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Fintech Pioneering Sustainability: A Closer Look at India's Transformative Journey

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ABSTRACT

Fintech has emerged as the latest focal point within the financial sector, embodying the forefront of innovation primarily driven by startups. This new wave of fintech presents a dual challenge for both regulators and market participants, as they navigate the delicate balance between the promising advantages of technological innovation and the potential risks associated with novel financial approaches. The influence of fintech has significantly altered the landscape of conventional financial institutions. It serves as an encompassing term that encapsulates the progressive technological advancements sweeping through the financial sector. As fintech continues to gain momentum, it is progressively molding the contours of the financial landscape. Over the past decade, the fintech industry has experienced remarkable growth in India, a surge catalyzed by the expansion of internet services across the nation. This paper aims to delve into various facets of this evolution, including Fintech Adoption, the Fintech News Network, the structure of the Indian Fintech Industry, the landscape of Fintech Startups in India, and the prevailing Fintech Trends. India stands out as one of the world's fastest-growing fintech markets, boasting an impressive fintech adoption rate of 87% as compared to the global average of 64%. Fintech enterprises have played a pivotal role in democratizing access to an array of financial services, such as AePS, Aadhar Pay, Remittances, and Recharges, catering to the broader population. The realm of finance is undergoing a profound and transformative shift. Digital technologies are reshaping crucial aspects including payments, lending, insurance, and wealth management – an evolution that has been expedited by the COVID-19 pandemic. While these changes are enhancing diversity, efficiency, competition, and inclusivity within financial services across several economies, it also carries the potential to heighten market concentration."

Keywords: Fintech; transformation; global average; AePS; Aadhar Pay; Remittances; Covid-19; Finance; Fintech Industry Structure.

1. Introduction

Financial technology, commonly known as Fintech, represents the latest technological advancements aimed at enhancing and automating the delivery and utilization of financial services. This innovation encompasses a wide array of technologies within the financial sector, ranging from traditional retail banking and investment services to cutting-edge concepts like crypto-currencies, such as Decentralized Finance (DeFi), which strive to improve financial literacy and education.

In our daily lives, we encounter numerous FinTech transformations, such as the convenience of withdrawing money from ATMs, using virtual cards, making seamless mobile payments, and utilizing digital wallets, among other advancements. With the rapid introduction of state-of-the-art technologies, the scope of FinTech is expanding more than ever before.

The outbreak of the COVID-19 pandemic significantly impacted businesses worldwide, causing a decline in the majority of industries. However, the FinTech sector was among the few that exhibited an upward trend during this challenging period. The pandemic triggered a substantial surge in the FinTech market as businesses and consumers turned to contactless payment methods, seeking safety and convenience. Over the past decade, FinTech has exerted a profound influence on the global financial services industry. India, in particular, has earned recognition as a robust FinTech hub on the global stage. As the entrepreneurial landscape in India continues to evolve, we can expect the development of more FinTech-focused businesses with practical use cases, gaining increased backing from investors.

Study objectives

The objective of the study "Fintech: the financial revolution in India" is to comprehensively examine and analyze the impact, drivers, challenges, and future prospects of the fintech industry in India. This study aims to achieve the following specific objectives:

1. To examine the impact and drivers of the fintech industry in India.
2. To evaluate its role in enhancing financial inclusion and reducing economic disparity.
3. To analyze regulatory frameworks and technological advancements.
4. To predict future trends and provide actionable recommendations for stakeholders.

2. FinTech Predictions & Trends

The predictions or trends that we mention here might not necessarily be new. However, their adoption rate is noticeable and we believe that their adoption rate will enhance rapidly in the year 2022.

2.1 Digital-only banking

Digital-only banks are financial institutions that provide a wide range of virtual banking services, including peer-to-peer transfers, international remittance, contactless MasterCard with free transaction fees, and the ability to buy various cryptocurrencies like Bitcoin and Ethereum, among others. These banks have witnessed a remarkable surge in popularity within a short span of time, largely owing to the unparalleled convenience they offer to customers. By eliminating cumbersome paperwork, long queues, and the need to physically visit a bank branch, digital-only banks have revolutionized the banking experience. The year 2022 is projected to witness a tremendous growth in digital-only banks. This growth is expected to lead to a significant decrease in the number of people visiting physical bank branches. According to a report, this decrease is estimated to be around 36% from 2017 to 2022, primarily driven by the increasing prominence of digital-only banks as a more efficient and user-friendly banking option.

2.2 RPA

Digital-only banks are financial organisations that offer a wide range of virtual banking services, such as peer-to-peer transfers, international remittance, contactless MasterCard with no transaction fees, and the opportunity to purchase cryptocurrencies such as Bitcoin and Ethereum. These banks have experienced a remarkable spike in popularity in a short period of time, owing partly to the unrivalled convenience they provide to users. Digital-only banks have revolutionised the banking experience by eliminating time-consuming paperwork, long lines, and the need to physically visit a bank branch. The number of digital-only banks is expected to skyrocket by 2022. This growth is expected to lead to a significant decrease in the number of people visiting physical bank branches. According to a report, this decrease is estimated.

2.3 Blockchain

The emergence of blockchain technology has fundamentally transformed the operational landscape of the FinTech industry. This innovative technology facilitates secure and reliable completion of transactions, ushering in a new era of safety. Consequently, financial institutions and banks are swiftly integrating blockchain technology into their operations to harness its advantages. According to a report from Business Insider Intelligence, more than 48% of banking professionals anticipate that blockchain technology will wield the most significant influence on the banking sector in 2022 and beyond.

A crucial aspect of blockchain lies not only in its technological advancement but also in its novel approach to decentralized finance. This approach seeks to minimize reliance on centralized procedures. Notably, once data is registered within the blockchain system, its immutability ensures an exceptionally high level of security, making any form of modification virtually impossible. The inherent security of blockchain technology guarantees the integrity and safety of stored data.

2.4 Artificial Intelligence & Machine Learning

Banks all over the world are now attempting to incorporate artificial intelligence into their operations. According to Autonomous study, AI will cut 22% of a bank's operational expenses by 2030. In other words, banks can save up to $1 trillion by implementing AI. Artificial intelligence can potentially be used to combat escalating cybercrime by detecting financial scams and threats. It can also be more customer-centric because AI and ML algorithms can record all interactions with extreme accuracy and precision. AI has already demonstrated its use in customer management with cutting-edge client service solutions such as Chatbots. It's only a matter of time before banks and financial organisations use this technology for the same purpose.

2.5 Acceleration in financial inclusion

As per the World Bank's data, nearly 1.7 billion individuals worldwide lack access to traditional banking services, often referred to as being "unbanked." The majority of these individuals reside in developing countries. However, the proliferation of mobile phone usage in these regions presents a prime opportunity for FinTech applications and branchless banking solutions. This dynamic has led to the emergence of FinTech innovations like agency banking and mobile money, which play a pivotal role in enhancing financial inclusion within these regions.

In the coming year 2022, this trend is poised to escalate further. The innovative technologies inherent in FinTech applications are positioned to extend banking services to segments of the population that are unbanked, underserved, or lack literacy in financial matters. This progression will significantly augment financial inclusion by simplifying, expediting, and streamlining access to financial services for those without traditional banking connections.

2.6 Biometric security systems

FinTech and mobile banking services have made banking accessible to everyone. However, it is also true that it has caused many security issues, as criminality related to banking is on the rise. This necessitates the implementation of required security measures by FinTech firms. Biometric security systems have evolved as a dependable and flawless security tool that raises the bar. It gives individuals and institutions assurance that their data is safe and secure. The biometric sector is currently undergoing transformation as a result of fundamental upheavals. FinTech and mobile banking services have made banking accessible to everyone. However, it is also true that it has caused many security issues, as criminality related to banking is on the rise. This necessitates the implementation of required security measures by FinTech firms. Biometric security systems have evolved as a dependable and flawless security tool that raises the bar. It gives individuals and institutions assurance that their data is safe and secure. The biometric sector is currently undergoing transformation as a result of fundamental upheavals.

2.7 Open banking

"Another intriguing and groundbreaking technology is open banking. It connects banks and FinTech by enabling data networking across institutions. PSD2 (Second Payment Services Directive) is related to open banking. Open banking requires banks to release data in a standardised and safe format, which facilitates information sharing across multiple authorized organisations online. Not only that, but it also allows third-party applications to govern consumers' banking and financial information through data exchange using AI and APIs. Many industry analysts anticipate that open banking will completely disrupt the financial industry by 2022. And this is not a random guess; there are numbers to back up the estimate. Open banking earned approximately $.29 billion in 2008 and is predicted to reach $43.15 billion by 2026 at a CAGR of 24.4%. Customers can manage their financial accounts more easily with open banking partnerships since they get a consolidated view of their accounts. This is why having access to open banking products can stimulate greater long-term wealth building, smarter financial decisions, and debt reduction. As a result, many stakeholders will profit, including FinTech workers, banking institutions, API industry figures, consumers, and underserved communities. Reg-Tech : "

"**Reg-Tech** is an abbreviation for Regulatory Technology, which is described as the use of technology to handle the regulatory process in the financial industry. Reg-Tech's primary functions include reporting, monitoring, and compliance. Reg-Tech provides firms with the ability to use innovative software to simplify compliance with existing regulations and legislation. The development of digital products has also resulted in an increase in money laundering, fraudulent activities, cyber intrusions, and data breaches".

3. Significance of Fintech in Indian Context

Investment in Indian FinTechs has been on the rise, growing at an impressive Compound Annual Growth Rate (CAGR) of 26% over the past four years. However, the pace of growth is expected to accelerate significantly from 2020 onwards, driven by the increased demand for digital services in the aftermath of the pandemic. The sector has witnessed a remarkable uptick, with 150 agreements being made every quarter, indicating a robust Fintech growth story in India. In the past, the majority of investments in the Fintech sector were concentrated in Payments and Alternative Finance categories, accounting for over 90% of the total investment flows in 2015. However, there has been a notable shift in investment patterns, leading to a more balanced and equitable distribution of investments across various sectors. Emerging sectors such as InsurTechs, WealthTechs, and others are now attracting significant investment interest.

India takes pride in nurturing 23 Fintech companies that have achieved the coveted "Unicorn Status," signifying their remarkable valuation and potential for growth. In the realm of startups, Fintech holds a strong position, constituting one-fifth of all startup unicorns, showcasing the sector's prowess and attractiveness for investors.

India recorded the largest absolute number of real-time transactions in the world; India's real-time transactions crossed 48 Bn, which is 6.5 times of the combined volume of the world's leading economies: U.S., Canada, U.K., France and Germany in 2021, resulting in cost savings of ~$12.6 Bn for Indian businesses and consumers in 2021.

In Q3 of 2022, India witnessed a remarkable surge in digital payments, recording more than 23 billion transactions valued at INR 38.3 lakh crore. Particularly noteworthy was the unprecedented growth of UPI transactions in semi-urban and rural areas, skyrocketing by 650%. Furthermore, assisted financial transactions at retail counters in these regions saw impressive growth rates, with values rising by nearly 25% and volumes increasing by 14% throughout 2022.

The digital investment market in India is projected to reach a value of $14.3 billion by 2025, displaying a robust 5-year CAGR of 22.4% from its $6.4 billion valuation in 2021. Moreover, India's digital payments market is on the cusp of a major shift, expected to expand over threefold from its current $3 trillion to a whopping $10 trillion by 2026. This growth trajectory will make digital payments account for nearly 65% of all transactions by

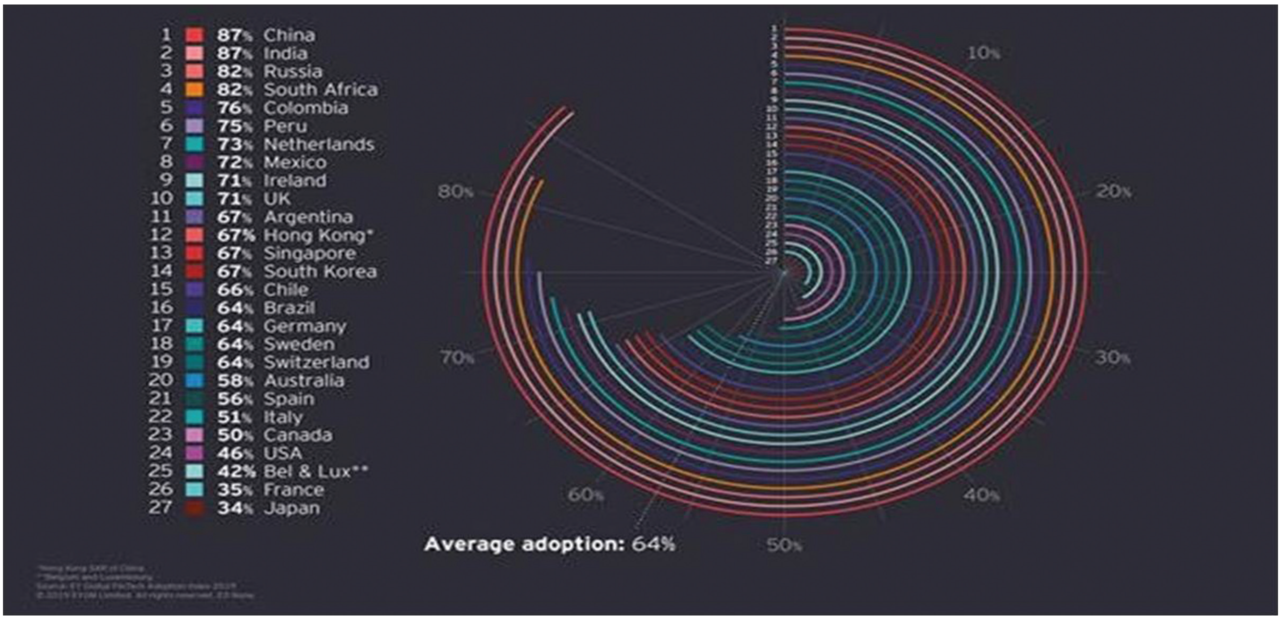

Figure 1. Global consumers have adopted FinTech
(**Source:** https://www.ey.com/)

value, meaning that 2 out of every 3 payments will be conducted digitally.

The Fintech revolution in India is the culmination of years of diligent efforts in establishing essential foundations and implementing vital initiatives, propelling the nation into the forefront of digital financial innovation.

4. Growth of FinTech Being Driven by Government Initiatives

Jan DhanYojana: The world's most extensive financial inclusion initiative, "Jan DhanYojna," has facilitated the enrollment of more than 450 million beneficiaries into new bank accounts. This initiative has enabled direct benefits transfers and improved access to a wide range of financial services applications, including remittances, credit facilities, insurance, and pension schemes.

This has enabled FinTech players to build technology products to penetrate the large consumer-base in India.

India Stack: India Stack is a groundbreaking set of open APIs (Application Programming Interfaces) and infrastructure that facilitates the development of digital applications and services in India. It was conceptualized to create a secure, paperless, and presence-less digital ecosystem that enables seamless integration of various services, making them more accessible to citizens.

It has transformed the way digital services are delivered and accessed in India. It has enabled the growth of various digital businesses, such as fintech, e-commerce, and government services, by providing a secure and interoperable framework. With India Stack, individuals can access services and transact with ease, and businesses can innovate and scale their operations more efficiently.

UPI (Unified Payments Interface): Unified Payments Interface (UPI) is a real-time payment system developed by the National Payments Corporation of India (NPCI) that enables seamless and instant fund transfers between different banks through mobile devices. UPI facilitates the interbank transactions by instantly transferring funds between the sender's and recipient's bank accounts, making it a convenient and efficient mode of payment. Users can link multiple bank accounts to a single mobile application and conduct transactions like person-to-person (P2P) transfers, bill payments, and online shopping. UPI has played a significant role in advancing digital payments and enhancing financial inclusion in India.

"UPI, with over 338 banks registered under the platform, recorded more than 6.28 billion transactions in July 2022 worth 10.62 lakh crore."

Digital Rupee: "India launched its Central Bank Digital Currency (CBDC) or digital rupee or e-rupee recently. It is an electronic version of cash and will primarily accelerate the growth of the FinTech market in India."

5. Issues Associated with the Fintech Industry

Cyber security Challenges: Cyber-attacks refer to malicious and unauthorized attempts to gain access to computer systems, networks, or data, with the intention of causing harm, stealing sensitive information, or disrupting normal operations. These attacks are carried out by cybercriminals, hackers, or state-sponsored actors using various techniques and tools to exploit vulnerabilities in computer systems and exploit weaknesses in cyber security defenses.

Regulatory Challenges: Regulation poses challenges in the evolving realm of FinTech, particularly concerning cryptocurrencies. The Indian government is presently pursuing a cautious observation strategy in relation to cryptocurrencies. The lack of a regulatory framework has amplified the potential for fraudulent activities, jeopardizing investor safety and the flow of funds within the economy.

Given the diverse array of offerings within the FinTech landscape, devising a unified and all-encompassing approach to address these issues proves to be intricate.

Financial Illiteracy: The lack of financial literacy is also a problem. Only 27% of Indian adults – and 24% of women meet the minimum level of financial literacy as defined by the Reserve Bank of India.

Illegal Digital Lending: Surveys revealed that over half of these digital loan providers were operating without proper authorization, engaging in illegal practices. Disturbingly, numerous apps took advantage of the widespread lack of financial literacy among users, charging exorbitant interest rates that reached as high as 500%. Such practices led to financial exploitation and put borrowers at significant risk of falling into debt traps.

What should be the Way Forward?

Consumer Awareness: Apart from implementing technological safeguards, providing education and training to customers will also contribute to democratizing fintech and enhancing resilience against cyber attacks.

Effective Regulatory Framework: Promoting transparency and implementing robust regulations will progressively enhance the fintech industry, thereby fostering the Indian economy to realize its full growth potential by driving the engine of economic expansion.

It is imperative to adopt a more positive stance towards acknowledging the pivotal role that FinTechs fulfill in advancing India's financial inclusion objectives. Establishing clear financial objectives is necessary to eliminate existing uncertainties while granting FinTechs the flexibility required to innovate and introduce novel propositions.

Maintaining Data Privacy: A potential approach to establish the regulatory structure governing data management for Fintech enterprises involves a collaborative effort between the Ministries of Corporate Affairs and Electronics and Information Technology.

In order to safeguard consumer rights, Fintech firms ought to be mandated by the government to guarantee that the data collected from consumers is strictly employed to fulfill their specific needs, with no utilization for any other purposes.

Conclusion

Driven by advancing technology, evolving cultural norms, and supportive regulatory environments, FinTech has transcended its borders and made a global impact. Experts predict that future technological innovations will propel the market's expansion even further, leading to a revolutionary transformation in the creation, delivery, and consumption of financial products and services in the coming years, as envisioned by FinTech leaders. It is anticipated that FinTech will amass an impressive $1 trillion in assets under management (AUM) in the near future.

In the past five years, digital lending has witnessed a significant influx of investments, with more than $9 billion poured into the sector. Forecasts indicate that the market is poised to expand further, projecting a book size of $515 billion by the year 2030.

Buy Now Pay Later (BNPL) has successfully transitioned into the mainstream and is experiencing a notable upward trend. Its growth is not limited to the B2C market but is also gaining traction in the B2B payments landscape. Wealth tech innovation is rapidly evolving to cater to a new class of investors. Emerging asset classes like Non-Fungible Tokens (NFTs) and Crypto currencies continue to attract investor interest. The insurance sector holds vast untapped potential, and the introduction of innovative InsurTech models has facilitated increased financing activity. By 2030, the insurance financing market is expected to reach $88 billion. Health insurance innovation, supported by the government's digital initiatives, will be a driving force behind market growth.

The adoption of digital financial services is on the rise, with notable attention drawn to global neo-banking players like Revolut and Tide. However, established domestic players are also stepping up their game, ensuring a level playing field in the financial services sector. Regulators are actively fostering innovation through various means, including regulatory sandboxes, novel distribution strategies, and the introduction of innovative financial products. This encouraging regulatory environment is further propelling the growth and evolution of the financial technology landscape.

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