

# Fintech Sector

## Navigating the technological revolution in Financial Sector



## Introduction

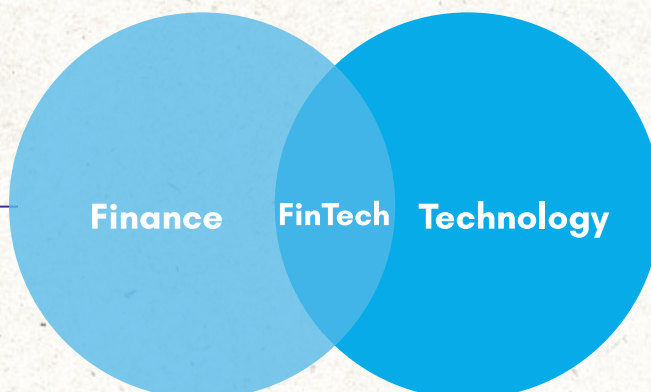
Have you ever used your phone to pay for something? Or renewed your insurance policy with a click of a button? Or opened a Bank account from the comfort of your own home? If yes, then you've experienced the massive impact of the fintech revolution. Within a few decades, technology has become a critical component of the financial sector across the world. What began with Aadhaar and UPI is now a financial revolution in India as well, with the fintech sector witnessing exponential growth.

While, Fintech is transforming the global financial landscape and creating new opportunities to advance financial inclusion and development, it also presents risks that require updated supervision policy frameworks. Through its innovations, it has disrupted the traditional channels of financial intermediation. In this backdrop, let us first understand what is fintech and where does India's Fintech ecosystem stand? What factors have been driving the growth of Fintech industry in India? How has the Fintech industry improved the financial landscape? What are the plausible risks posed by the recent growth in the Fintech sector? How can we facilitate the growth of Fintech whilst managing associated risks? In this edition, we will attempt to answer these questions.

## What is fintech and where does India's Fintech ecosystem stand?

- ▶ FinTech is an umbrella term for all kinds of new and innovative technologies emerging in the world of finance.
- ▶ In other words, it can be described as **“technologically enabled financial innovation** that result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services.”
- ▶ Enabled by modern technologies like Artificial intelligence (AI), Blockchain technology, etc., Fintech enterprises provide an array of services, with many enterprises operating within multiple domains.

Prominent FinTech Business Models based on the kind of service they provide	
Segments	Services provided
<b>Digital Payments</b> 	<b>Digital Wallets; Prepaid Payment instruments (PPIs); Cryptocurrencies; Central Bank Digital Currency (CBDC); Payment Gateways; Contactless transactions enabled by QR-code and NFC etc.</b>
<b>Alternative lending</b> 	<b>Peer to Peer (P2P) lending</b> (individuals obtaining loan directly from other individuals); <b>Crowd Funding</b> (practise of funding by raising money from a large number of people); <b>Buy Now Pay Later (BNPL)</b> platforms etc.
<b>Wealthtech</b> 	<b>Robo Advisors</b> (digital platforms that provide automated, algorithmic investment services); <b>Trade in Cryptoassets and non-fungible token (NFTs); Algorithmic trading</b> etc.
<b>Banking</b> 	<b>Neobanking; Customer Onboarding Platforms; Chat bot assistants</b> etc.
<b>InsurTech</b> 	<b>Insurance Web aggregator; Automated claims settlement;</b> Customized insurance services like <b>Bite-size insurance/ microinsurance</b> etc.
<b>RegTech</b>	<b>Identity Management &amp; Control</b> through digital Know Your Customer (KYC) procedures for fraud detection, anti-money laundering (AML), etc.; <b>Transaction Monitoring</b> such as through Blockchain technology; <b>Risk management</b> etc.
<b>Others</b>	<b>Account Aggregators (AA) networks</b> (data-sharing system that is required for making investments or accessing credit, among other financial services), <b>online accounting and underwriting, Tax filling platforms</b> etc.



## Status of India's Fintech ecosystem

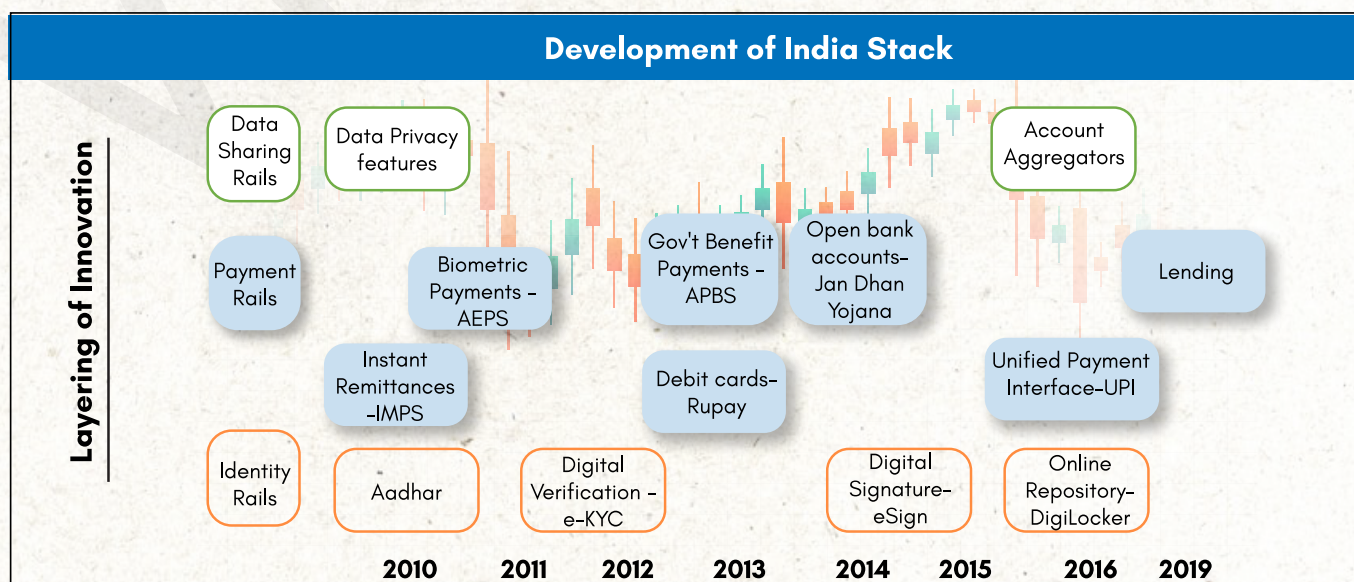
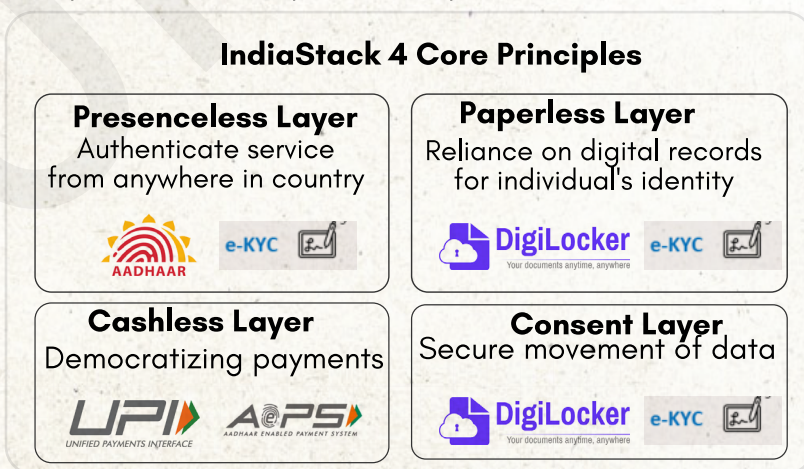
Though the epicenter of this Fintech mostly lies in the developed economies, the impact is seen to be higher in the developing economies of the Asia Pacific like India. Fintech industry has become one of the fastest-growing sectors in India, indicated as below-

Growth story of India's Fintech Industry		
Global status	Growth rate	Fintech unicorns
<ul style="list-style-type: none"> <li>India is currently the world's <b>3rd largest fintech ecosystem</b> after USA and China with 7,460 companies in the domain.</li> <li>India's fintech market achieved a <b>14% share of the global funding</b>.</li> <li><b>At 87%, India has the highest FinTech adoption rate</b> in the world (global average is 64%).</li> </ul>	<p>The sector's <b>Compound Annual Growth Rate (CAGR) increased by 20%</b>.</p> <p><b>Rise in digital transactions</b></p> <p>Total number of transactions related to digital payments increased from 2,071 crore in FY 2017-18 to 5,554 crore in FY 2020-22.</p>	<p>The India fintech ecosystem has <b>23 unicorns</b> (out of 106 in total).</p> <p><b>Future Potential</b></p> <p>Indian FinTech sector expected to reach a <b>valuation of above US\$150 billion by 2025</b>.</p>

## What factors have been driving the growth of Fintech industry in India?

The growing number of mobile subscribers (1.18 billion), internet users (540 million) and mobile internet users (520 million) in India has indisputably allowed FinTech to tap into underserved customers over digital channels. Furthermore, multitude of other factors, including government endeavour to create a supportive ecosystem, have resulted in a thriving Fintech landscape in India-

- Development of 'India Stack':** In the past decade, Indian government has successfully built a unique and robust infrastructure for incubation and growth of Fintech known as the **India Stack**.

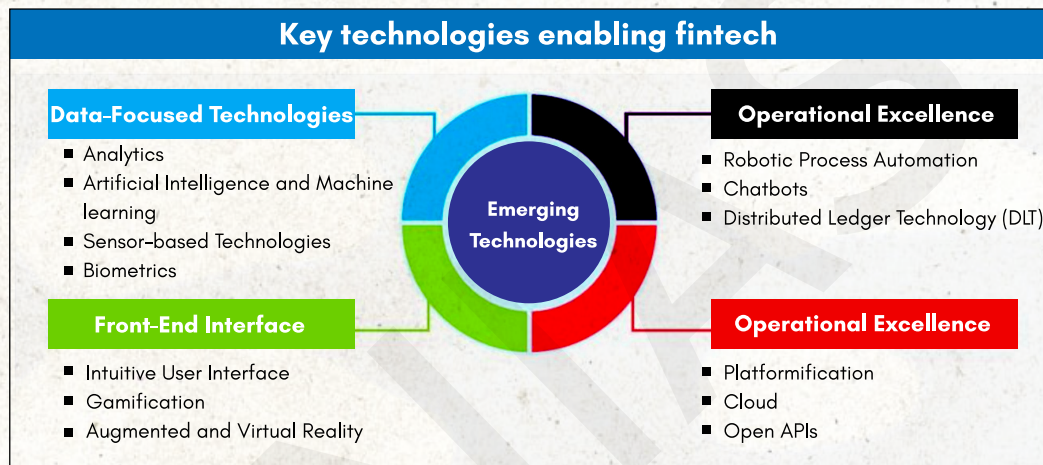


» **Technological advancements:** At the core of the rapid growth of fintech are new technologies that have revolutionized ways in which financial products and services are created, provided and managed. It has enabled creation of entirely new products like Non Fungible Tokens (NFTs), cryptocurrencies etc.

» **Conducive regulatory framework:**

» **Several guidelines and frameworks were issued by RBI** related to PPIs, P2P lending platforms, Payment aggregators, Payment Banks etc. with a view to encourage the growth of fintech industry in a regulated environment.

» **Regulatory sandbox by RBI, SEBI and IRDAI:** The Regulatory Sandbox allows the regulator, the innovators, the financial service providers and the customers to conduct field tests to collect evidence on the benefits and risks of new financial innovations, while carefully monitoring and containing their risks.



» **Development of licencing framework for Payments Banks and recognition of P2P lenders as Non-Banking Financial Companies (NBFCs) by RBI.**

» **Expanding Open Government Data:** Account Aggregator (AA) network, a legal financial data-sharing system framework was established, enabling customer data to be shared within the regulated financial system with the customer’s knowledge and consent.

» **New FinTech Department** in the RBI established to give focused attention to this evolving and dynamic sector

» **Changes in consumer behaviour:**

» **Rise of Tech-savvy generation and digital native:** The new generations of millennials and Gen Z expect financial services like money transfers, investment etc. to be effortless, secure, and scalable, ideally without the assistance of a person or the visit of a bank. Evidently, digital payments have grown 160 times in India since 2003.

» **Push provided by post demonetization and covid-19:** While demonetization initiated the shift away from a paper based, cash-based economy towards digital, electronic, technology driven economy, the lockdowns and social distancing norms during the pandemic hastened the innovation and digitalization across the financial sector.

» **Growing Financial inclusion and digital literacy:** Schemes like Pradhan Mantri Jan Dhan Yojana, Digital India Programme, PM Gramin Digital Saksharata Abhiyaan (PMDISHA), etc. have helped in expanding the consumer base of fintech.

► **Flourishing entrepreneurship culture:**

Rise of new enterprises in the Fintech sector, especially in digital payments, lending and wealth segments, are a corollary of India's startup and innovation ecosystem built through initiatives like Startup India, Atal innovation Mission, NIDHI, FinTech Hackathon etc.

► **Developments in digital identity ecosystem:**

The Ministry of Electronics and Information Technology (MeitY) has proposed a new model of "Federated Digital Identities" under which a citizen's multiple digital IDs – from PAN and Aadhaar to driving licence and passport numbers – can be interlinked, stored, and accessed via one unique ID.

► **Launch of e₹ (digital Rupee):**

The plans to launch India's own Central Bank Digital Currency (CBDC) was announced during the Union Budget 2022-23 and RBI has recently launched a pilot project on CBDC along with a Concept Note on it.

► **Financial support:**

Growth in foreign direct investment (FDI) flows and venture capitalists and Angel investors, apart from government support through schemes like- International Financial Services Centres Authority's

FinTech Incentive Scheme, Fund of Funds for Startups (FFS) Scheme and Startup India Seed Fund Scheme (SISFS), provided much needed financial support to FinTech activities.

► **Dedicated centre:** A Fintech hub has been developed at the International Financial Services Centre (IFSC), GIFT City.

► **Industrial collaborations:** NITI Aayog's **Fintech Open Summit** and India Post Payments Bank's **Fincluva-tion** are some examples of a joint initiatives to collaborate with Fintech Startup community to co-create and innovate solutions for financial inclusion.

► **Sector specific schemes for technological and digital transformation:** Such schemes are expected to have positive fallouts for the overall fintech industry. Examples-

► **National Digital Health Mission (NDHM) and the National Health Stack** for Health insurance sector.

► **TReDS platforms launched for MSMEs** for trade financing.

**Digital identities: Role in Fintech ecosystem**

A digital identity is **an online or networked identity adopted or claimed in cyberspace by an individual, organization or electronic device**. In combination with emerging technologies such as AI, big data etc., digital identities can play an enabling role in the fintech sector-

► **Improved risk assessment and reduced fraud** by creating more holistic and accurate customer risk profiles to inform suspicious transaction monitoring and provision of credit- and risk-based products.

► **Improved customer experience** by leveraging a variety of user attributes to better understand the customer's needs and preferences.

► **Protection from damage, tampering, loss and theft**, with cutting-edge authentication and security protocols.

► **Streamlined and easier onboarding and compliance processes** through access to a reliable and consolidated digital view of users.

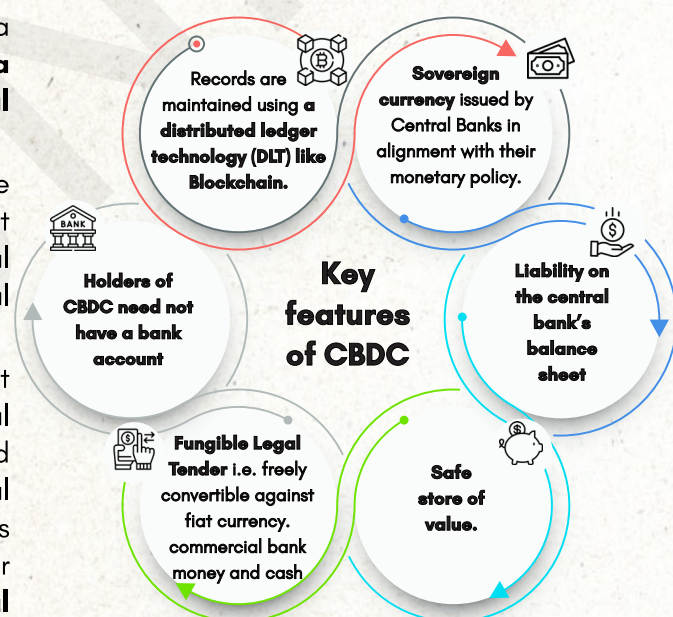
**India's CBDC 'digital Rupee (e₹)': What is it and how can it inspire Fintech innovations?**

► As per RBI, CBDC is a **legal tender issued by a central bank in a digital form**.

► It is pegged to the value of that country's fiat currency and adds digital form to existing physical form of bank note.

► Apart from reducing cost associated with physical cash management and prompting financial inclusion, it is also expected to further the cause of **financial**

**digitisation by enhancing the adoption of blockchain and other digital means for financial services as well as support competition, efficiency and innovation in payments.**





## Tier II and Tier III cities in India: Hotspot for India's Fintech industry

Tier II and III cities in India contributed to 54% of digital transactions in 2020, demonstrating a 92% growth in just one year. This indicates how fast fintech adoption, especially in the payment segment, has been expanding in these cities.

Tier II and Tier III cities are expected to play a key role in the growth of Fintech in the future as well, relying on the below factors-

- ▶▶ **Hubs for next wave of Start-up culture:** Nearly 50% of the recognised start-ups in India are now emerging from Tier 2 and 3 cities, according to the Ministry of Commerce and Industry.
- ▶▶ **Unserved lending and investment needs:** Fintech solutions like buy now pay later, customized microloans, etc. have immense scope in catering to the financial needs of unbanked or under-banked population, especially middle-class segment.
- ▶▶ **Growing trust in fintech:** Factors like simplified user interfaces, launch of platforms in native language like Paytm, Khatabook etc. has helped in building trust and enhancing demand of fintech services.
- ▶▶ **Changing consumption patterns:** Enabled by growing incomes and shift towards flexible and remote working, Tier II and Tier III cities are emerging as the new consumption centers in India, replacing metros and tier 1 cities. FinTech startups can cash in on this opportunity to offer novel products in the payment and wealthtech segments.

However, to fully utilise these opportunities, several hurdles such as poor internet connectivity, lack of scalability due to low population density, lack of infrastructure, low awareness etc. need to be dealt with.

## How has the Fintech industry improved the financial landscape?

Using technology to provide the full range of traditional financial services and beyond, Fintech enterprises have brought disruptive changes across the financial sector, with several positive implications for the society and economy-

- ▶▶ **Enhancing efficiency of financial services:** Fintech businesses use existing and emerging technologies to help enhance operational efficiency of financial institutions while offering numerous benefits like-
  - ▶ **Improved customer service** (e.g., intelligent service robots and chat interfaces).
  - ▶ **Reduced transaction and operational costs** (e.g., savings through use of cloud based services and automated systems).
  - ▶ **Enhanced transparency and democratization** (e.g., transparent and decentralized data sharing through blockchain technology).
  - ▶ **Provision of personalized user experience** (e.g., robo advisory tailored to customer preferences).
  - ▶ **Reduced turnaround time** (e.g., automated financial transactions).
  - ▶ **Emergence of new financial products** (e.g., Enhanced innovation through Open-source software, serverless architecture, and software-as-a-service (SaaS)).
  - ▶ **Secure transactions** (e.g., use of data encryption techniques and identity authentication technologies like facial recognition).

➤ **Strengthening and deepening of India's capital markets:** Recent fintech innovations are bolstering back-end technology and customer-facing solutions. These solutions are expected to bring varied benefits for the Indian capital markets, including-

➤ **Retail-isation:** While simplifying end-to-end investment, trading processes, and facilitating informed investments, fintech ushers time-saving and cost-effective stock market participation, especially for retail investors in tier 2 and 3 cities.

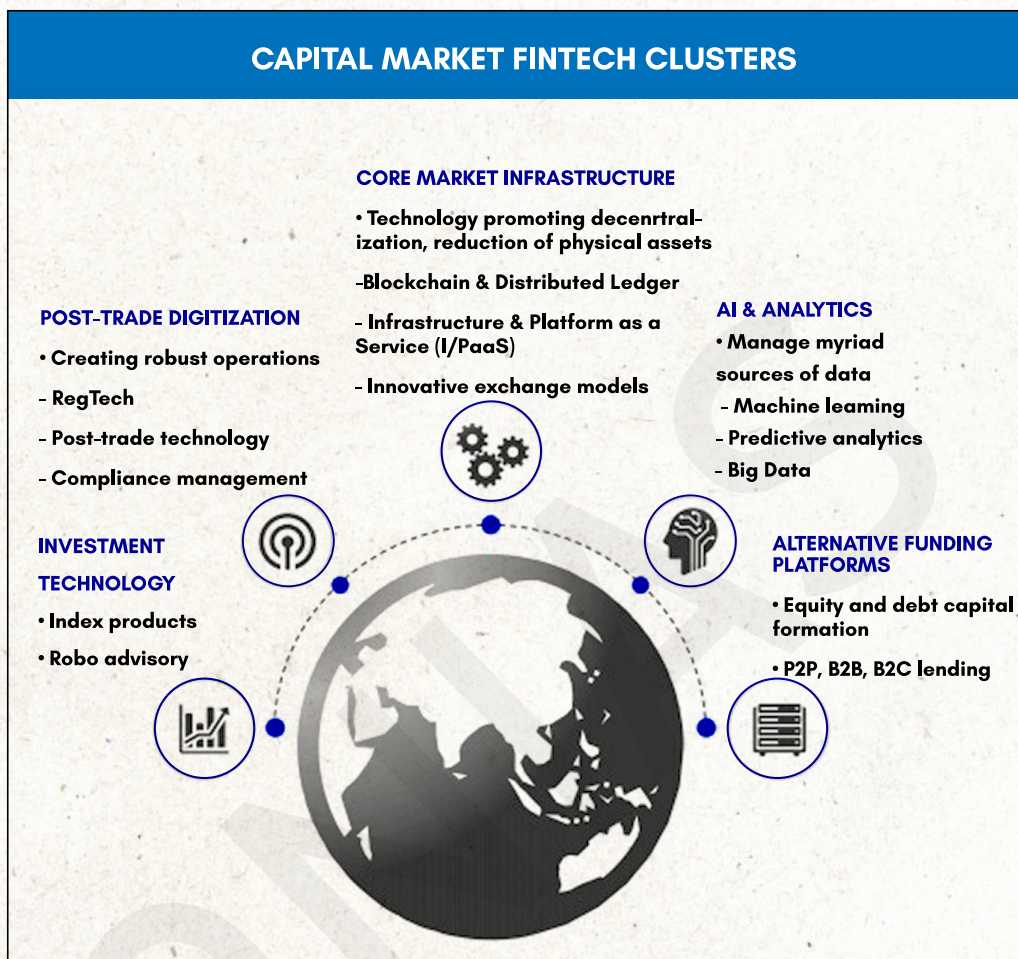
● Evidently, more than 80% of new investment accounts are being opened in tier 2 and 3 cities.

➤ **Enhancing Financial literacy:** Several app-based fintech platforms have emerged that offer free basic stock trading, real-time, relevant, personalized financial news etc. where new investors can learn about strategic investments and stock market jargon.

➤ **Reducing risks:** By providing more choice of credit sources, proliferation of FinTechs could lower the risks an economy faces if credit provisioning is dominated by a few banks.

● Further, integrating AI technology and algorithm-based services with fintech platforms allows investors to explore different market opportunities and financial regulators to identify, characterize and manage risks.

➤ **Driver of Social Good:** FinTech in a developing country like India represents a clear means of enabling actionable humanitarian good towards accelerating the socio-economic development.



## How can Fintech act as a driver of Social good?

### Ensuring Financial inclusion of the unbanked and underbanked

#### For Women

- ▶▶ **Mobile money** can provide a safe place for women to save money as well as reduce poverty among female-headed household
- ▶▶ **Bigdata can help collect and assess gender-disaggregated data** and create tailored products for women such as Microfinance loans targeted at female entrepreneurs

#### For Micro, Small & Medium Enterprises (MSMEs)

- ▶▶ **Blockchain and smart contracts based invoice trading** can resolve short term capital issues by allowing MSMEs to sell their invoice or other receivables at a discount for working capital.
- ▶▶ **Peer-to-peer lending and crowd funding** have the potential to improve access to finance to MSMEs who are otherwise declined credit from banks due to their risk portfolio.

### Enhancing social security coverage

#### Pensions

**Enhanced efficiency of the operation of pension schemes** through risk management applications, automation of investment processes, and facilitation of regulatory compliance.

#### Insurance

- ▶▶ **Predictive Modelling:** It uses statistical analysis to create models that can predict the likelihood of something happening. This helps insurance companies set appropriate premiums and improve customer retention.
- ▶▶ **Claims processing:** Automation can help insurers process claims faster and more accurately.
- ▶▶ **Decentralised Insurance** (also known as “distributed ledger technology-based insurance”) uses blockchain and smart contracts to create an untrusting environment for insurance companies and their customers.
- ▶▶ **Bigdata analysis** can help generate deeper risk insights, to increase the speed of servicing, to lower costs, and to open the way for ever greater product precision and customization.

#### Economic relief efforts

**Automated digital payments** can aid in the more rapid disbursement of funds in government schemes while also reducing the chances of corruption and leakages.

### Propelling Sustainable investment and climate finance

- ▶▶ **Monitoring environmental, social, and governance (ESG) transitions:** Fintech businesses can measure and verify the impact of sustainable financial products, such as ‘green’ bonds, loans, and investment funds.
- ▶▶ **Climate risk assessment:** Software-as-a-service cloud-based platforms using big data, AI, machine learning, and sensors coupled with remote sensing technology are helping financial institutions to geospatially map specific loans to specific climate risks.
- ▶▶ **Quantifying ecosystem services:** Technologies, such as satellite imagery and light detection and ranging (LIDAR) can be used to incorporate ESG factors into the financial system – thus making nature bankable.
- ▶▶ **Carbon credits and offsets:** Carbon tracking fintech providers now enable businesses to understand the carbon impact of their transactions. And carbon offsetting providers are helping them to compensate for the emissions.
- ▶▶ **Regulatory technology for enhanced observance:** Regtech solutions can enable financial institutions to measure and assess the impact of climate risk regulations and policies by expanding regulatory reporting and incorporating climate-related disclosures.



## In Conversation!

### Neobanks: *The future of banking*



**Vinay:** Hey Vini! Sorry, I think I'll have to cancel our plans for the Museum today?

**Vini:** Hey Vinay! Why? Where are you headed to?

**Vinay:** I have to go to the bank to open a new account and setup some investment funds. It'll take me all day standing in queues and filling forms.

**Vini:** Why don't you open an account online in a Neobank?

**Vinay:** That sounds hassle-free. But what exactly is a neobank?

**Vini:** Neobanks are fintech firms that function like banks but operate exclusively online, without any physical branches. They do so through a collection of financial apps and services.

**Vinay:** Okay! So, are they similar to payment banks?

**Vini:** Not exactly. Payment banks in India cannot give out loans as of yet. Whereas Neobanks can perform all the functions of a traditional bank as they have tie-ups with RBI licensed banks.

**Vinay:** Understood. Apart from saving me a trip to the bank, do these banks offer other benefits?

**Vini:** Well yes! You see, since Neobanks don't have to bear the expenses of running physical locations, they are able to pass these benefits on to their customers by way of low or no fees and high-interest rates on deposits.

**Vinay:** That's great! What else?

**Vini:** They are also known for leveraging the latest technologies like artificial intelligence, automation, and blockchain, to offer benefits like personalized solutions, faster response times, round-the-clock service, and quick on-boarding.

**Vinay:** Also, I would be able to carry my bank in my pocket at all times.

**Vini:** That's right!

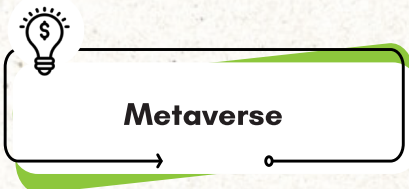



## Emerging Tech in Fintech: What does the future hold?

- ▶ In the current global landscape, new and emerging technologies are expected to bring disruptive change in all spheres of life. Needless to say, several new business opportunities in the Fintech sector can open up in intersection to these technological domains.
- ▶ Potential fintech applications which will help in enhancing efficiency of the financial sector and expedite financial inclusion have been discussed below-

Technologies	Potential applications
<p><b>Artificial Intelligence and Big Data</b></p>	<ul style="list-style-type: none"> <li>▶ <b>Predictive analysis</b> to meet consumers' credit and investment needs.</li> <li>▶ <b>Virtual Assistants or Chatbots</b> for resolving grievances.</li> <li>▶ <b>Reliable and unbiased Credit Rating services.</b></li> </ul>



 <p><b>Metaverse</b></p>	<ul style="list-style-type: none"> <li>▶▶ <b>Metaverse wallets</b> for carrying out financial transactions including buying and selling products (NFTs or virtual real-estate) on the metaverse platforms.</li> <li>▶▶ <b>Gamification</b> to help customers analyse real-world financial decisions in the virtual world by recreating those scenarios in the metaverse.</li> </ul>
 <p><b>Decentralized Finance (DeFi)</b></p>	<ul style="list-style-type: none"> <li>▶▶ <b>Construction of financially inclusive marketplace</b> where pricing is determined by market forces and parties transact using secure technology on a public blockchain.</li> <li>▶▶ <b>Independent operation of financial transactions:</b> Intermediaries such as brokerages, exchanges, or banks can be eliminated using secure distributed ledgers through blockchain technology.</li> </ul>

## What are the plausible risks posed by the recent growth in the Fintech sector?

Technological transformations brought on by Fintech sector can not only amplify risks of traditional financial sector, but also bring to the fore new regulatory and operational risks. Some common concerns have been discussed below-

### Risks to Consumers

- ▶▶ **Fraud/misconduct:** Novelty and opaqueness of fintech business models and lack of consumer familiarity with technologies can enhance risk of fraudulent lending or investment opportunities, misappropriation of funds, or imprudent lending.
- ▶▶ **Adverse impacts due to technology unreliability or vulnerability:** Due to heavier reliance on digital and automated processes, consumers may be more vulnerable to cyber fraud, misdirected transactions, platform malfunctions and data loss in comparison to traditional financial services.

### Ethicality of Fintech enterprises: Potential unethical practices

Novel solutions, lack of user awareness and literacy, unpredictable technological outcomes, and profit driven motives can lead to emergence of new ethical issues:

#### Conflicts of interests between consumers and fintech entities



- ▶ E.g., Fintech lending platforms heavily dependent on generating certain fees, may focus more on loan quantity over quality to maximize returns, while consumers bear the loss of imprudent loans.

#### Misrepresenting information and misleading marketing that emphasizes benefits and downplays costs/risks



- ▶ E.g., online payday loans look harmless at first sight due to the small amount and the flexibility to repay. But they could trap customers in debt due to rapid interest accumulation, hidden penalty charges, and rollover fees.

#### Environmental implications



- ▶ Several aspects of fintech business models can contribute negatively to global warming or climate change, such as **enhanced access to fossil-fuel based investments, promotion of consumerist behaviour through easy loans, excessive energy consumption of crypto mining activity, higher carbon footprint from e-waste** etc.

#### Algorithmic decision-making leading to potentially unfair outcomes

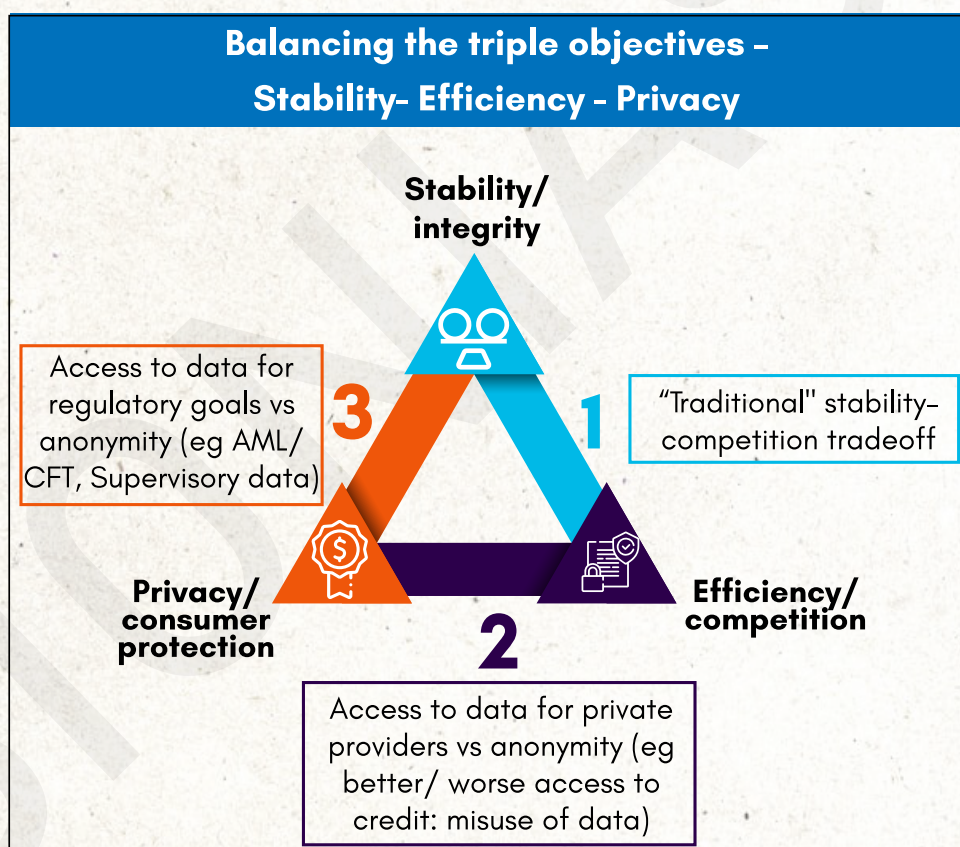


- ▶ Use of algorithms for consumer-related decisions may lead to unfair, discriminatory, or biased outcomes due to poor algorithm design, incomplete or unrepresentative input data etc.

- » **Convolutd Grievance redressal:** Complex partnership and outsourcing relationships may make it difficult for consumers to identify the responsible party and obtain resolution.
- » **Business failure or insolvency:** Inexperience, untested businesses, and higher dependence on market factors of new fintech enterprises puts consumers at greater risk of loss of funds due to their business failure or insolvency.
- » **Inherent challenges for disclosure and transparency:** Limited electronic disclosure of terms and conditions, and lack of transparency on costs and business models create risks to consumers, particularly those less financially literate.
- » **Financial exclusion:** Inequality of access to high-speed internet, lack of financial and digital literacy, low awareness about financial services and products etc. are major barriers for adoption of fintech.

## Threats posed to Integrity of financial systems

- » **Cyber risks and inadequate Data protection:** Inadequate safeguards with respect to data protection and cyber security could expose consumers to the risk of inappropriate commercial uses and unauthorized disclosure and use of their financial as well as other personal data, leading to fraud, identify theft and online extortion (for example, ransomware attacks).
- » **Proliferation of illegal activities:** Money laundering, financing of terrorism practices and other criminal activities like drug trafficking, can proliferate amid digital financial platforms that facilitate anonymity in transactions.



- » **Lowered resilience of financial markets:** Imprudent lending practices, poor risk assessment, and lack of standard credit guidelines in the Fintech sector, can make the credit market more procyclical and volatile.
- » **Decreased effectiveness of policy transmission:** Credit activity outside the prudential regulation space could render credit-related countercyclical policies less effective.
  - » E.g., Crypto assets such as stablecoins (cryptocurrencies where the price is designed to be pegged to a reference asset) could pose issues to monetary policy transmission, lead to currency substitution, and impact capital flows.

**Risks posed by BigTechs:** Technology firms such as Amazon, Facebook, Google etc., commonly known as 'BigTechs', have ventured into fintech space. Their entry in the financial domain poses several new challenges for regulatory and supervisory authorities such as-

- » **Stifled competition and threat to data privacy:** Given their entrenched clientele base and data networks gathered using their non-financial services like search engine, e-commerce platforms, BigTechs have the potential to become dominant players as well as threaten consumers' data privacy rights.

» **Complex governance structure:**

BigTech provide financial services through their subsidiaries operating under different licenses for different services, such as payments, consumer loans etc. This limits the scope for effective oversight and design of entity-based regulations.

» **Systemic risk to financial stability:**

Innovative financial products by BigTechs can increase their interconnectedness with the financial system and even lead to **shadow banking**. These large fintech enterprises can possibly transmit shocks, increase vulnerability of financial systems, and even become 'too big to fail'.

» Shadow banking are unregulated

financial intermediaries that facilitate the creation of credit across the global financial system.

» **Product linkages and cross-subsidies:** A big tech e-money issuer or digital bank could offer financial services at a steep discount because it expects to tap other revenue streams that would grow by offering financial services.

## New Regulatory challenges

» **Challenges in Techno-governance:**

» **Skill gap among financial regulators:**

These typically include areas such as: cyber security, legal (e.g., to assess outsourcing contracts), data science and statistics (e.g., to manage and extract insight from big regulatory datasets), technical knowledge on emerging technologies and their impact on financial market dynamics (e.g., volatility of crypto-assets) etc.

» **Nature of Decentralized systems:**

Decentralized solutions such as crypto-assets and peer-to-peer or DeFi platforms, may prove more difficult to regulate and supervise if a central governing body is absent.

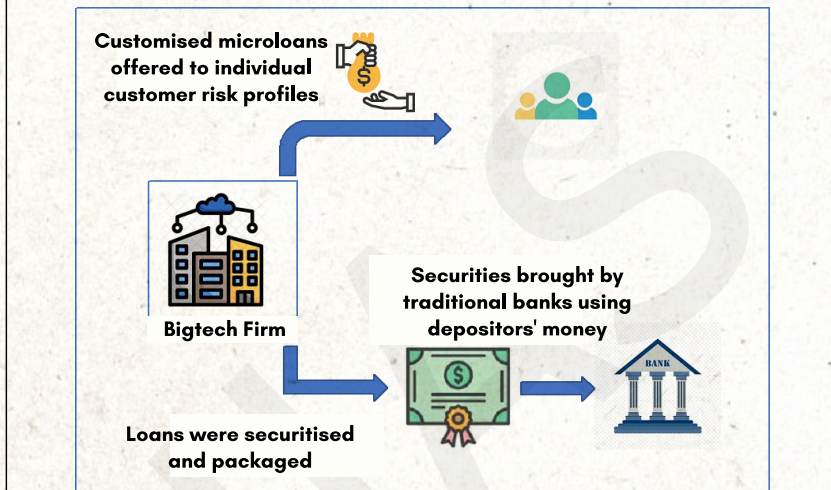
» **Gaps in the digital identity landscape:**

Fintech sector has to still rely on physical identity protocols for authentication and KYC purposes. Use of physical identities can lead to issues like-

- ▶ Fraud Entities using false information or stolen identities to gain illicit access to services.
- ▶ Inefficient and costly onboarding and know-your-customer (KYC) processes.
- ▶ Highly manual and time-consuming compliance processes increasing scope for human error.

### China's case: How Bigtech firms became interlinked with the banking system?

Chinese bigtech platforms engaged in risk transformation of funds by securitisation and selling of microloans by lenders to investors including banks.



Loans were securitised and packaged

» **Product linkages and cross-subsidies:** A big tech e-money issuer or digital bank could offer financial services at a steep discount because it expects to tap other revenue streams that would grow by offering financial services.

### Is it prudent to use AI in financial services?

AI is expected to turn into an essential business driver across the Financial Services industry, generating new revenue potential through **new products and processes, process automation, risk management, customer service and client acquisition.**

However, Fintech applications based on AI present several risks including **opaque processes, possibility of embedded bias, difficulties in placing accountability in case of regulatory failures, limited supervisory and regulatory capabilities among government agencies, adverse impacts of replacement of human touch in financial services** etc.

Therefore, safe deployment of AI based services in the Fintech calls for a **responsible use of AI** with appropriate accountability frameworks and re-examination of principles and supervisory techniques to address the risks.





- ▶▶ **Low capacity of fintech for regulatory compliance:** FinTechs, while possessing vast technological knowhow and new ideas, lack the expertise to navigate the regulations and licensing discipline of the finance industry.
- ▶▶ **Supra-national nature of fintech firms:** Regulations for the fintech sector, specifically relating to cybersecurity, risk management etc., are fragmented across nation-state boundaries.
- ▶▶ **Financial services are being embedded in non-financial activities:** The boundaries between social networks, digital economy platforms, and financial services are blurring.

## How can we facilitate the growth of Fintech whilst managing associated risks?

Based on a deeper understanding of the fintech market and its consumers, as well as an assessment of existing regulation, policy makers need to devise an appropriate strategy to reap the multitude of benefits offered by Fintech.

### Safeguarding consumer protection and fostering consumer demand and confidence

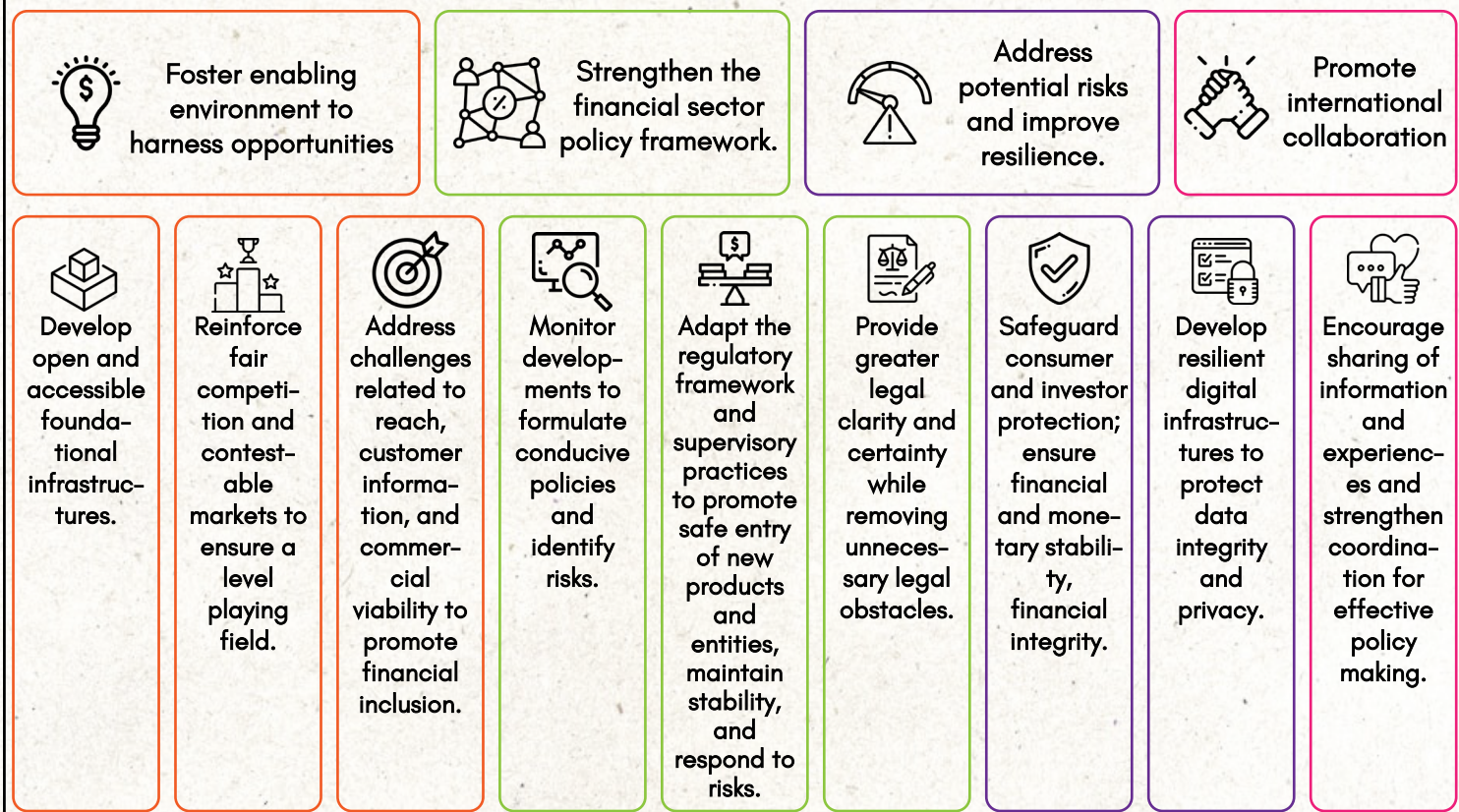
- ▶▶ **Authorization and vetting requirements:** Requiring fintech entities to be vetted prior to being granted license or registration.
- ▶▶ **Segregation of client funds:** Requirements that consumers' funds be segregated from other funds held by a fintech entity and held with appropriately regulated institutions.
- ▶▶ **Mandating content of terms and conditions:** Provision of standardized information summaries/ key facts statements (KFSs), appropriate warnings and information for consumers can be made mandatory.
- ▶▶ **General conflict mitigation obligations:** This may include compulsory disclosure of conflicts and adequate policies and administrative arrangements among fintech to prevent conflicts of interest from harming the interests of the consumers.
- ▶▶ **Establishing Algorithmic accountability** based on key principles of fairness, explainability, auditability, responsibility, and accuracy.
- ▶▶ **Awareness building and efforts to improve financial capability** for both consumers and industry through measures such as awareness campaigns and financial capability initiatives and tools.

### Identifying, mitigating, and addressing risks to financial stability and integrity

- ▶▶ **Appropriate risk management guidelines:** Fintech entities can be subjected to general risk management and prudential rules that often apply to traditional financial counterparts.
- ▶▶ **Establishing supervisory framework to mitigate cyber risks:** The framework can typically consist of measures such as creating a documented cybersecurity program or policy; identifying critical information assets; cyber-event reporting and cyberthreat intelligence sharing networks etc.
- ▶▶ **Promoting data minimization and privacy-by-design for fintech entities:** For data collection and use, fintech companies should be encouraged to follow consent-based approaches to data privacy, allowing users to exercise greater access to and control over their data.
- ▶▶ **Enhancing cooperation, both interagency and cross-border:** Collaboration mechanisms may be formalized to cover cross-cutting issues, such as Money laundering, financing of terrorism practices or consumer protection, with other financial sector regulators.
- ▶ In this regard, global standard-setting bodies and international bodies like the IMF and World Bank can play a critical role by developing instruments like 'Bali Fintech agenda'.

## Bali Fintech Agenda

Outlined by the World Bank Group and IMF, the agenda advocates embracing the promise of fintech while managing risks to consumers and to the stability and integrity of the financial system. It broadly aims to promote 4 objectives:



## Maintaining healthy competition and providing regulatory oversight for BigTechs

- ▶ **Ensuring equitable access to data:** Open banking systems and accessible government data and financial infrastructures can help foster competition and provide a pathway for fintech firms to offer services efficiently.
  - ▶ For instance, automated access to government data platforms has enabled banks in India to approve MSME and personal loans online in under an hour from over 20 to 25 days.
- ▶ **Securing Data Protection and Data-Sharing** through “purpose specificity” and “security requirements”
  - ▶ **‘Purpose specificity’:** It requires the user’s data to be collected and utilized for the purpose consented by the respective user.
  - ▶ **‘Security requirement’:** It specifies that the bigtechs should put in place adequate organizational measures to protect the integrity, confidentiality, and availability of users’ data.
- ▶ **Encouraging Data portability:** It can enable users to get their personal data back from bigtechs for their own purpose or ask to transfer their data to a third party in a technically feasible format.

## Strengthening Techno-Governance mechanisms

►► **Building proper expertise:** Financial supervisors' knowledge, skills, and tools should keep pace with the speed of innovation and related risks, including cyber threats. Regtech and Suptech solutions could be excellent catalysts for this.

►► **Developing Digital Identity ecosystem for Social good:** The digital ID ecosystem needs to be designed to ensure privacy, and be user-centric, open and flexible.

Regtech and Suptech: Possible solutions to regulatory hurdles?	
<p><b>Supervisory technology (suptech)</b> is the use of innovative technology by supervisory agencies to support supervision. It helps supervisory agencies to digitise reporting and regulatory processes, resulting in more efficient and proactive monitoring of risk and compliance at financial institutions.</p>	
Technology	Example applications
<b>Automated Reporting</b>	Ability to pull data directly from banks' IT systems
<b>AI</b>	Automated data validation and consolidation
<b>Chatbots</b>	Answering consumer complaints while collecting information that could signal potential areas of concern
<b>Bigdata</b>	Market surveillance, misconduct analysis as well as microprudential and macroprudential supervision
<p><b>RegTech (regulatory technology)</b> uses technologies, such as cloud computing, big data and artificial intelligence, to meet regulatory compliance while automating parts of the process. Some examples of RegTech applications are provided below-</p>	
Technology	Example applications
<b>Machine readable code</b>	Automated processing of new regulations
<b>Search functions</b>	Identifying relevant regulations
<b>Chatbots</b>	Providing easy regulatory advice
<b>Big data</b>	Analysis and synthesis of data for reporting
<b>(Robotic) process automation</b>	Reducing manual, human tasks
<b>Machine learning</b>	Prioritizing and optimizing reporting, Horizon scanning
<b>Blockchain/distributed ledger technology</b>	Tracking and verifying data
<b>Cloud-based platforms</b>	Effective data management and storage
<b>Natural language processing</b>	Legislation scanning, information management, labelling
<b>Surveillance/image recognition</b>	Identify verification

# Conclusion

FinTech has the potential to reshape the financial services and financial inclusion landscape in India in fundamental ways. There is a need to strike a subtle balance between effectively utilizing FinTech while minimizing its systemic impacts. Policymakers need to put in place a timely and proportionate regulatory and supervisory approach to managing financial risks arising from fintech. Ensuring financial stability, safety, and integrity will remain the core mandates, and these can, in turn, contribute to sustainable development amid healthy innovation and increased competition.

## TOPIC AT A GLANCE

<b>FinTech</b>	<div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px; display: inline-block;"> <b>Classification of Fintech services</b> </div>	<b>Digital Payments:</b> Digital Wallets; Prepaid Payment instruments (PPIs); Cryptocurrencies etc.
<b>Technologically enabled financial innovation</b> that result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services.		<b>Alternative lending:</b> P2P lending; Crowd Funding; Buy Now Pay Later etc.
		<b>Wealthtech:</b> Robo Advisors ; Algorithmic trading etc.
		<b>Banking:</b> Neobanking; Customer Onboarding Platforms etc.
		<b>InsurTech:</b> Insurance Web aggregator; Micro insurance etc.
		<b>RegTech:</b> Identity Management & Control etc

### Factors driving the growth of Indian Fintech industry

- ▶▶ **Development of India Stack** (UPI, Aadhaar, E-KYC, Digilocker etc.).
- ▶▶ **Technological advancements in financial sector** through use of artificial learning, machine learning, big data etc.
- ▶▶ **Conducive regulatory framework:** RBI's guidelines and frameworks; Regulatory sandbox; Development of licencing framework for Payments Banks; launch of Account Aggregator (AA) network etc.
- ▶▶ **Changes in consumer behavior and favorable demography:** Rise of Tech-savvy generation and digital native; Push provided by demonetization and covid-19; Growing Financial inclusion and digital literacy etc.
- ▶▶ **Developments in digital identity ecosystem and launch of e₹ (digital Rupee).**
- ▶▶ **Flourishing entrepreneurship culture; Industrial collaborations; financial support and Dedicated centre.**
- ▶▶ **Positive fallouts from sector specific schemes for technological and digital transformation** like National Digital Health Mission (NDHM).

### Positive implications of the Fintech industry for the society and economy

- ▶▶ **Enhancing efficiency of financial services:**
  - Improved customer service.
  - Reduced transaction and operational cost and time.
  - Enhanced transparency and democratization.
  - Provision of personalized user experience; etc.
- ▶▶ **Strengthening and deepening of India's capital markets:** Retail-isation of stock markets; Enhanced Financial literacy; Reduced risks etc.
- ▶▶ **Driver of Social Good:** Ensuring Financial inclusion of the unbanked and underbanked, Enhancing Social Security coverage and Propelling Sustainable investment and climate finance.

### Plausible risks associated with fintech enterprises

- ▶▶ **Risks to Consumers:** Fraud/misconduct; **Adverse** impacts due to technology unreliability or vulnerability; Convoluted Grievance redressal; Business failure or insolvency; Inherent challenges for disclosure and transparency etc.
- ▶▶ **Ethical concerns:** Conflicts of interests; Misrepresentation of information and misleading marketing; Environmental implications; Unfair outcomes of Algorithmic decision-making.
- ▶▶ **Threats posed to Integrity of financial systems:** Cyber risks and inadequate Data protection; Proliferation of illegal activities; Lowered resilience of financial markets; Decreased effectiveness of policy transmission.
- ▶▶ **Risks posed by BigTechs:** Stifled competition and threat to data privacy; Complex governance structure; Systemic risk to financial stability etc.
- ▶▶ **New Regulatory challenges:** Challenges in Techno-governance like skill gap among financial regulators, nature of Decentralized systems etc. Low capacity of fintech for regulatory compliance; Supra-national nature of fintech firms etc.

### Way Forward

<ul style="list-style-type: none"> <li>▶▶ <b>Safeguarding consumer protection and fostering consumer demand and confidence</b> <ul style="list-style-type: none"> <li>➤ Authorization and vetting requirements.</li> <li>➤ Segregation of client funds.</li> <li>➤ Mandating content of terms and conditions.</li> <li>➤ General conflict mitigation obligations.</li> <li>➤ Establishing Algorithmic accountability.</li> <li>➤ Awareness building and efforts to improve financial capability.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▶▶ <b>Identifying, mitigating, and addressing risks to financial stability and integrity</b> <ul style="list-style-type: none"> <li>➤ Appropriate risk management guidelines.</li> <li>➤ Establishing supervisory framework to mitigate cyber risks.</li> <li>➤ Promoting data minimization and privacy-by-design for fintech entities.</li> <li>➤ Enhancing cooperation, both interagency and cross-border.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>▶▶ <b>Maintaining healthy competition and providing regulatory oversight for BigTechs</b> <ul style="list-style-type: none"> <li>➤ Ensuring equitable access to data.</li> <li>➤ Securing Data Protection and Data-Sharing.</li> <li>➤ Encouraging Data portability.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▶▶ <b>Strengthening Techno -Governance mechanisms</b> <ul style="list-style-type: none"> <li>➤ Building proper expertise among financial regulators.</li> <li>➤ Developing Digital Identity ecosystem for Social good.</li> </ul> </li> </ul>