



ROLE OF FINTECH IN TRANSFORMING INDIA'S BFSI SECTOR : A CONCEPTUAL STUDY

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Abstract: Technological advancements within the BFSI Sector (Banking, Financial Services and Insurance) are strategically aimed at providing an elevated and more satisfying user experience for customers. This fundamental objective has played a pivotal role in the progress of financial technology (Fintech), a field that has been closely monitored and scrutinized globally. In the Indian scenario, there has been a notable acceleration in the evolution of digital finance, especially following the significant event of the 2016 demonetization of India's banknotes. This transformative period has made rapid changes and an increased reliance on digital financial solutions. The examination of various sub-technologies within the Fintech landscape reveals their pivotal roles, suggesting a growth trajectory that is poised to outrun traditional financial models in the coming years. This study is an attempt to provide a thorough review of recent trends within the Indian economy, the financial services sector, and the profound impact and significance of Fintech. By exploring these facets, the study seeks to enhance our understanding of the ongoing shifts in the financial landscape and its role in shaping the future of financial services in India.

Keywords: Financial Technology (Fintech), Indian Economy, BFSI Sector, Digital Transformation, Demonetization

INTRODUCTION

Fintech, short for financial technology, involves the integration of technology into the provision of financial services and solutions. It is particularly embraced by financial institutions to enhance their operational efficiency and deliver technologically advanced and improved financial services to their customers. It has the capability to drive improvements within the financial sector's effectiveness, to deliver more targeted and individualized services, and enhance financial accessibility in emerging economies. Fintech companies are adept at simplifying complex financial and banking services, providing effective solutions to their clientele. In recent years, the Indian banking and financial services (BFSI) sector has witnessed a significant fintech boom. While traditional

players in the Indian BFSI industry have adopted new financial technologies, a multitude of emerging players have also entered the fintech space. This research encompasses various fintech sectors including Digital Banking, Payments, Wealth Tech, Insurtech, Digital Lending, Digital Identity, and other emerging technologies like Blockchain, AI and ML and their effects on the Indian financial services sector.

THE PROGRESSIONS OF FINTECH INNOVATIONS

Fintech 1.0: Fintech origins trace back to the 19th century when the Pentelegraph was developed by the banks to verify signatures. The establishment of electronic fund transfers via Telegraph and Morse code by Fedwire in 1918 marked the initial foray into the digitization of currency. A life-changing development in the era of fintech 1.0 came with the introduction of Diner's card in 1950. This marked the initial sincere attempt to transition payments into a cashless form, albeit starting modestly with restaurant payments. Subsequently, in 1958, American Express introduced the credit card, further advancing the evolution. The financial markets took a monumental leap forward following the implementation of Quotron's screen-based stock data in 1960.

Fintech 2.0: The onset of Fintech 2.0 is often traced back to the launch of the ATM by Barclay in 1967. Interestingly, in 1966, Telex had already supplanted the Telegraph for global information transmission, launching an era of interconnected financial exchanges and communication.

The most significant Fintech advancements materialized in 1971 when NASDAQ was established as the inaugural electronic stock market, a milestone widely regarded as one of the most pivotal in Fintech history.

Fintech 3.0: It came into existence following the worldwide financial crisis of 2008. In response to the evolving needs of the industry during that era, fintech firms began to revolutionize conventional financial institutions by introducing inventive solutions such as P2P lending, mobile payments, and AI-based robo-advisors. Two significant milestones during this period were the creation of Bitcoin in 2009, marking the emergence of cryptocurrencies, and the development of the P2P payment system after 2011. This marked a shift in focus towards delivering alternative financial services and challenging the established norms.

Fintech 3.5: Starting in 2014, there was a notable and accelerated surge in Fintech, namely China & India. These countries, unburdened by extensive networks of developed physical banking infrastructure, experienced rapid growth. This growth was driven by various factors, including the development of financial software by Indian IT companies, the proliferation of online payments and the emergence of payment banks in India, as well as the introduction of Alipay in China, among other noteworthy developments.

FINTECH IN THE INDIAN CONTEXT

1. The Genesis of Fin-Tech in India: FinTech in India has its roots in the liberalization that began in the early 1990s. This period witnessed the introduction of technology-driven advancements in the banking sector. The Indian government took proactive measures to boost the banking system, including the adoption of technologies like MICR (Magnetic Ink Character Recognition), electronic funds transfer, and other electronic payment systems. These innovations not only modernized the banking sector but also laid the foundation for future FinTech growth.

2. Mid-2000s: Emergence of Startups: Around the mid-2000s, India started to follow the worldwide trend of incorporating startups and FinTech into consumer-centered financial services. The initial model that gained prominence around 2005 was the “banking correspondent” model. This innovative approach aimed to increase the reach of financial services to rural households.

3. 2010: The Rise of Payment Startups: The year 2010 marked a significant turning point with the rise of payment startups focusing on e-wallets, online payments, and mobile recharge services. This period witnessed the birth of prominent FinTech startups such as Paytm, MobiKwik and many others. These startups were instrumental in simplifying digital transactions for Indian consumers.

4. Post-2010: Proliferation of FinTech: After 2010, the Indian FinTech landscape experienced rapid growth, with numerous startups entering various segments of the industry. These segments included lending (with over 100 startups), personal finance management (with more than 40 startups), and investment management (with over 90 startups). This expansion was fueled by several factors:

Talent Pool: India boasts a vast talent pool, particularly in the fields of technology and finance, which has played a pivotal role in the progress of FinTech startups.

Conducive Regulations: India established regulatory frameworks that were favourable to the FinTech industry. These regulations provided a conducive environment for startups to thrive.

India Stack: It is a set of Application Programming Interfaces (APIs), that provide the infrastructure for digital initiatives. It included components like Aadhar (a digital identity system), Unified Payments Interface (UPI), and Bharat Bill Payments.

Investment Inflows: The Indian FinTech sector attracted substantial investments. A total of \$8 billion was invested in FinTech companies through approximately 1,000 deals, covering the period from 2015 to mid-2020. Additionally, an extra \$8 billion was injected into the sector in 2021 alone, indicating exponential growth in funding. The digital payment sector received a significant share of these investments, with a growing focus on areas like alternative lending and InsurTech.

Increased Smartphone and Internet Penetration: The nationwide rapid adoption of smartphones and the Internet in India, with millions of users, created a conducive environment for FinTech services to flourish.

Startups and Unicorns: India experienced remarkable growth in the number of unicorns, particularly in the FinTech sector. According to the Survey published by Invest India, 44 Indian startups achieved 'Unicorn' status in 2021 alone, reaching the total number of Indian unicorns to 83, with a combined valuation exceeding \$277 billion. Among these, 15 unicorns belong to the FinTech industry, with a collective valuation reaching approximately \$60 billion.

OBJECTIVE AND SIGNIFICANCE OF THE STUDY

This study aims to comprehensively overview the evolution and impact of Financial Technology (Fin-Tech) on India's financial services sector, with a specific focus on its transformative influence with growth trajectory and chronological development. This research holds crucial significance as it not only unravels the transformative journey of FinTech in India but also provides a valuable roadmap for policymakers. By understanding the historical development and sectoral nuances of FinTech, government authorities can formulate informed policies to regulate and foster the industry effectively. Moreover, the insights gained from this study will empower FinTech companies to tailor their services to be more consumer-centric, thereby expanding their reach and enhancing financial inclusion, ultimately benefiting a broader spectrum of the population in India.

FINTECH FROM AN INDIAN VIEWPOINT

India Stack, a digital infrastructure framework in India, is intricately tied to the success of initiatives like the Jan Dhan Yojana and the surge in active mobile internet users. The vast number of Jan Dhan bank accounts opened through financial inclusion programs forms a foundational layer for India Stack, creating a robust base of individuals within the formal banking system. Simultaneously, the growing population of active mobile internet users provides the technological backbone for seamless and efficient digital interactions. The convergence of Jan Dhan accounts and active mobile internet users within the India Stack framework facilitates presenceless and paperless transactions, fostering the integration of various digital services, including fintech solutions. Also, the data includes digital payments volume, the total number of Demat accounts opened, the number of insurance policies sold and the digital lending market size in India. All the parameters in the dataset are considered from the year 2018 to 2023. Below given data shows the increase in active mobile internet users and Jan Dhan Accounts opened from the year 2018 to 2023 which significantly boosted the digital payments volume, demat accounts opened, no. of insurance policies sold and digital lending value in the country.

Year	2018	2019	2020	2021	2022	2023
Total no. of Jan Dhan Accounts opened (in crores)	31.44	35.27	38.33	42.20	45.06	48.65
Total no. of Mobile Internet users (in crores)	49.93	64.45	75.79	90.03	106.00	124.06
Digital payments volume(in crores)	2070.84	3134.36	4571.76	5554.33	8848.29	12008.75
Total no. of demat accounts (in crores)	3.08	3.59	4.09	5.51	9.21	11.46
No. of Insurance policies sold (in crores)	16.50	19.10	24.15	24.67	26.56	30.15
Digital Lending (in billion USD)	75.00	110.00	150.00	200.00	270.00	350.00

1. Digital Banking: India’s digital banking journey commenced in the late 20th century with the introduction of basic online platforms by traditional banks. However, the real transformation occurred with the explosive adoption of mobile banking, which placed a comprehensive suite of financial services directly on smartphones. Government initiatives, notably demonetization of the 500 and 1000 notes and the Pradhan Mantri Jan Dhan Yojana (PMJDY), played pivotal roles in accelerating digital adoption and fostering financial inclusion.

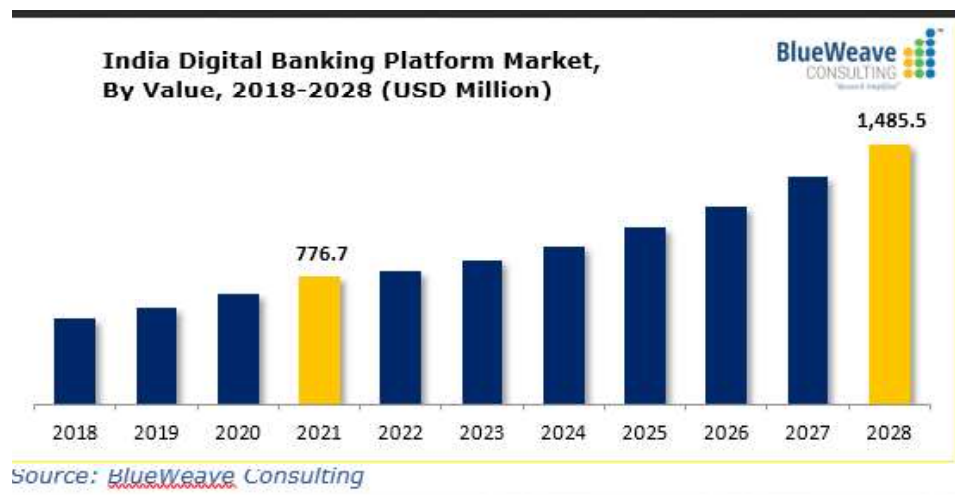


Figure: Indian digital banking platform value from 2018 to 2028 (USD Million)

Source: <https://www.niyogin.com/blogs/the-future-of-online-banking-in-india>

Technological enablers such as Unified Payments Interface (UPI) and artificial intelligence (AI) further propelled this evolution. UPI, a standardized and interoperable platform, streamlined cashless transactions, while AI-enhanced security measures and personalized the overall customer experience. Despite the progress, challenges like the digital divide persist, requiring ongoing efforts to ensure accessibility for all segments of society.

The emergence of digital-only banks and collaborations with fintech companies disrupted the well-established physical banking model, offering innovative, user-centric products and services. This shift towards digital banking has reached rural areas, positively impacting farmers and small businesses, particularly through initiatives like the Bharat Bill Payment System (BBPS) that simplified utility payments in remote communities.

Regulators and financial institutions are actively implementing strong security measures and regulations to safeguard users' information and financial transactions. As consumer behaviour shifts towards online and mobile transactions, particularly among the younger demographic, the future of digital banking in India holds exciting possibilities.



Figure: Indian Digital Banking Industry by total number of banks in India.

Source: <https://www.techsciresearch.com/report/india-digital-banking-market/3212.html>

Anticipated trends include ongoing developments in blockchain, contactless payments, and the integration of Artificial intelligence-driven chatbots, robo-advisors and virtual assistants to enhance customer interactions and support services. The social and economic impacts of digital banking are evident, contributing to economic growth by promoting a more efficient and transparent financial system. Additionally, digital banking has empowered individuals and businesses with financial tools and resources, reducing dependence on traditional banking methods.

2. Payments: The story of digital payments in India dates back to November 8th, 2016, when the Prime Minister of India declared demonetization, constituting 86% of the currency. This strategic decision significantly fueled the promotion and acceptance of the digital ecosystem in India. Prior to this, digital payments constituted merely 10% of transactions. However, at present, digital transactions constitute 40% of all payments made in India.

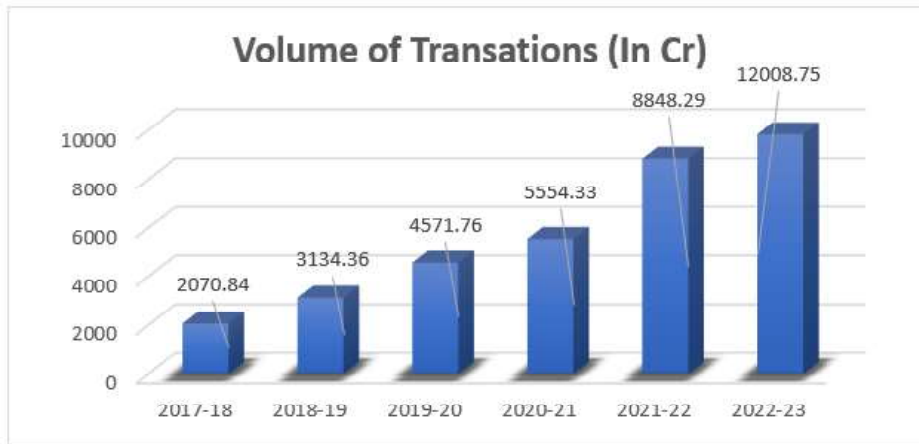


Figure: Volume of online transactions in India

Source: PIB <https://pib.gov.in/PressReleasePage.aspx?PRID=1897272>

Launched by the NPCI (National Payments Corporation of India) in 2016, UPI has emerged as a cornerstone in India's fintech narrative. Serving as a prevalent mobile payment solution, UPI facilitates swift and cost-free money transfers between bank accounts. Since its inception, UPI has streamlined financial transactions for account holders, witnessing a remarkable growth trajectory. Commencing with a modest one million transactions in October 2016, UPI has recently achieved a monumental milestone, surpassing 10 billion transactions.

The significance of this accomplishment becomes even more pronounced when considering that UPI constituted a substantial 75 per cent of the retail transaction



Figure: Growth of UPI payments volume in India

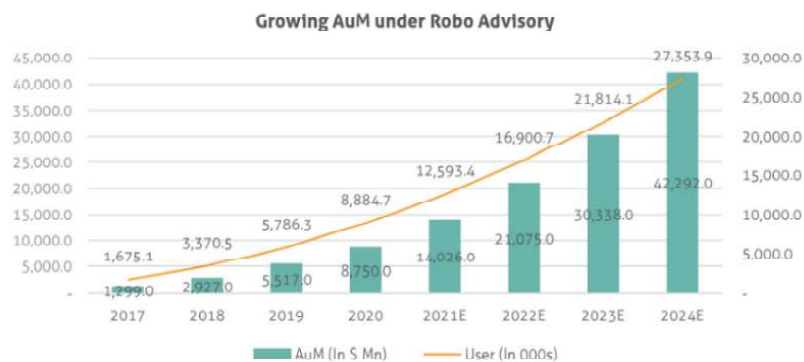
Source: National Informatics Centre <https://shorturl.at/lGHPZ>

volume during the fiscal year 2022-23. This underscores UPI's pivotal role in transforming the digital payment landscape in India, symbolizing not only its widespread adoption but also its integral contribution to the majority of retail transactions. The platform's user-friendly approach and seamless functionality have undoubtedly propelled it to the forefront of India's evolving financial technology ecosystem.

The base for such phenomenal growth was already created by government initiatives like Jan Dhan Accounts, Aadhar as a digital identity and mobile internet. While Jan Dhan accounts aim to include the unbanked population of rural and semi-urban population of India, 46.25 Cr bank accounts have been opened till 2022. With the help of Aadhar as a digital identity, the whole process of opening new bank accounts got very simple with easier KYC and two-factor authentication. This ease of opening new bank accounts further led to the foundation of digital payment systems. At the same time, increasing penetration of smartphones and internet services across rural India changed the overall dynamics of the digital payment ecosystem in India.

3. WealthTech: Emerging in the late 2000s, WealthTech, a fusion of wealth and technology, has brought about a transformative wave in the landscape of wealth management in India. The inception of WealthTech was marked by the rise of financial technology (FinTech) companies, driven by a mission to digitize and democratize traditional wealth management processes. This digital transformation allowed individuals to seamlessly manage their investments and financial portfolios through online platforms and mobile apps.

WealthTech



Source : FinTech Industry in India by RSBA Advisors

Figure: Growing AuM(Asset under Management) under Robo Advisory.

Source: <https://finflux.co/blog/the-brains-behind-the-growth-of-indias-fintech/>

A significant milestone in the evolution of WealthTech was the advent of AI based robo-advisors, automated wealth management platforms that harnessed algorithms to deliver personalized investment advice based on individual goals and risk profiles. This innovation reshaped the way investors approached their financial strategies.

India experienced a surge in startups and businesses within the WealthTech sector, with notable names such as Scripbox, Groww, Paytm Money, and Kuvera leading the way. These platforms diversified their services beyond traditional investment management, incorporating features such as tax planning, insurance advisory, and retirement planning to provide holistic financial solutions.

The regulatory environment, overseen by bodies like the SEBI, played a crucial role in shaping the industry. Compliance with regulations became a focal point for WealthTech startups, ensuring investor protection and market integrity.

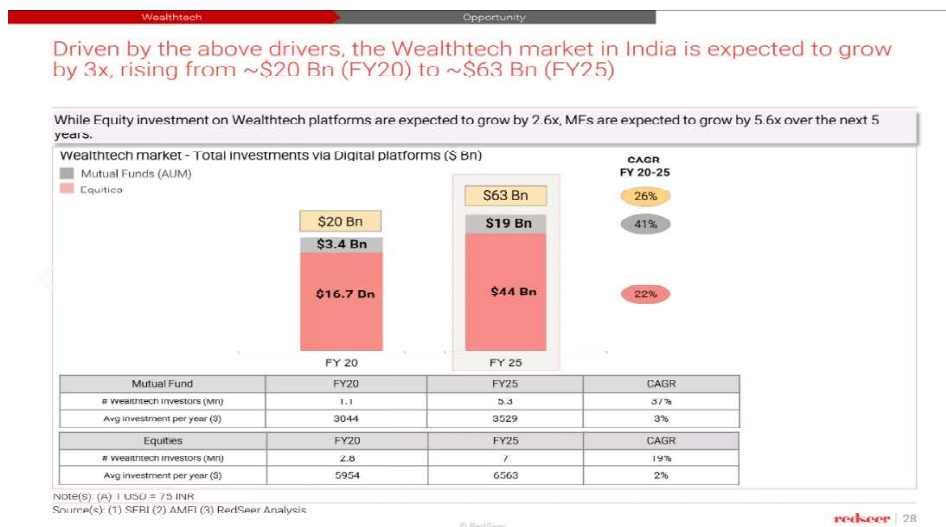


Figure: WealthTech market in India.

Source: <https://www.slideshare.net/RedSeer/indian-wealthtech-a-60-bn-opportunity-by-fy2577>

WealthTech embraced new-edge technologies, including AI, ML and data analytics, to refine investment strategies, automate processes, and offer personalized financial advice. These technological advancements not only enhanced the efficiency of wealth management but also contributed to the growth of financial literacy among retail investors.

Looking forward, the future of WealthTech in India appears promising, positioned for further growth and innovation. Anticipated trends include the integration of blockchain technology, the expansion of sustainable and responsible investing options,

and the development of sophisticated AI-driven advisory tools. The combined forces of evolving technology and a supportive regulatory environment position WealthTech as a pivotal player in changing the future course of financial services in India.

4. InsurTech: InsurTech represents an interconnected ecosystem that amalgamates various industries to enhance the quality of services offered to insurers and their clientele. Notable among the pertinent adjacent industries are agriculture, health, wealth management, transportation, etc. This collaborative framework aims to deliver heightened value by leveraging synergies between insurance and these diverse sectors. In this integrated landscape, InsurTech catalyzes innovation, fostering an environment where technology combines with traditional insurance domains to create improved and more comprehensive solutions. The convergence of these sectors underlines the expansive reach and transformative potential of InsurTech in redefining the dynamics of the insurance landscape and enhancing overall customer experience.

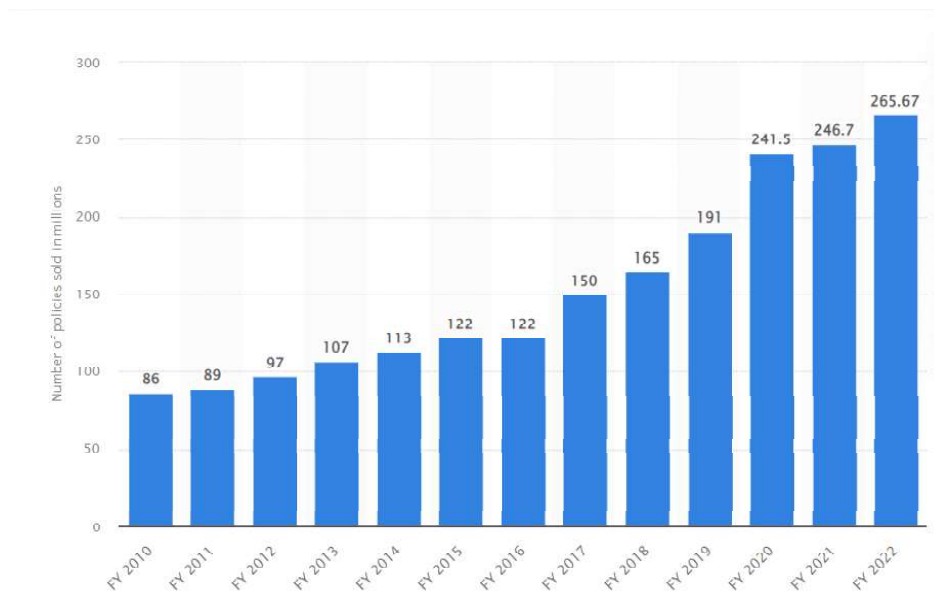


Figure: No. of insurance policies sold by general and health insurers across India from FY 2010 to 2022

Source: Statista <https://shorturl.at/bDQSW>

The projected expansion of India's total insurance market is forecasted to witness substantial growth, projected to escalate from ¹ 8 lakh crore in FY21 to ¹ 33 lakh crore by FY31. This growth trajectory, characterized by a CAGR of 14.9 per cent, is propelled by the rising levels of market penetration and supportive government initiatives. In the fiscal year FY21, approximately 67 per cent of individuals were encompassed by health insurance schemes sponsored by the government, while around 23 per cent were covered

through group business policies. The remaining 10 per cent of individuals were protected under individual policies issued by general and health insurers.

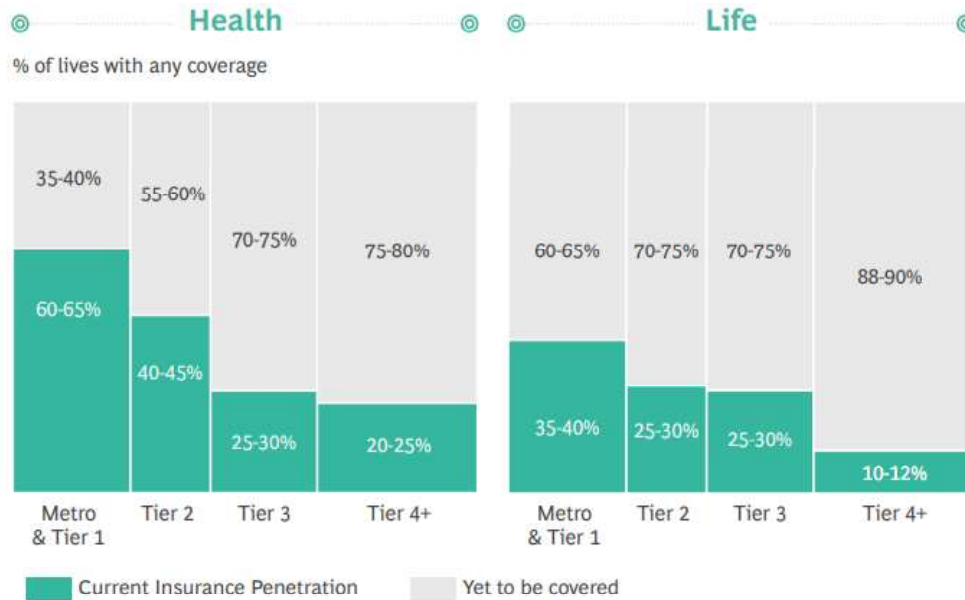


Figure: Insurance penetration showing Tier 2 offers a high scope of growth

Source: BCG report <https://rb.gy/w7lji9>

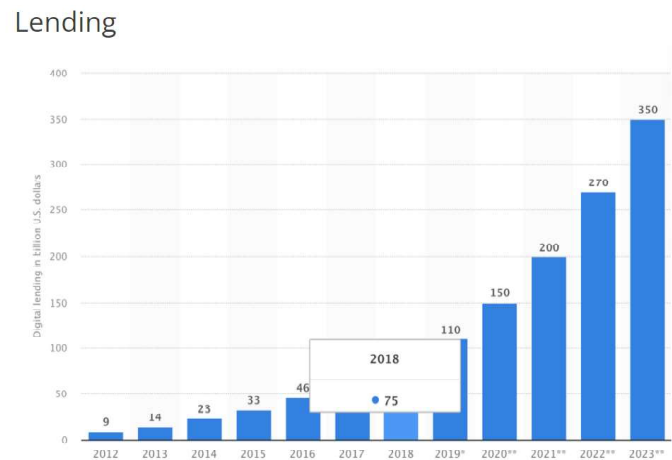
Insurance companies in India are experiencing significant growth, propelled by key factors such as increasing awareness of insurance in Tier 2 cities and beyond, extensive utilization of insurance products, and increased participation from Small and Medium Enterprises (SMEs). The post-COVID surge in consumer interest in insurance, coupled with advancements in technology and expanded outreach to the population, has contributed to this growth. Additionally, the establishment of the nation's health stack has played a crucial role in enhancing penetration into the insurance sector.

Insur-tech aims to revolutionize the insurance landscape in India by innovating, adding value, and fostering inclusivity and empowerment. This ambitious journey, though promising, comes with challenges like regulatory complexities, adapting to advancing technologies, and the continuous effort to build and sustain consumer trust.

5. Digital Lending: In the dynamic landscape of Indian finance, digital lending has emerged as a transformative force, leveraging tech to offer financial services such as loans and credit through online platforms. This evolution traces its roots to the mid-2010s, coinciding with the widespread adoption of smartphones and increased internet

penetration. Traditional lending processes underwent a digitization revolution, streamlining loan origination, approval, and disbursal.

Online lending platforms, working as intermediaries connecting borrowers with lenders, became the cornerstone of digital lending. These platforms harnessed technology for credit scoring, risk assessment, and expedited approval processes, providing borrowers with a convenient and efficient means of accessing credit.



Source : Value of digital lending market in India from 2012 to 2018, with forecasts until 2023 by Statista

Figure: Value of digital lending market in India.

Source: <https://finflux.co/blog/the-brains-behind-the-growth-of-indias-fintech/>

Digital lending in India encompasses a diverse array of loan types, including personal loans, business loans, peer-to-peer lending, and payday loans. The flexibility and accessibility inherent in digital lending have resonated with a broad spectrum of borrowers, further driving its popularity.

The rapid rise of digital lending startups in India has been a defining aspect of this financial transformation. Notable players such as Lendingkart, Capital Float, KreditBee, and EarlySalary have specialized in various lending segments, catering to the unique needs of both individuals and businesses.

Digital lending has played a pivotal role in fostering financial inclusion, extending its reach to unbanked and underbanked populations. Leveraging alternative data sources for credit scoring, lenders have been able to assess the creditworthiness of individuals with limited traditional financial histories.

Technological innovations, particularly in machine learning and data analytics, have been central to the operations of digital lending platforms. These technologies

enable more sophisticated credit risk assessments, with automated processes reducing turnaround times and making credit decisions quicker and more efficient.

The Reserve Bank of India has actively engaged in formulating a regulatory framework for digital lending platforms. These guidelines emphasize fair practices, data security, and consumer protection, reflecting a commitment to balancing financial inclusion with the protection of consumer interests.

Digital lending platforms operate on various business models, including marketplace lending, peer-to-peer lending, and direct lending. Collaborations with traditional financial institutions are commonplace, enhancing the credibility and reach of digital lenders.

Looking towards the future, digital lending in India is poised for continued innovation. Anticipated trends include the integration of blockchain for secure transactions, the expansion of small-ticket loans, and further customization of loan products. As fin-tech continues to evolve, digital lending is positioned to play a crucial role in shaping the future of financial services in India, offering a faster and more inclusive approach to accessing credit.

CONCLUSION

The intertwined nature of advanced technologies and customer expectations for a secure and user-friendly banking experience has led financial institutions to adopt Fintech solutions with care. This study highlights the potential of Fintech firms to revolutionize India's financial sector by providing innovative products and services that meet users' demands for trust, speed, affordability, and security. However, regulatory authorities must strike a balance between efficiency and stability to manage risks related to financial stability and integrity, such as cyber-attacks and money laundering, without hindering innovation.

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