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Scientific article

Paradigm shift in fintech landscape: a perspective from the Indian marketplace*

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In the past decade the Financial Technology (FinTech) industry globally has moved evolved significantly enough to enter mainstream in financial services domain. The tailwinds showcase those lines between technology and business are ever-blurring, and players across the strata have realized the importance of technology innovation and are leveraging it to build novel products and solutions for their customers. India has been one of the pioneers of this trend with 2000+ FinTech startups and more than 20 billion dollars' worth of reported investments. Major drivers of the growth are attributed to macro-economic headwinds, rapid evolution in technology landscape and drastic change in customer demand. Alongside, there are equally interesting challenges to cope with and they are primarily stemming from security risks, rapidly changing regulatory framework, lack of adoption and demographic opportunities. This study relies on the qualitative approach by reviewing contemporary published research articles, reports published by key players of fintech industry, government's regulatory organizations, and leading newspapers. We find that globally FinTech has moved from startups to a ubiquitous expression for technology-based innovation in financial services. We increasingly see more collaboration and innovation driven by incumbent banks, prominent technology players, and even regulatory organizations in the market. This is especially true for the Indian FS market, as is evident from a few key trends we have tracked. Indian FinTech ecosystem is unique in the way that it is a playground for a variety of players and young FinTech startups are leading the charge and traditional banks countering with improved digital offerings. While there will be differences in the paths each segment and stakeholders within the FinTech industry take, the key success factors will remain focused on customer experience, innovation, collaboration and speed to value with eye on regulatory landscape. It will be exciting to watch where India is headed as the rising power of India as producer as well as consumer of Fintech tools, the key drivers behind this massive growth and trends shaping Indian Fintech industry.

Keywords: Financial Technology, FinTech, India, Tech Trends, Startup.

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Научная статья

Смена парадигмы в финтех-ландшафте: взгляд с индийского рынка*

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За последнее десятилетие индустрия финансовых технологий (FinTech) во всем мире значительно продвинулась и стала основной в сфере финансовых услуг. Границы между технологиями и бизнесом стираются, и представители разных направлений признают важность технологических инноваций для создания новых продуктов. Индия была одним из пионеров этой тенденции с более чем 2000 финтех-стартапами и инвестициями на сумму более 20 миллиардов долларов. Основные факторы роста связаны с макроэкономическими показателями, быстрой эволюцией технологического ландшафта и резкими изменениями потребительского спроса. Наряду с этим существуют вызовы, связанные, в первую очередь, с рисками безопасности, быстро меняющейся нормативной базой, демографическими проблемами. Это исследование основано на качественном подходе путем проведения обзора современных исследовательских статей, отчетов, опубликованных ключевыми представителями финтех-индустрии, государственными регулирующими организациями и ведущими газетами. В рамках исследования обнаружена тенденция

применения технологических инноваций не только в небольших наукоемких компаниях, но и в организациях различного уровня в сфере финансовых услуг. В финтех-индустрии наблюдается расширение сотрудничества в области инновационной деятельности среди банков, известных технологических компаний и регулирующих органов. Это особенно актуально для индийского рынка ФС. Индийская финтех-экосистема уникальна и является площадкой для множества организаций. При этом молодые финтех-стартапы лидируют, а традиционные банки противостоят, используя улучшенные цифровые предложения. Несмотря на то, что пути каждого сегмента и заинтересованных сторон в отрасли FinTech будут различаться, ключевые факторы успеха по-прежнему будут сосредоточены на клиентском опыте, инновациях, сотрудничестве и скорости окупаемости с учетом нормативно-правовой базы. Планируется продолжить наблюдение за движением Индии в качестве производителя и потребителя инструментов Fintech, ключевых факторов, стоящих за этим массовым ростом и тенденциями, формирующими индийскую индустрию Fintech.

Ключевые слова: Финансовые технологии, FinTech, Индия, Tech Trends, Стартап.

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Introduction

The financial world is evolving rapidly with the innovations in financial and technological instruments. Financial and technological activities are driven by a range of demand-side and supply-side factors. Regulatory factors can play a role, but in general, regulatory arbitrage does not seem to be a primary driver of financial and technological adoption to date, at least at an aggregate level. Financial inclusion is a one of the major driving forces to promote financial and technological innovation to provide secure, cost-effective, user-friendly, and evenly accessible to people of varied social, territorial, and economic levels. Poor financial inclusion causes poor reliable means of making and receiving daily payments which leads hinderance in their upward mobility and constant dependency on vicious cycle of access to finance through corrupt means. This degree of financial inclusion determines how well people with skill and knowledge to make the right financial decisions and participate in the financial system are shaping the future of their ecosystem.

The role of financial innovation in the economy can be explained in a way that financial innovation expands economic activities by promoting financial inclusion, easing a financial transaction in international trade, permitting remittance, and enhancing financial efficiency. emittance, and uplifting financial efficiency. According to few studies done by researchers that financial innovation promotes the quality of financial products and services [9, 10], accelerates the financial development process [11], improves capital accumulation and allocation processes [12], and increases the level of efficiency in financial institutions [13].

Today's financial markets are branded by their rapid innovation and an evolving business environment, along with longer-term changes in customers' requirements and profiles which leads a greater array of participants, products, and distribution channels. In such an environment, regulatory measures that are overly detailed or too restrictive may cause alterations in the provision and pricing of financial resources and may limit the ability of financial institutions to respond to changes in the competitive environment, which may render them unprofitable or unsafe.

In the context of India, Fintech advancements have been observed in last two decades with advent of mobile phones, internet services, ATM machines, online payments systems, remote access of various financial market has transformed the face of Indian financial system and these technical advancements moving further with the help of technological innovations in the field of financial market. According to a report of [14], in India percentage of digitally consumers who use FinTech was 87% which was roughly 1.2 times more than the global average of digitally active FinTech consumers. This report also revealed the percentage of digitally active Fintech consumers in India and the global average Fintech consumers based on the few selected financial services they access by using different Fintech applications.

Literature Review

Fintech is the latest buzzword in the area of finance sector; the latest evolution of Fintech, led by startups, poses challenges for regulators and market participants alike, notably in balancing the potential benefits of innovation with the possible risks of new approaches in the finance sector [1]. The speed of innovations in financial services domain is driven by digital ecosystem, which has opened up opportunities for all the players. On the global scale of ecosystem, the surge in the volume and amount of digital transactions has led to a shift in the dynamics of the payment industry towards the digital medium [2].

Fintech Landscaper in India

The growth of FinTech (Financial Technology) has taken center-stage in the global financial services industry in the last decade. Enablers, such as exponentially growing computing power, widespread internet penetration, and increased internet speed and coverage, have allowed FinTech solutions and startups to penetrate the global markets deeply, widely and rapidly. In addition, increased demand for inclusive financial services, customer expectations, and the business need to reduce costs while providing faster, safer, and more reliable services underpin the rise and growth of FinTechs. Real-time payments, faster disbursement of loans, investment advisory, transparent insurance advisory and distribution, peer-to-peer lending, and several other services that traditionally required human capital are now rapidly becoming a part of the digital-native FinTech landscape. While the exact number of FinTech players in the world would be anybody's guess, one thing the industry would agree on unanimously is India's significant contribution in adding startup numbers, funding values, userbase, and volumes of transactions to the global FinTech landscape. India has the world's second biggest fintech hub with 2,565 startups operating currently, there were only 737 in 2014. India's largest share from fintech startups is through 'payments' and is followed by lending, wealth tech, personal finance, insurtech, regtech and others [3].

Rise of India as one of the Fintech Superpowers

In line with global trends, India's FinTech ecosystem has seen tremendous growth over the last few years, making it one of the largest and fastest-growing FinTech markets. According to S&P Global Market Intelligence [15], despite the pandemic Asia-Pacific managed a steady inflow of investments. It saw a 33% decline in FinTech investments in 2020 to \$6.8 billion from \$7.3 billion in 2019. On those lines, the number of deals in 2020 declined by 18% to 427 transactions. Conversely, in 2019, total FinTech funding in the region had two major deals of JD Technology (\$1.9 billion) and One97 Communications (Paytm, \$1.0 billion). Barring these, the comparative decline in 2020 was a marginal 6%. In the last quarter of 2020 (4Q20) [15], APAC FinTech deals volume and value bounced back to the highest-level for the year at \$3.14 billion across 113 deals (excluding Grab and GoJek), the highest quarterly funding activity for the year, pointing to a bright outlook for the fundraising environment in 2021. In 2020, India topped among Asia-Pacific (APAC) countries in FinTech investment [15] 121 deals amid COVID-19 led disruptions in the funding ecosystem. A large portion of the country's deal value came from PhonePe's \$788 million in aggregate fundraising over three transactions. Notably, investments into the FinTech landscape of India were almost double that of China. According to the Tracxn database, the total volume of FinTech funding till June 2021 has been \$20.8 billion, with 36% of the funds raised in the last two years. 2020 saw a dip in funding by 26.7% to US\$ 3.0 billion. A similar trend was observed in the number of new FinTech startups as well that dipped by 20%. Payments remain the biggest funding segment (48% of all funded startups), followed by alternate lending (28%).

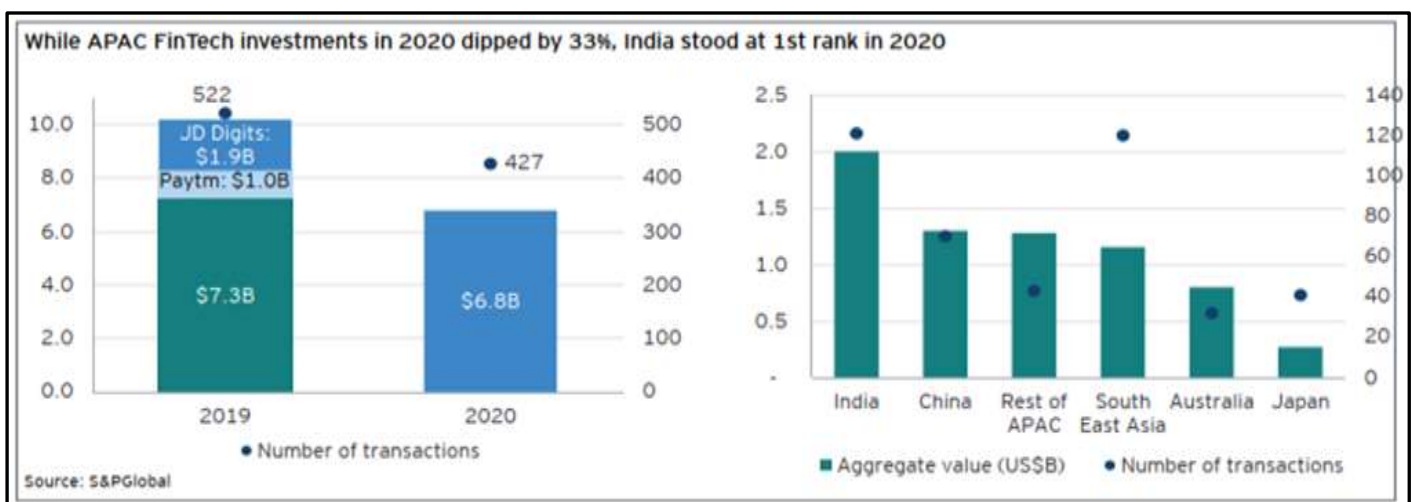


Figure 1: Fintech Growth in India in year 2020
 Source: S&P Global

India has produced 16 FinTech unicorns as of June 2021. A 2020 NASSCOM report [16] had predicted that India would have 50 tech unicorns by the end of 2021. By Jun 2021, India had already surpassed that number, and in this prestigious pool of startups, every fourth startup is a FinTech.

Key Drivers behind the Growth

India is amongst the fastest growing FinTech markets in the world, where structural enablers to set up and incubate FinTech companies have come together robustly. In EY’s 2019 study [17], India ranked the second highest globally in FinTech adoption after China. As the FinTech ecosystem matures, the top growth strategies include expanding into new markets, technology investments, improving operating efficiencies, and ecosystem partnerships. India’s evolution as a progressive FinTech nation is driven by the following factors:

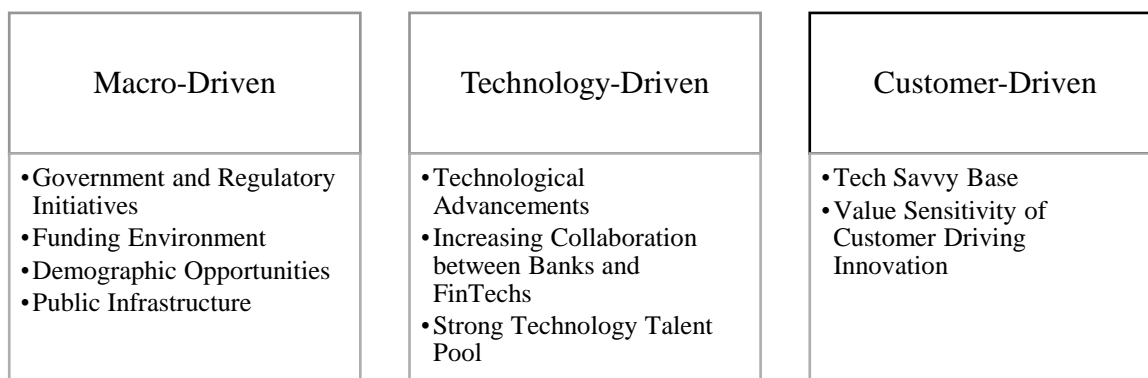


Figure 2: Key Growth Drivers around Indian FinTech Sector
 Source: EY research Report 2021

- **Macro-driven:** The growth of the Indian FinTech market is supported by several macroeconomic factors such as India’s booming economic growth with rising disposable income, large unbanked population, government and regulatory initiatives, expanding young adult population, improving internet access and smartphone penetration, and a fast-growing e-commerce marketplace. Some of the other macro factors include: Government and regulatory initiatives, improved funding environment, Demographic opportunities and Public Infrastructure.
- **Technology-driven:** The overall financial services market is undergoing a major transformation leveraging new and cutting-edge technologies such as blockchain, AI, ML, and cloud infrastructures. Three key technology factors driving FinTechs’ growth include the following: Technological advancements, Increasing collaboration between banks and FinTechs, and A strong technology talent pool. Blockchain technology must find the **most** viable options as modern businesses arise every day [4].
- **Customer-driven:** The financial services industry has evolved from transaction-based services to customer-centric service offerings. FinTechs’ ability to create tailored and niche-focused solutions from scratch provides them an edge in the industry. The financial services industry recognizes the combined business impact of digital transformation and customer experience focus.

Major Challenges Though the FinTech ecosystem has grown rapidly in the country, it has faced its share of hiccups and challenges. Some of the key issues and challenges the industry faces with respect to past and future growth is tabulated below. Some of the major challenges include:

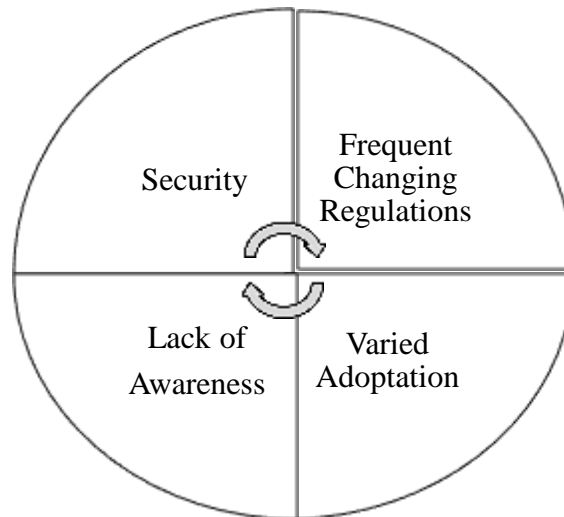


Figure 3: Key Challenges Fintech Sector Facing in India
Source: Own drawing inspired by EY research Report 2021

- **Data security and privacy risk:** Data leaks, platform downtimes, and information theft has become quite rampant in the financial services space. Mechanisms to control risk and comply with regulatory requirements will be the key to success. While cloud-based services are considered a safe storage system, a lack of appropriate security measures will lead to confidential financial information becoming corrupted [5].
- **Varied adoption:** It's not easy for every type of business to adopt FinTech. It is especially complicated for an economy like that of India's which is dominated by MSMEs that largely sit on the fence of digital adoption.
- **Rapidly changing regulations:** India needs to get to FinTech regulatory maturity fast. Regulatory compliance comes with a cost, and frequent changes do not help to offer business confidence. A few regulations, such as regulations for investment exits, cryptocurrency, payment regulations, data, infrastructure security, and consumer protection, are still evolving, which complements the dynamic nature of FinTech industry.
- **Lack of financial literacy and awareness:** More than 70% population [18] of India lives in the villages, and the use of these FinTech platforms is largely concentrated in the urban segment. This sector needs to make its way to smaller cities and towns with and through awareness and financial literacy.

Methodology:

This is a review article on Fintech development, its future prospects, and its implications on the financial market of India. Since there are not enough quotative data is available about the recent development of fintech industry of India for performing empirical analysis, it is imperative to rely on the qualitative approach by reviewing contemporary published research articles, reports published by key players of fintech industry, government's regulatory organizations, and leading newspapers. Hence, most of the key insights of this article have been adopted from these sources provided by the industry players, regulatory organizations, and leading newspapers. However, this article helps not only academic readers but also common readers to understand the infrastructure, developments, implementation, social and regulatory obstacles, adaptation, and future prospects of Fintech industry in Indian Financial Market.

Discussion

FinTech, globally, has moved on from being a term used to describe just FinTech startups to a ubiquitous expression for technology-based innovation in financial services. We increasingly see more collaboration and innovation driven by incumbent banks, prominent technology players, and even regulatory organizations in the market. This is especially true for the Indian FS market, as is evident from a few key trends we have tracked. Based on the referenced research publications around select industries, key trends can be identified that are shaping the Indian FinTech landscape.

Key Trends Shaping the Fintech Sector in India:

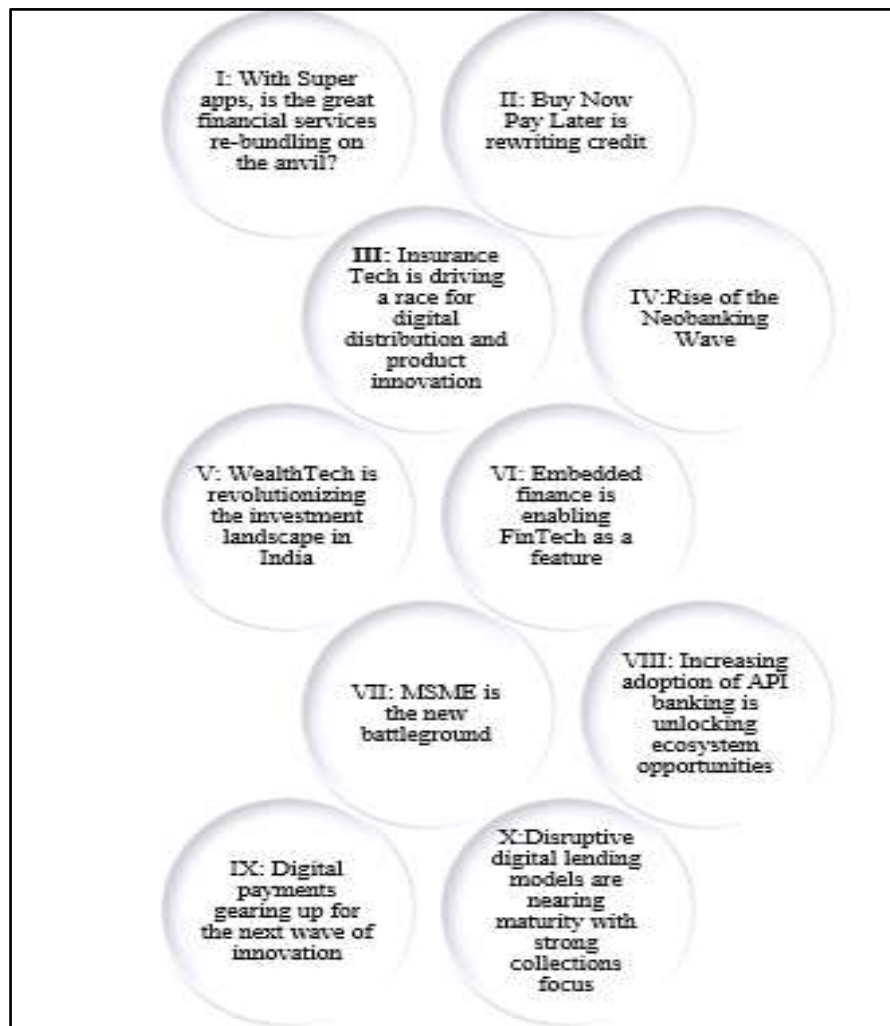


Figure 4: Key Trends Shaping the Fintech Sector in India
Source: Own drawing inspired by EY research Report 2021

I. Super apps are paving the way for the great financial services re-bundling

Globally, the initial wave of FinTech startups' value proposition was focused on becoming the best of breed in one particular segment of financial services, be it lending, payments, wealth management or insurance. Through unbundling traditional banking, insurance, and wealth management services, we see pure play payment companies, credit players, and wealth solution startups with great UI and UX propositions trying to become best-in-class. However, as FinTechs matured with a strong user base and product-market fit, they identified more opportunities to diversify revenue streams, giving rise to Super apps. They are digitalized to serve the different roles from regulatory adherence to consume service and product growth, which have disturbed their businesses [6].

II. Buy Now Pay Later is rewriting credit

Buy now pay later (BNPL) is a short-term financing solution that allows customers to pay for their purchases at a future date, usually interest-free. BNPL offers frictionless credit during check-out as the key value proposition for consumers. Merchants are attracted to the value propositions of higher sales, improved cash flow, and reduced cart abandonment. Notably, BNPL sits on the cross-section of payments and lending product offerings because of the short-term and interest-free (for few weeks) payment-enabling characteristics.

The BNPL growth is a global phenomenon, but the India story presents an exceptional market opportunity. The existing microloan concepts and rapidly growing FinTech adoption will make India the 2nd largest BNPL market globally by 2025. According to Global Payments Report by Worldpay from FIS, BNPL is emerging as the fastest-growing e-commerce digital payment method in India, estimated to capture 9% of the total e-commerce market share by 2024.

III. Insurance Tech is driving a race for digital distribution and product innovation

With a 3.76% insurance penetration (insurance penetration is calculated as percentage of insurance premium to GDP), India ranks lowest among its key peer countries like Brazil, China, and Australia (Economic Survey 2020-21). However,

from a growth perspective, the 1.3 billion population with a growing middle class, favourable regulatory policies, and significant economic activity present considerable potential for the Indian insurance market to grow. According to IRDAI annual report 2019-2020, India's total real premium growth was 6.9%, vs. 2.9% of the world average. Life insurance players' share stood at ~75% of the total premium volume.

The technological developments to date are helping insurance companies improve operations, upgrade propositions, and drive innovation [7]. Traditional insurance players need to simplify product portfolio, strengthen their direct distribution and assisted channels in competing with emerging pureplay digital insurance players.

IV. Rise of the Neobanking Wave

Neobanks are new-age digital-only banking service provider players that are more nimble than traditional banking models. Globally, Neobanks started with the idea of using technology to unbundle the banking industry. Following the global trend, over the last few years, the number of Neobanking platforms, as well as the global investments in the sector, has risen consistently in India.

In India, the current regulatory landscape allows only a partnership route for Neobanking startups. Notably, some banks such as ICICI, RBL, Equitas and IDFC first have built API stacks to capitalize on this partnership opportunity. The incumbent and Neobank partnerships typically involve contractual aspects of revenue sharing, activity distribution, and customer ownership arrangement. A pitfall for new Neobanks is to find suitable banking partners beyond the 3-4 major banks that every player seems to approach. This much needed partnerships requires API stack in place to enable them, which acts as an impetus to the industry.

V. WealthTech is revolutionizing the investment landscape in India

WealthTech is categorized as products and service offerings ranging from expense management apps, investment platforms, trading tools, digital financial advisory, financial research tools, and white label software solutions for investors. WealthTech players leverage advanced technologies such as AI, ML, and analytics to transform traditional investment and wealth management services. India has, over the years, witnessed a rise in working and affluent populations and, accordingly, has seen massive advancements in the WealthTech space.

According to RedSeer Consulting estimates, the Indian WealthTech market size was \$20 billion in 2020. It is expected to reach \$63 billion by 2025, fuelled by an increasing retail investor base (4 million investors in 2020). The retail investors base is expected to grow by 3x to reach about 12 million by FY25. The availability of various modes and assets for investment is making the WealthTech ecosystem interesting. For example, Zerodha and Upstox like companies enable zero brokerage equity investments, while apps such as ETMoney enable easy discovery and purchase of various types of mutual funds. Hybrid-advisory platforms such as Arthayantra offer tailored portfolio analysis and advice for mutual fund investments.

Regulation will play a huge role here, and this would mean that there would be increased regulatory pressures. Robust in-app authentication and overall system infrastructure security will play a crucial role in keeping customer confidence and building loyalty.

VI. Embedded finance is enabling FinTech as a feature

Embedded finance, also termed embedded banking, is the seamless integration of financial services into a non-financial service platform. From the business point of view, embedded finance enables businesses in the MSME, B2C, and B2B segments to monetize their customer base for additional revenue streams, increase the customer Lifetime Value (LTV), and vertically scale [19] their product offering. It could become a massive market with an estimated \$200 billion global Opportunity [20] by 2025. Amid this growth trend, compliance with data storage laws, privacy concerns, IT regulations, cybersecurity concerns, and early days for customers to use financial services from non-financial services companies remain the key challenges facing embedded finance players. Since COVID-19, the digital adoption of financial services has accelerated across consumers, businesses, and financial services incumbents, which has forced licensed B2C FinTech to engage with non-banking players and offer financial services to consumers.

VII. MSME is the new battleground

The Micro Small and Medium Enterprises (MSMEs) sector is a significant contributor to the country's socio-economic development. The sector currently contributes around 30% towards the Indian GDP through its domestic and international trade. The Indian government aims to increase this share to 40% in the coming years, thus making it a major growing sector. India has approximately 6.3 crores [21] (63 million) MSMEs, and a large number of these tend to be informal, share limited public information, and are relatively less aware of the bank requirements. All of this results in higher information asymmetries, impeding bank lending to the sector. As per an RBI report, India's total commercial lending exposure stood at \$919.1 billion [22] as of June'20. MSME segment holds only one-fourth (25.3%) of the total lending with \$232 billion of credit exposure. Furthermore, the estimated debt requirement for Indian MSMEs points to an immense credit gap of approximately \$219 billion [23], exceeding the available supply of finance from the formal sector.

VIII. Increasing adoption of API banking is unlocking ecosystem opportunities

API banking is on the rise across the globe with Europe leading the way. API adoption enables banks and FinTech alike to innovate and facilitate solutions to meet customers' digital needs, offer new products and services, thus creating new revenue streams.

Multiple internal and external drivers are making it imperative for organizations to innovate and adopt this strategy to meet rising digital product demands, integration limitations of legacy systems, threats posed by FinTech adoption, large, underserved customer segments, and cost-efficiency pressures due to shrinking traditional interest-based revenue streams. Globally, API banking has enabled early-adopters to launch a bevy of innovative use-cases across banking products and customer segments. In India, API banking is relatively in the nascent stage, however, we have seen some great success stories by the likes of ICICI Bank, Setu, Axis Bank and RBL Bank.

For the ecosystem to reap significant benefits of API Banking, it is vital for more players to collaborate, and leverage their complementary strengths, thereby, enhancing the customer experience much better than they may do on their own.

IX. Digital payments gearing up for the next wave of innovation

Digital Payments in India has seen widespread adoption and grown significantly, especially over the past few years (~60% CAGR during FY16-FY20). Several key drivers that have contributed to this growth include the following:

- Improved mobile and internet penetration
- Regulatory and government policy push towards financial inclusion
- Emergence of low-cost real-time payment methods
- Rising tech-savvy millennial population
- A vocal FinTech community that is driving the innovation agenda
- COVID-19 induced need for contactless means of payments

These drivers have translated into widespread adoption and growth of diverse payment methods and companies, including gateways, wallets, bill payment solutions, POS, P2P payments, and software and API solution players.

X. Disruptive digital lending models are nearing maturity with strong collections focus

The rise of FinTech has introduced digital transformation of the "bricks-and-mortar" banking model and dramatically changed the way financial services are delivered. We also present several future questions and directions that are worthy of investigation for researchers and policy-makers [8]. India's digital lending market has grown tremendously in the past few years to serve the large financing gap across retail and MSME, particularly for thin file customers. The Indian digital lending landscape is replete with innovative FinTech products that cater to a particular sub-segment of customers or provide a new method of distribution, underwriting, or servicing.

As business models are maturing and we realize the impact of the pandemic, some FinTech lenders might fall by the wayside or we may see consolidation in the market. FinTechs are still dealing in significantly small-ticket loans vs. banks' average ticket size for personal loans. It is expected that the value and volume of FinTech loans would increase as their underwriting models achieve maturity.

Findings

The Findings show that the Indian FinTech ecosystem is unique in the way that it is a playground for a variety of players. We have young FinTech startups leading the charge and traditional banks countering with improved digital offerings. We also have BigTech players entering the foray through payments and other products. There are also government and regulatory initiatives aplenty to help the ecosystem grow.

The Way Forward

Growth of technology startups in general is seeing an unprecedented spike in the past few months, with FinTech being a key sector. India's booming FinTech industry is poised to welcome a hoard of new unicorns, soonicorns and smaller startups as well as traditional incumbents who are keen on innovating with them. While there will be differences in the paths each segment and stakeholders within the FinTech industry take as we have explored above, there are certain takeaways and implications that hold true for everyone:

1. **Experience not product** - Financial offerings are invisibly embedded into the customer experience/journeys such that it meets the actual need of the customer will be the north star around which all innovation and partnership will have to be built.
2. **Continuous innovation** - A key focus area, not just to expand penetration, but to avoid being usurped by new players. Financial products and services, and their distribution in particular is changing rapidly.
3. **Swift collaboration** - Enable swift and easy collaboration with other players in the market stakeholders need to invest in and create technology (API, SDKs, open-source stacks) and policy (legal and business templates) rails.

4. **Speed to market** - With innumerable checks and balances of the financial world it is a hard task to be nimble and offer an evolving suite of products and services tailored to customer preferences.

5. **Eye on regulatory and government initiatives** - The Indian FinTech story particularly in payments has been uniquely driven by regulatory and government initiatives like UPI. Many other such initiatives like AA and OCEN are in the works and can provide important stimulus for other stakeholders in the ecosystem to flourish.

Conclusion

Indian Fintech industry is emerging out of its concept and financial technology innovation in India is catalysing its growth to the betterment of the Indian economy. As the fintech services are becoming more secure and user-friendly, they are reducing their costs to get better competitive advantage in a highly competitive landscape. The Indian FinTech ecosystem is unique in the way that it is a playground for a variety of players. We have young FinTech startups leading the charge and traditional banks countering with improved digital offerings. We also have BigTech players entering the foray through payments and other products. There are also government and regulatory initiatives aplenty to help the ecosystem grow. It will be exciting to watch where the industry is headed and witness the outcome of each of types players.

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