

TECHNOLOGIES IN FINTECH INDUSTRY AND CYBER REGULATIONS IN INDIA

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INTRODUCTION

Fintech is the short form of Financial Technology. It is a technology that has been used to support and enable not only banking services but also other financial services, in a much better way than traditional methods used in the delivery of financial services. Fintech is used to help companies, business houses and even individual customers to manage their finances in an effective way. Fintech is based on various analytical tools or software so that comparative analysis of financial status of a company or similar other companies across the world became easier and it helped a lot to the investors in making decisions 'where to invest?' This technology appeared in 21st Century and is going to revolutionize the banking sector like mobile banking, the trading or investment business as it is going to publish market research analysis results in real time a very short time to help investors to make their decision. According to NASSCOM, Indian Fintech software market is expected to rise to USD 2.4 Billion by 2020 from current USD 1.2 Billion. The transaction value for the Indian fintech sector is forecasted to reach USD 73 billion in 2020 growing at a five-year Compound Annual Growth Rate (CAGR) of 22 per cent. According to PWC report in 2017, India offers the highest expected return on investment (RoI) on Fintech Projects at 29% as compared to global RoI of 20%. Fintech has two basic components: a) technology-oriented innovation in the traditional banking sector and b) the emergence of new delivery models to provide financial services.

GROWTH AND IMPACT OF FINTECH

Financial institutions have been traditionally governed by complex, time consuming process and involve multiple levels of decision making but, with the advent of fourth industrial

revolution i.e. digital revolution since the middle of the last century, financial technology or fintech has achieved exponential growth through their innovative solutions, are trying to create e-governance and financial foresight in order to minimise financial, operational & regulatory risks. Fintech has disrupted all aspects of the industry including, banking and capital markets, asset and wealth management, insurance, and funds transfer and payments. The lending and payments sector is anticipated to experience a high level of disruption with the emergence of online platforms that facilitate lending and borrowing between individuals and businesses, peer-to-peer personal loans, and innovative models for lending to small and medium enterprises. The applications of fintech industry may be broadly categorized as follows:

1. Payments

- a. *Non-Traditional payment Scheme* (Mobile Money, Peer to Peer Foreign Exchange(P2P FX), cryptocurrency like Bitcoin, Ethereum, litecoin ripple and digital cash as cash credits like e-coins, E-wallet, transfer money)
- b. *Cashless world* (Integrated billing, Mobile payments)

2. Insurance

- a. *Disaggregating forces* (Digital distribution, autonomous vehicle, Strong economy)
- b. *Connected world* (Wearable computers, Internet of things, Advanced sensors)

3. Deposits and Lending

- a. *Alternative lending platforms* (Peer to Peer lending)
- b. *Shifting customer preferences* (Third party Application Programming interfaces (API), Mobile 3.0, Virtual technologies)

4. Capital raising

- a. *Alternative capital-raising platform* (Alternative due diligence, Crowd funding, Virtual exchanges and smart contacts)

5. Investment management and market provisioning

- a. *Next-gen process externalisation* (Capability sharing, Open source IT, Blockchain, Big Data, Advanced algorithms, Machine Learning, Cloud Computing)
- b. *Empowered investors* (Retail algorithmic trading, Social trading, Automated advice and management)

Fintech has not only helped in the growth of start-ups but it also disrupting the way of customer services of traditional banking system. The increasing adoption of big data or data science,

development of better methods risk assessment, algorithm-based investments, and platforms for users to analyse and optimise their portfolios have revolutionised the asset and wealth management industry.

Blockchain technology has disrupted fintech through the development of cryptocurrencies, which are revolutionising payments and money transfers through the elimination of middlemen and development of 'smart' contracts. Global trends, such as the decreasing age of the average workplace and increasing urbanisation, digitisation and disposable incomes, have contributed to the evolution of the fintech industry.

Fintech is a promoter of disruption in the market. Traditional financial institutions are likely to lose revenues to the innovators and around 88% of such institutions believe their business is at risk. According to a report by PwC, 30% consumers are in favour of usage of non-traditional financial service providers. To counter such disruption, 77% of the traditional financial institutions are increasing internal efforts to innovate and 56% of such organisations have put disruption at the heart of their strategy. Fintech companies create an ecosystem that fosters the collection of vast amounts of data and builds trusted relationships with client thus, 82% of financial institutions expect to increase fintech partnership within 2020. Growth and market success of any fintech hub originate from an integrated ecosystem.

UNDERSTANDING FINTECH ECOSYSTEM

Fintech may be defined as technology-based businesses that compete against, enable and/or collaborate with financial institutions. Fintech start-up firms engage in external partnerships with financial institutions, universities and research institutions, technology experts, government agencies, industry consultants and associations. Through these partnerships, they create a highly integrated ecosystem that brings with it the expertise, experience, technology and facilities of all the entities together. The pillars of fintech integrated ecosystem may be grossly expressed as follows:

1. Government and Regulators:

- The Govt. of India along with regulators like RBI, SEBI, TRAI & IRDA guiding the Indian economy towards digitalization and establish a strong foundation for Indian Fintech ecosystem.
- The Government is responsible for every success and failure of such economy.
- The Govt. of India has already taken a few positive steps in this direction like in Start-Up India project initiated in 2016, through Pradhan Mantri Jan Dhan Yojana around 200 million unbanked individual has been linked with banking sector, linking of Aadhar data in both financial and non-financial sectors, exemption of taxes and tax rebates for Start-Up initiatives etc.
- The regulation and the regulator depend on the type of fintech business.
- Overlapping jurisdiction of different regulators for a fintech business is possible.
- The regulators like RBI & SEBI implementing regulations for securities market; IRDA regulates insurance related businesses & inter alia, web aggregators and insurance agents; and TRAI regulates telecom related activities.
- The payment sector is regulated by RBI under the Payment and Settlement Systems Act, 2007 and the Payment and Settlement System Regulations, 2008. The payment systems include ATM networks, card payment network and pre-paid instruments (Mobile wallets)
- The SEBI (Investment Advisors) Regulations, 2013 regulate investment advisors, the SEBI (Stock-Brokers and Sub-Brokers) Regulations, 1992 regulate stock brokers and the SEBI (Merchant Bankers) Regulations, 1992 regulate merchant bankers.
- The RBI issued directions on NBFCs through Peer-to-Peer Lending (P2P Master Directions) on 4th October, 2017 and emphasis has been put on registration of a Peer-to-Peer Lending platform (NBFCP2P). NBFCP2P acts as an intermediary that is providing online market or a platform to the parties involved in P2P lending. This platform also assists in distribution and repayment of the loans availed. The NBFCP2P is not permitted to lend on its

own; it can permit the international flow of funds or facilitate or permit secured lending on the platform.

2. **Investors:**

- Provide early stage funding support and market access
- Angels, venture capital and PE houses are all looking at Fintech as viable investment.
- Fintech investment in India is increasing from USD 247 Million in 2014 to USD 1.5 Billion in 2015 i.e. more than 500% growth.
- Investors now realized the scope of fintech is not only restricted to Payment sectors but is widely distributed in sub-segments like investing, lending, wealth management, credit reporting, Artificial intelligence based financial services.

3. **Financial Institutions:**

- Banking, Financial services and Insurance (BFSI) community, which include bank, NBFCs and other financial institutions, are affected by the disruption created with the advent of fintech.
- Banks are now collaborating with Artificial Intelligence Start-Up initiatives to incubate and create alliances on a variety of platforms such as payment wallets, investment intermediary, online client acquisition etc.
- Financial institutions are providing open platforms to the start-up companies and developers through APIs and also providing necessary microenvironment for incubation of such innovative start-ups.
- Fintech companies prevailing in various sector in India are:
 - a) **Lending Sector:** Paisabazar, EarlySalary, Lendingkart, CreditMantri, LoanTap, ZestMoney, Faircent etc.
 - b) **Payments Sector:** Razorpay, Paytm, Flipkart, Phone-Pe, Mobikwik, ItzCash, FinoPayTech, Chillr Etc.
 - c) **Financial Advisory Platform:** NiYO Solutions, IndianMoney etc.
 - d) **Personal Finance Management:** BankBazaar, ClearTax, FundsIndia, MoneyView, Fisdome, ScripBox etc.
 - e) **Insurance:** Easypolicy, RenewBuy, SecureNow etc.
 - f) **Online Trading Platform:** Upstox, Religare etc.

g) **Cryptocurrency**: UnoCoin, Zebpay etc.

h) **Artificial Intelligence**: active.ai

4. **Start-ups:**

- Evolutions of Start-Ups are imperative to the growth of fintech industry.
- The Start-Up may be defined as an entity working towards innovation, development, deployment, and commercialisation of new products, processes, or services driven by technology or intellectual property
- The key trends of Indian Start-Ups are: a) *use of Advanced Technology*, b) *Rising focus on B2B solutions*, c) *Upsurge in growth stage funding*, and d) *Improving support structures*.
- Start-ups have played a major role in the growth of Artificial Intelligence innovations by offering solutions to new organisations to redefine their products, achieve operational excellence and create extra revenue generation opportunities.

5. **Incubators, Accelerators and Innovation Labs:**

In India, the role of incubators, accelerators and innovation labs are critical and not just limited to funding, mentorship and peer connections but they also provide exposure to financial industry and soft skills development & training programmes.

6. **Technology Vendors:**

- Technology vendors like IBM, Wipro, Cognizant, TCS etc. are playing a vital role in the development of various platform, application or services for establishment of fintech ecosystem in India.
- IBM is working with Hyperledger Programme in association with Linux Foundation to develop a Blockchain solution.
- IT firms like Cognizant, TCS etc. with a community development focus, are not only investing funds, but also engaging with other accelerators to multiply their reach and impact in the developing digital economic framework of the country.

7. **Customers or users:**

- Indian customers (both consumers and enterprise) are adopting fast with the fintech disruption.

- They have adopted well with the usage of smart phones and internet applications.
- They can comfortably use various mobile app based financial services like booking railway tickets using IRCTC App (UTS APP), usage of mobile wallet money, transfer of funds or making payments through Paytm, Freecharge, booking of cinema tickets through App based services etc.
- Indian e-commerce businesses have shown maturity in providing services to the customers satisfactorily.

8. Educational organizations:

- Indian educational organizations are gradually setting up environment for skill development to develop efficient manpower for fintech industry in this country.
- Leading organizations like IITs are organizing various programme for development of entrepreneurial skills, promote innovative research and product developments projects.

Fintech platforms:

With an increasing internet usage, many entrepreneurs in India are taking up the opportunity to explore the fintech industry. In India, individual consumers and enterprises both have accustomed with fintech tools like payments, digital lending, and credit analysis.

Listed below are a few fintech platforms working in India:

Rubique:

- A lending platform in India.
- Rubique empowers individuals and SMBs with an easy access in transaction of finance related to loan, credit card, and insurance products.
- Built on a proprietary matchmaking algorithm, it is been integrated with the financial institutions' systems for real-time processing, and for providing online approvals to the customer.
- The advanced technology solution not only reduces the processing time significantly but the data analytics done on hundreds of data points helps to bring predictability.

LoanTap:

- LoanTap is a fintech lending platform delivering flexible EMI free loan products to salaried professionals.
- It uses technology to deliver smart and innovative products.
- LoanTap is known for its unique product portfolio and for providing a quick financial support to customers.

Faircent

- India's largest peer to peer lending website.
- Faircent is a platform that is used to provide direct loan to the customers and thereby eliminating intermediaries and their margins.

Paytm

- One of the most useful payment App.

CreditMantri

- CreditMantri is a multi-services platform to provide loans to the borrower.
- It was founded in the year 2012.

BankBazaar/ PaisaBazaar

- Chennai based online financial market place, came into existence in 2008.
- It is a lending platform, provide customers e-approval and quick disbursal of loan.
- Single platform with multiple functions like providing credit card services, smart financial tools which enable customers to take financial decision, investment in insurance, mutual funds etc.

PolicyBazaar

- India's leading insurance web aggregator.
- Single window platform dealing with multiple insurance segments.

OPERATIONAL PLATFORMS AND OPEN APPLICATION PROGRAMMING INTERFACES (API) OF FINTECH INDUSTRY

The fintech technological platforms usually use data Science and machine learning algorithms to make trading decisions comparatively better than traditional methods. Three emerging themes Open banking, Blockchain technology and Artificial Intelligence has huge potential to change the face of financial industry. The most active areas of fintech technology are:

1. **Cryptocurrency:**

Like Bitcoin, Ethereum, litecoin ripple and digital cash as cash credits like e-coins, E-wallet, transfer money.

2. **Block-chain Technology:**

A digital ledger technology (DLT) used to maintain records on a network of computers without any central ledger. This requires application of quantum computing, e.g.- Coinbase.

3. **Smart contracts:**

Mainly utilize Blockchain to execute contracts between buyer and seller.

4. **Open Banking:**

Traditional closed banking systems when allowing third party to access data in real time through open banking standards. Open API is the new reality leading to an open digital economy. This concept leans on Blockchain to build applications of connected network of financial institutions and third party service providers. e.g. – all in one money management tool MINT.

5. **Insurtech:** Used for Insurance industry to simplify and streamline the process of the concerned industry.

6. **Regtech:** Help financial institutions to meet the needs of industry compliance rules, especially covering Anti-Money Laundering regulations and KYC protocols in order to fight fraud.

7. **Robo-advisory:** This can be revolutionary in personal finance management. This technology utilize algorithms to automate investment advice to lower its cost and increase accessibility, e.g.- Betterment, a New York based company.

CYBER SECURITY ISSUES AND CHALLENGES IN CYBER LAW

The challenges or security threats in fintech industry include:

1. Loss of financial data due to hacking;
2. IoT and cloud computing has given new opportunity to the hackers and cybercriminals to access sensitive data;
3. Foreign sponsored hacking;
4. Risks related to mobile banking;
5. Manipulation/ Alteration of financial data;
6. Malware threats;
7. Sophisticated spoofing;
8. CHIP/PIN of credit or debit cards may also be hacked etc.
9. SIM swap fraud at Mumbai in August, 2018
10. Cyber Attack on COSMOS Bank, Pune Branch in August, 2018
11. Canara bank ATM servers hacked at Kolkata in July 2018
12. Over 22,000 websites were hacked between the months of April 2017 to January 2018.

The information Technology (Reasonable Security Practises and Procedures and Sensitive Personal Data or Information) Rules, 2011 (Privacy Rules) lay down provisions how data can be stored, processed, transferred and secured.

Any use or exchange of the “Unique Identification Number” which is treated as sensitive personal information would also be subject to regulations as mentioned in the provisions of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016 and the Compendium of regulations, circulars and guidelines of UIDAI.

A committee has been constituted by the Govt. of India to address issues concerning data protection and a draft Data Protection Bill has been prepared in this regard. The committee has identified 7 principles for data protection law that include:

1. Technology agnosticism – the law must be flexible enough to adopt with changing technology;

2. Deterrent penalties – the penalty should be stringent enough to discourage wrongful acts; and
3. Controller accountability – the data controller should be accountable for processing of data.
4. Cross border flow of data
5. Data localisation
6. Formation of a data privacy authority

The data privacy rules are applicable to any person located within India. Thus, outflow of data from India is falls within restrictive prerogative of the privacy rules but the rules has no regulation over the inflow of international data in India.

CONCLUSION

September 26, 2018, the verdict of the Supreme court in JUSTICE K.S. PUTTASWAMY (RETD.) AND ANOTHER VERSUS UNION OF INDIA AND OTHERS case may be summarized as follows:

- Justice A.K. Sikri said there is no possibility of duplicating Aadhaar due to the biometrics and added that it collects only minimum demographic and biometric details. He also said Aadhaar is “unique in an unparalleled way.”
- The Bench struck down section 57 of the Aadhaar Act, which allows private entities to use Aadhaar for verification purposes.
- Section 33(2) that allows UIDAI to share data with specially authorised officers in the interest of national security, was also struck down.
- Three of five judges were of the view that Aadhaar is valid. “Aadhaar gives dignity to the marginalised. Dignity to the marginalised outweighs privacy,” Justice Sikri’s judgment read.
- Aadhaar requirement by CBSE, NEET, and UGC has been struck down, but Aadhaar-PAN linkage has been upheld.
- Seeding Aadhaar with mobile phone numbers and bank accounts is not needed. Schools too, cannot insist on Aadhaar for admission of students.

- Justice D.Y. Chandrachud, in his judgment, said that passing the Aadhaar Act as a Money Bill was a fraud on the Constitution. In this, he dissented from the majority opinion. He also held section 7 of the Act, which makes Aadhaar mandatory for state subsidies, as unconstitutional.
- Data collected for authentication purposes can be held for only six months. The Aadhaar Act had said that data can be held for five years.
- Justice Chandrachud ordered service providers to delete any information collected by them after linking Aadhaar with SIMs.
- Justice Ashok Bhushan concurred with the majority but differed on a couple of points — he held that beneficiaries cannot be denied services or subsidies in the name of Aadhaar, and that the passage of the Act as a Money Bill can be subjected to judicial review.

This verdict hit the fintech industry adversely. The order has crippled the ability of fintech industry to facilitate instant customer on-boarding. Furthermore, the cost of customer acquisition will also increase if physical verification is mandated. The resulting cost burden will also affect the fintech industries bottom-line adversely as they operate on wafer-thin margins. The Government should take positive steps towards data privacy and protection of sensitive financial data and also need to implement cost effective measures for authentication and verification of customers for the growth of fintech industries. Traditionally, fintech industry is an offline business which is being pushed online. Thus, if anyone has to bolster adoption, he needs to incentivize online behaviour in the form of cash incentives being doled from the govt. on the lines that are similar to the direct transfer benefit system devised for the GST. Similarly, our existing IP laws are inadequate and the government should step in to create effective safeguards to protect the business from piracy and cloning of established business names. About 62% of personal medical expenses are met through personal means in India every year. In fact, 40 million Indian households are pushed into a debt trap annually because their medical expenses exceed their household income. The figure clearly highlights the urgent need for the families to include insurance in their financial planning. The growth of fintech industries will be beneficial not only for the individuals of this country but also for the future economy of this country as a whole.