Bazaar	bankbazaar.com	80 million	Personal Finance Management	AdhilShetty (CEO); ArjunShetty (COO); RatiShetty (Chief Product officer)
InCred	incred.com	75 million	Lending	Bhupinder Singh
Policy Bazaar	<a href="http://www.policybazaar.com">www.policybazaar.com</a>	69.79 million	Insurance	Yashish Dahiya; Alok Bansal; Avaneesh Nirjar
Ezetap Mobile Solutions	<a href="https://corp.ezetap.com/">https://corp.ezetap.com/</a>	66.1 million	Payments	ShripatiAcharya; Sanjay Swamy; Abhijit Bose; Bala Parthasarathy; Bhaktha Keshavachar
kart for lending	<a href="https://www.lendingkart.com/">https://www.lendingkart.com/</a>	64.5 million	Lending	HarshvardhanLunia; MukulSachan
Fino Payments Bank (FinoPaytech)	<a href="http://www.finopaytech.com/">http://www.finopaytech.com/</a>	59.31 million	Payment	Rishi Gupta
Mswipe Technologies	<a href="http://www.mswipe.com">www.mswipe.com</a>	56 million	Payments	Manish Patel
Capital Float	<a href="http://www.capitalfloat.com">www.capitalfloat.com</a>	45.8 million	Lending	Sashank Rishyasringa; Gaurav Hinduja
Electronic Services and Payments	electronicpay.in	40 million	Payments	Mani Mamallan
Neo Growth Credit	<a href="https://www.neogrowth.in">https://www.neogrowth.in</a>	36.6 million	Lending	DhruvKhaitan; PiyushKhaitan
CCAvenue	<a href="https://www.ccavenue.com/">https://www.ccavenue.com/</a>	31.31 million	Payments	Vishwas Patel
Coverfox	<a href="https://www.coverfox.com/">https://www.coverfox.com/</a>	29 million	Insurance	Varun Dua; Devendra Rane
Clear Tax	cleartax.in	15.43 million	Personal Finance Management	Archit Gupta; Srivatsan Chari; Ankit Solanki
India's Fund	<a href="http://www.fundsindia.com">www.fundsindia.com</a>	15.23million	Personal Finance Management	CR Chandrasekar; Srikanth Meenakshi
Flexiloans	<a href="https://flexiloans.com/">https://flexiloans.com/</a>	15 million	Lending	Deepak Jain; Abhishek Kothari; Ritesh Jain; Manish Lunia
MoneyTap	<a href="https://www.moneytap.com/">https://www.moneytap.com/</a>	12.31 million	Lending	KunalVarma; AnujKacker; BalaParthasarathy
Razor pay Software	razorpay.com	11.50 million	Payments	Shashank Kumar; HarshilMathur
Credit Mantri	<a href="http://www.creditmantri.com">www.creditmantri.com</a>	10.22 million	Lending	Sudarshan R; Gowri Mukherjee; RanjitPunja
Money View	<a href="http://www.moneyview.in">http://www.moneyview.in</a>	10.2 million	Personal Finance Management	Sanjay Aggarwal
Indifi Technologies	<a href="http://www.indifi.com/">www.indifi.com/</a>	10 million	Lending	SundeepSahi; Alok Mittal; SiddharthMahanot
ZestMoney	zestmoney.in	8.51 million	Lending	Elizabeth Chapman; Priya Sharma; AshishAnantharaman
Chillr	chillr.com	7.1 million	Payments	Sony Joy; AnoopSankar; Mohamed Galib; LishoyBhaskaran
Loan Tap	loantap.in	7.1 million	Lending	Satyam Kumar; Vikas Kumar
Charge Bee Technology	<a href="https://www.chargebee.com/">https://www.chargebee.com/</a>	6.3 million	Payments	KP Saravanan; Thiyagarajan T; RajaramanSanthanam; Krish Subramanian
Rubique	<a href="http://www.rubique.com">www.rubique.com</a>	6 million	Lending	Manavjeet Singh
Juspay	<a href="https://juspay.in/">https://juspay.in/</a>	5.8 million	Payments	Vimal Kumar; Ramanathan RV
Fair cent	faircent.com	5.74 million	Lending	Vinay Mathews; Rajat Gandhi; Nitin Gupta
Early Salary	earlysalary.com	5.5 million	Lending	AkshayMehrotra
India Lends	indialends.com	5.1 million	Lending	Gaurav Chopra; MayankKachhwaha

Table 2: top 50 Fintech Companies in India

Company	Website	Capital	Subdivision	Founder/s / group with MDs
Up-stox	upstox.com	4 million	Online Trading Platform	Ravi Kumar; Raghu Kumar; Shrini Viswanath
Air Pay Payment Services	airpay.co.in	3.7 million	Payments	KunalJhunjhunwala; Amit Kapoor; Rohan Deshpande
Active.ai	active.ai	3.51 million	AI	Shankar Narayanan; Parikshit Paspulati; Ravi Shankar
Instamojo	instamojo.com	3.12 million	Payments	Sampad Swain; Akash Gehani; Harshad Sharma
Secure Now Tech Services	<a href="https://securenow.in/">https://securenow.in/</a>	3 million	Insurance	Abhishek Bondia; Kapil Mehta
Red Carpet	<a href="http://www.redcarpetup.com">www.redcarpetup.com</a>	2.7 million	Lending	Sandeep Srinivasa; Kartik Venkataraman
Scripbox. Com India	<a href="http://www.scripbox.com">www.scripbox.com</a>	2.51 million (disclosed)	Managing Personal Finances	Sanjiv Singh; Ashok Kumar E R
Pay near	paynear.in	2.4 million	Payments	Anil Bharadwaj; Priti Shah
Tru Pay	<a href="http://trupay.in/">http://trupay.in/</a>	2.4 million	Payments	Rahul Gochhwal; Narender Kumar
Technologies for Loan Frames	<a href="https://www.loanframe.com">https://www.loanframe.com</a>	2.24 million	Lending	Shailesh Jacob
Easy policy	easypolicy.com	2.1 million (disclosed)	Insurance	Alok Bhatnagar; Neeraj Aggarwala; Divyanshu Tripathi
Credit Vidya	creditvidya.com	2.1 million	Lending	Abhishek Agarwal; Rajiv Raj
e-Paylater	epaylater.in	2.1 million	Lending	Aurko Bhattacharya; Uday Somayajula; Akshat Saxena; Shanmu Thiagaraja; Prasanna Muralidharan
Uno-Coin	Unocoin.com	1.74 million	Crypto currency	Sathvik Vishwanath; Abhinand Kaseti; Sunny Ray; Harish B V
Fisdome	<a href="http://www.fisdome.com">www.fisdome.com</a>	1.54 million	Personal Finance Management	Subramanya SV (Subu); Ramganes Iyer (Ramg); Anand Dalmia
RenewBuy	<a href="http://www.renewbuy.com">www.renewbuy.com</a>	1.6 million	Insurance	Indraneel Chatterjee; Balachander Sekhar; Sandeep Nanda
Zebpay	<a href="http://www.zebpay.com">www.zebpay.com</a>	1.14 million	Cryptocurrency	Sandeep Goenka; Saurabh Agrawal; Mahin Gupta

Source: <https://securenow.in/insuropedia>

Crowdfunding platforms, thanks to Fintech, now enable entrepreneurs to raise funds from a crowd of online investors, making them a source of entrepreneurial finance (Cumming and Hornuf) (2018). Estrin and Khavul (2016) describe equity crowd funding as an open platform for entrepreneurial financing that occurs on a two-sided online network and functions within a social media context.. According to P2P, "financial service is made possible by a direct, one-on-one relationship between a single user and one or more providers." The year (Off & Wieandt, Moenningh). Peer-to-Peer (P2P) lending, which is similar to the borrowing from friends and family, allows anyone to borrow money from an online network under mutually agreed-upon terms and profit-sharing arrangements.

P2P offers a forum that is close to microfinance. People in rural India without bank accounts can now send money across borders and even internationally using cell phones thanks to digital wallet providers. Fintech, or financial technology, is redefining

the financial services industry. India now has a growing number of Fintech start-ups, accelerators, and incubators. India has it all. India has everything in place to establish itself as a global Fintech centre. India has a strong chance of developing Fintech because it has a wide platform of underserved and unserved consumers, high mobile penetration, rapidly evolving demographics, an innovation-driven start-up, consumer behavior, and a pool of advanced technology. It is now introducing new technology to replace outdated financial systems, such as mobile-based payments, fund transfers, fund raising, lending, and portfolio management.

Demonetization, the implementation of the Goods and Services Tax (GST), the introduction of initiatives such as the Unified Payments Interface (UPI), and the linking of financial services such as bank accounts to Aadhaar have all contributed to a surge in Fintech development in India. Via announcements on the National Program on Artificial Intelligence, cash flow-based lending trends, specific business identifiers, and an emphasis on block chain, among other things, the Union Budget 2018 has given the Fintech community a boost. While these policies are beneficial to Fintech, one of the most critical criteria for maintaining a long-term Fintech ecosystem is the development of a supportive climate. A clear and standardized regulatory framework: "AI is better understood as the overarching area that builds complex machines that can display all characteristics of real human intelligence," according to Odinet (2018). It alludes to technology supplanting human intelligence. According to Chen (2019), blockchain was cited as "the fastest-growing field of Fintech innovation" with "massive future potential in financial services," . It is an electronic payment system in which the system performance guarantees the payment's protection. According to Abraham et al. (2019), robo-advisors will reduce other additional costs associated with providing financial services while still charging lower fees.

### **3. FINTECH'S VULNERABILITIES**

The bank is exposed to various risks because of the activity of fintech (Gefen and Pavlou, 2006, 2012; Fang et al., 2014). The following two major sources of risk are expected to manifest.

1. Micro-financial risks: credit, liquidity, operational risks, including cyber and legal risks, debt, and maturity mismatch.
2. Macro-financial risks – unsustainable credit expansion, increased interconnectedness or relationships, preferential treatment for high-risk organisations, procyclicality, contagion, and systemic significance.

#### ***3.1 Financial technology and innovation have both risks and opportunities for the banking system.***

Risks for the banking system:

1. Risks to strategy and profitability
2. Financial parties are becoming more intertwined.
3. A higher degree of operating risk is a structural problem.
4. Operational risk is more idiosyncratic.
5. Due to third-party/vendor management, there is a high risk of failure.
6. Risk of noncompliance, which involves customers and data security control
7. Terror financing is a term used to describe money laundering.
8. Bank funding channel volatility and risk-related liquidity.

Opportunities for the banking system:

1. Processing improvements in the banking industry

2. Innovation in the use of data for the purposes of marketing and risk management
3. Increased competition helps maintain financial stability.
4. Regulatory technology

#### **4. FINTECH IS TRANSFORMING THE BUSINESS WORLD**

The incorporation of technology into the provision of financial services has permanently altered the operating style of companies. Traditional business models or traditional investors are no longer feasible choices for entrepreneurs, due to the availability of anything from crowd sourcing to mobile payments. Not only has it become easier to start a company, but it has also broadened its reach. In crowd sourcing, for example, an entrepreneur can find investors without ever meeting them. As a result, lengthy periods of investor discussions can be avoided, and entrepreneurs can see fund flow in weeks rather than months. Digital technology has revolutionized traditional banking by allowing small businesses and individuals to move funds across borders in record time. As a result, Fintech has significantly reduced costs, and Fintech-adapted companies can attract significant investments because they are much more capable than traditional banks, as they do not have the same overheads and responsibilities. Their overall size increases and adapts in a way that larger corporations can only hope to do. Fintech technologies such as crowd funding, mobile-based payments and foreign fund transfers are transforming small business start-ups and spreading internationally, making it easier than ever to start and run a business. According to Ahern (2018), crowd funding allows you to collect money quickly and easily from people worldwide. It has streamlined the process of locating start-up resources and cut-meeting times from months to a few weeks.

#### **5. FINTECH CONSUMER RECOMMENDATIONS**

The Fintech revolution is having a huge impact on consumer behavior and perceptions (Shim and Shin, 2016; Mackenzie, 2015; Lee and Lee, 2015). Through prioritising their needs in the design of tools and efficient service delivery, creative technology solutions offer a smooth customer experience. From payments to fund management and the entire banking platform is accessible on a mobile device. Millennials, in particular, tend to manage their finances in a straightforward and comfortable manner. The system's incorporation of blockchain and artificial intelligence has made this network safer for financial transactions than conventional banks. The customer's preference is due to lower fees, quicker processing times, and usability. With the abundance of new tools and services, it is now more important than ever for companies to adopt the latest technology, as the economy is now a connected economy where consumers have 24/7 access to knowledge, and those who refuse will not survive or thrive in this market. Nonetheless, Fintech in India is still in its infancy. Customers are motivated by service delivered across unconventional technologies such as cloud computing and social media, which, by 2020, will be the primary channel for customer interaction and a medium for customers to research and compare bank offerings. Partnerships between banks and new entrants are needed to create a Fintech ecosystem, which involves product design and development by start-ups and distribution and infrastructure capabilities by banks. As a consequence, it is an effort to spread the risk and take advantage of faster profits. Scalability, vision, product life cycles, buy vs. build, and other factors are driving these win-win partnerships. For

benefit and growth, fintech companies are now catering to the vast unbanked markets of small businesses. According to The et al., (2017), even small fintech companies have drawn large investments due to their technology-based business models.

## **6. FINTECH WILL ASSIST WITH FINANCIAL INCLUSION**

According to Guild (2017), to increase financial inclusion, it is essential to follow a sensitive and regulatory approach. Financial inclusion is now reflected in Fintech. Financial inclusion refers to the process of getting India's unbanked people into the mainstream of the financial system. Entry to financial services, use of financial services, and financial inclusion, are the three major aspects of financial inclusion, as well as the quality of financial goods and the manner in which they are delivered. According to Sarma and Pais(2008a), financial inclusion is the process of providing universal access to a broad range of financial products and services at a fair rate. Fintech has opened a new door to it, which is a widely acknowledged and accepted reality. Fintech (financial technology) is a combination of financial services and technology that enables financial inclusion by democratizing access to the financial system for individuals and small businesses that were previously excluded from formal financial markets (Bofondi and Gobbi) (2017). Fintech companies are increasingly serving as a forum for all financial solutions for small businesses, as well as a catalyst for MSMEs' growth. Digital technologies pervade all facets of financial services and have a major effect on financial inclusion. It renamed financial inclusion "digitally derived financial inclusion" in which a digital medium is used to provide accessible financial services to unbanked and underserved customers. It consists of digital devices, digital transactional networks, and digital transactional services.

Promoting and developing digital financial services, addressing associated risk by creating a legal and regulatory structure, emphasizing customer data security, fostering financial literacy to spread awareness, and monitoring progress are all concepts of digital financial inclusion. Fintech is important for resolving all issues related to financial inclusion. It is a financial transformation that is driving the country's growth by bridging the gap between the informal and formal sectors. With the introduction of mobile technologies, online partnerships have an advantage over brick-and-mortar banks (Haridasan and Fernando, 2018). The fintech revolution is being fueled by mobile devices, smartphones, and widespread network coverage, which are turning non-consumers into consumers at affordable prices. A large number of small businesses have formed partnerships with fintech companies to obtain credit and payment solutions that are inexpensive, such as peer-to-peer lending and direct financing (Li et al., 2019). With schemes like Jan Dhan accounts, aadhaar enrollment???, and the provision of licenses to payment banks and small finance banks, the Reserve Bank is promoting financial inclusion. Fintech firms, start-ups, the financial ecosystem, and government aid across the country are promoting the emerging environment of financial inclusion by leveraging the application of financial technology skills.

## **7. INDIA'S FINTECH AND DIGITAL BANKING FUTURE**

Sironi published a book in 2016 that contrasted the outlook of other Fintech-based industries with that of conventional banking. Currently, 40% of the population lacks access to financial services, with approximately 87 percent dependent on cash payments. As a result, India could be a hotbed for new financial technology start-ups. It



is expected that mobile use will rise from 64 percent in 2018 to 70 percent in 2019, and that Internet penetration will contribute to the growth of Fintech in India. According to the latest data from the RBI, digital transactions increased by 6.05 percent to 1.06 billion in 2017. Furthermore, according to some estimates, 90 percent of small businesses do not have access to any of the recognized financial services. These gaps in access to advanced technology have shown that India has room for Fintech growth.

## **8. CONCLUSION**

New revolutionary financial technology has left behind conventional financial approaches by enhancing financial stability, in addition to ensuring effective financial service delivery and remaining competitive in the industry (Philippon, 2017). In India, Fintech has represented a paradigm shift from banking to a relatively new industry. Fintech's growth has opened possibilities for future outcomes. Entrepreneurs should be more aware of the latest opportunities and advances in financial technology because they can help them grow their business and give them a fresh perspective on how to compete in today's market. In India, a slew of Fintech start-ups is springing up across the financial services spectrum. According to Schindler (2017), the Fintech revolution has resulted in India, and transactional economics will become the backbone. For all FIs looking to maximize their possible outcomes, this is a huge opportunity. With the rapid growth of Fintech, there is no doubt that our country has tremendous entrepreneurial potential. The efforts of the government and regulatory bodies, which are all willing to go above and beyond to facilitate advancement in the banking sector, also help the Fintech transition. For their mutual profit, banks and financial institutions must efficiently cooperate with new businesses. As a result, financial institutions face many problems, the most significant of which is the overall user experience. As the ecosystem evolves and redefines itself, financial institutions must ensure that their core product and service offerings change dramatically. Starting with the customer's onboarding, Customer standards, redefined by Fintech start-ups, demand that the experience of processing paperwork and developing new accounts improve.

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