How Technology May Change the Game – Creation of Investment Awareness

Neha Yadav, T.V. Raman

Abstract: With the growing importance of Innovation and use of technology, rapid development in Fin-tech has dramatically transformed finance industry. This paper seeks to analyze the recent trends, opportunities and risks of Fin-tech in finance sector. Research aims to assess the impact of technological advancements in creation of investment awareness. Some feels Fin-tech as a threat to conventional financial practices; others believe that Fin-tech has become a challenge that can be turned into an opportunity as it provides more flexibility. In order to analyze the success and failure of Fin-tech in revolutionizing the finance industry, the researcher has studied the development of Fin-tech in financial market through publicly available statistical information from various surveys conducted by and data of various surveys conducted by EY Fin-tech Index, Yodlee etc. It has been extremely challenging for finance sector to adopt technological advancement. Study finds that how Fin-tech provides benefit to consumers by making it easy to choose significant option and providing access to core financial services.

Keywords: Fin-tech, Technology, Investment Awareness, Financial services.

I. INTRODUCTION

The financial service segment has a past filled with early reception with regards to new innovations. It is easy to forget that service which currently frame some portion of the banking services –, for example, ATMs and charge cards – which once represented radical innovations. (Bate, 2015) Until now, technological adoption and advancement inside financial industry has, generally, been division driven: executed by banks or insurance agencies to refresh and upgrade existing capacities and administrations, without testing fundamental plans of action. One may sensibly describe these cycles after some time as a development or evolution. (Bate, 2015). In India, the majority of the Fin-tech organizations including the exponentially developing M-wallets have been supplementing existing financial services provider, rather than totally dis-intermediating them. Initially, the Indian financial service sector was portrayed branch managing an account, paper-based procedures with limited straight through processes regardless of persistent interests in innovation and frameworks by Indian Banks and Financial Services Institutions. (Deloitte, 2017)

A. Role of Investors Awareness

Financial education is progressively important, and it is not just for investors. It is easy for families to choose how to plan in finances, investing in house purchase, and guarantee an income. (Laboul, 2006). Financial awareness and information of how to deal with your cash, engages people and makes them progressively autonomous. Financial Literacy is important to give enough pay in retirement, to stay away from insolvency, defaults and non-payment. On the other hand, individuals with low education and knowledge, are less wealthy and pays pointless expenses for financial services or products. (Zucci, 2018)

B. FIN-TECH – Finance & Technology

Initially the term Fin-tech was described as Financial Services Technology Consortium, an undertaking started by Citigroup to invigorate technological collaboration. However, presently Fin-tech exhibits the organizations which utilize technological innovation in their business forms. Fin-tech is the mix of Financial Technology which refers to financial services empowered by technologies to provide new and innovative products & services. (Arner, Barberis, & Buckley, 2015) Innovation of printing press showed up as first appearance of Fin-tech in the economy. telegraph essentially supported finance industry with innovative progression. Technological adoption in India has increased significantly over the last two years and according to EY’s Fin-tech Adoption Index 2017. India has progressed to become the market with the second-highest Fin-tech adoption rate (52%) across 20 markets globally. Technological adoption in India has expanded essentially in the course of the most recent two years and as indicated by EY’s Fin-tech Adoption Index 2017, India has advanced to wind up the market with the second-highest Fin-tech adoption rate (52%) crosswise over 20 economies universally. Indian purchasers show 50—100% higher reception rates than worldwide averages. (Gulamhuseinwala, 2017)

II. OBJECTIVES OF STUDY

➢ To study the recent trends, key drivers, opportunities and risks of Fin-tech in finance sector.
➢ To demonstrate the innovative changes through financial technologies in financial market
➢ To analyse the impact of technological advancements in creation of investment awareness.

III. SURVEY AND ANALYSIS

To analyse the impact of Fin-tech in Indian economy, top 5 surveys conducted by financial firms has been taken as reference to find out the common technological advancement in the are of financial industry. Fin-tech segments have been identified which plays an important role in changing financial service sector from traditional to digitally enabled. Surveys statistics taken are EY Fin-tech adoption Index, PWC Fin-tech survey, Infosys survey in collaboration with Efma, Capgemini Fin-tech in banking survey.
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Sample Survey 1: PWC Survey

Conducted By: PWC

Purpose: To analyse the growing influence of fintech on Financial Services and to assess the continuous rise in newer business models and emerging technologies in financial services sector.

Sample size: 1305 respondents

Profile of respondents: Fintech executives, Banks, Asset management company, CEO’s, Directors, HHO’s, Risk managers et al.

Population: Asia, Asia, Americas, Australia, Oceania

Location: Data Analytics

Technological advancements

- Mobile Technology
- Artificial Intelligence
- Cyber security
- Blockchain
- Biometrics

Sample Survey 2: EY Fin-tech Index

Conducted By: EY Fin-tech Index

Purpose: Purpose of this survey was to develop deeper insights into the current FinTech ecosystem in India and how it is shaping the emerging trajectory of Indian financial services. India leads in the analysis of fintech adoption rate in India. It provides insights into the FinTech trends that we see across key segments of the financial services ecosystem.

Sample Size: 22000 million interviews

Population: 22 million across globe

Location: India has progressed to become the market with the second highest FinTech adoption rate (35%) across 20 markets globally. This holds true for each of the five categories of services with high market penetration figures of 50%—

100% higher adoption rates than global averages.

- Retail financial needs: conducive environment. High investment rates and
- Responsive market place and incumbents are several factors that are driving growth of fintech in India.

Technological adoption areas

- Payments
- Financial Planning
- Insurance
- Savings and investments
- Borrowings

Sample Survey 3: Efma-Infosys Survey

Conducted By: Efma-Infosys Survey

Purpose: The study is about industry disruption and how banks can effectively work with startups to boost their innovation performance.

Sample Size: 140 Respondents

Results: This study confirms the importance of working with an innovation ecosystem rather than just an internal focus. Banks need to focus particularly on understanding and reacting to developments in the most disruptive technologies (e.g., mobility, advanced analytics and open APIs) and where startups are likely to have the most impact.

Technological advancements and adoption

- Payments
- Digital Marketing
- Insurance
- Lending
- Credit Scoring
- Saving and investments
- Blockchain Technologies

Sample Survey 4: Capgemini Survey

Conducted By: Capgemini

Purpose: This study is about how fintech is redefining the financial services customer journey. A comparison between traditional financial services and fintech enabled providers has been made to know the operational efficiencies changes.

Profile of respondents: Traditional financial services firms and FinTech firms including banking and

- lending, payments and transfers, investment management, and insurance

Results: FinTech firms’ primary competitive advantages are their agility to launch and

- print, their focus on customer experience, and their freedom from the burdens of legacy systems. However, they also face challenges in scaling their business due to a lack of trust, absence of a known brand, an outdated distribution infrastructure, capital, and regulatory compliance expertise that, historically, are the strengths of incumbent firms.

Technological advancements and adoption

- Analytics
- Artificial Intelligence
- Machine learning
- Sensor-based Technologies
- Biometrics
- Robotic
- Process Automation
- Chatbots
- Distributed Ledger Technology (DLT) etc
A. Technological Advancements in Financial Sector

The advancement in technology is moving at a fast pace. Ever though what will be invented in next 30 to 40 years from now? It’s mesmerizing to think what else is in store for humanity. Technology will keep on advancing as long as we exist. “The fourth Industrial Revolution see the heavy implementation of emerging technologies with a high potential of disruption.”(Committee, 2017). In fourth Industrial Revolution the emerging technologies came in different fields such as Robotics, artificial intelligence, Nano Technology, Computing, Bio-technology etc.

To analyze the recent advancement in Financial technologies Fin-tech survey of four companies has been analyzed. On basis of survey statistic researcher has derived four common disruptive technologies mentioned below:

![Emerging Technologies](image)

**Artificial Intelligence**

As per John McCarthy, it is “The science and building of making insightful machines, particularly canny PC programs”. Artificial Intelligence is a method for making a PC, a PC controlled robot, or a software think intelligently, in the similar way the human think. AI is practiced by learning how human mind thinks, and how people learn, choose, and work while endeavoring to solve an issue, and afterward utilizing the results of this investigation as a premise of creating smart and intelligent programming software and frameworks. (Tutorials, 2017)

In computer science, artificial intelligence, which is also called machine intelligence, is insight exhibited by machines, as opposed to the characteristic knowledge shown by people and different creatures. “Higher efficiency and higher productivity at lower costs are among the benefits of machine learning, which uses statistical and mathematical models to draw inferences and patterns based on large sets of raw information. Machine learning provides competitive advantages such as lower costs, higher efficiency and revenue, higher productivity, and better compliance. From intelligent chat bots to personal financial advice or intelligent back-office processing, all can add directly or indirectly to positive customer experience. Thanks to firms’ capability for quickly processing vast amounts of data, AI and machine learning can be used for decision making, too.” (Bose & price, 2018).

In 2018, global AI spending is expected to reach USD19.1billion, of which the banking sector will account for 17% Banking and financial institutions are collaborating with technology companies and are looking at migrating from the current AI deployment model aimed at low-impact rule based processes to high impact cognitive and predictive process. AI is gaining momentum in India with over 400 AI-related start-ups and attracting investments of USD150 million, just over the last five years. (KPMG, 2018).

**Data Analytics**

Data analytics (DA) is the process of reaching to an inference about the information given by examining the data sets, progressively with the help of specific software’s and programming. “Data Analytics and techniques are generally used in business enterprises to make informed decision related to businesses and by researchers and specialists to verify logical models, speculations and theories”. (rouse & stedman, n.d.). “Analytics-based personalized offerings, immediate information, and instant processing will increase customer stickiness within their journeys. The availability of vast, yet exponentially growing amounts of structured data (such as financial transactions) and unstructured data (such as social media) present significant potential for firms to personalize offerings. Real-time, analytics-based input at customer decision points will help them complete their journey. Analytics can support retention by promoting loyalty-based programs that reward customers for identifying their personal preferences. Fraud-detection is another area in which firms are leveraging analytics by prompting customers for additional authentication when analytics-based algorithms raise a flag.” (bose & price, 2018).

**Block Chains**

The vast majority have known about Bit coin, the decentralized, trust less payment framework. Be that as it may, Bit coin is only one utilization of a more extensive idea known as block chain innovation, or just, ‘the block chain.’ Blockchain innovation made In conventional payment frameworks, centralization is important to monitor spending, and counteract ‘twofold spending of similar units. To comprehend its industry applications and legitimate repercussions, it is imperative to get a handle on how blockchain innovation functions. One can consider the blockchain as a record of exchanges i.e. ledger. A physical record is commonly kept up by a centralized expert, not by market members. The blockchain, nonetheless, is a circulated record or distributed which is on every participant's gadget. Every individual copy is updated at whatever point transaction or set of transactions is finished. The gadget of every participant or client is normally alluded to as a ‘node,’ which frames some portion of a system of nodes. (Desai, 2018)

**Robotics**

Robotic Process Automation enhances efficiency and makes it able for firms to deliver services with better returns on investments. “Via software tools, RPA automates repetitive operational tasks, resulting in reduced human effort, with the flexibility to scale at ease and with reduced costs and commitment. Initially, financial services firms focused on digital transformation of the frontend.” (bose & price, 2018).
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2018). Through NPA, it is possible to digitize and automate tasks in the middle and back-office such as processing vast quantities of data. “WorkFusion31 is an intelligent automation software company that allows companies to automate complex end-to-end processes by combining multiple automation techniques into one platform.” (Bose & price, 2018)

B. Fin-tech Segments

Fin-tech has emerged in all sectors of finance industry. Fin-tech can be differentiated on the basis of their functions such as financing, asset management, lending etc. To distinguish various Fin-tech firms, segments of Fin-tech has been identified. Following segments have been identified after analyzing surveys.

![Fintech Segments](image)

**Payments**

Payments have continued to migrate to digital channels like mobile payment adoption. Payments sector has done side-lines with cash and has become less visible to customers as customers prefer to purchase online and through mobile channels. Payment businesses are encountering intense pressure due to competition all over the world and regulatory policies. Mobile payment systems have not surpassed the existing card-based markets. The fundamental change to the original PSD (Payment service directive) is from two new entities:

- Payment initiation service
- Account information service

The major forces impacting payments were mobile payments, seamless payments and alternative payment rails.

**Financing**

Loans historically have been the business of banks, but Fin-tech start-ups have worked their way into the lending industry by creating online marketplaces that match borrowers with investors, sidestepping the laborious and often costly process banks use to evaluate borrowers and fund loans. (Bakker, 2015)

**Asset & Wealth Management**

Wealth management traditionally pairs clients with an advisor who examines assets and determines how to allocate them into different investment vehicles that raise the value of those assets over time. Start-ups have proven this process can be managed with algorithm.

Robo-advising — the automated management of investments — is a relatively new phenomenon driven by start-ups like Betterment and Wealth front. These companies allow customers to set their preferences, such as risk appetite, objectives, and terms. Based on these specifications, the rob advisor builds a profile of the customer and automatically creates a unique investment portfolio with assets automatically allocated across a number of classes. Customers can view their portfolio’s performance at any time and tweak their preferences. (Bakker, 2015)

**Insurtech**

Insurance is among the most underdeveloped areas of Fin-tech, bringing in just 1% of investments in 2014. However, a number of insurance start-ups are using the Internet of Things (IoT) and other technologies to break into the industry. Despite these barriers, some start-ups have found unique ways to improve different lines of insurance: Machine-to-machine (M2M) communications are improving auto insurance. Health insurance start-ups are embracing digital to simplify the user experience. (Bakker, 2015)

Fin-tech segments does not limit to four segments. There are many more according to different firms and their different functions. Through this survey researcher has tried to identify main segments which common for all.

C. Fin-tech Adoption Across Globe

![Figure 6](image)

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Source: EY FinTech Adoption Index, 2017

China is the leader in adopting Fin-tech services mainly for savings, investments and borrowing. Open APIs empower Chinese innovation stages to coordinate Fin-tech benefits inside their own stage, which encourage cross-selling and “rebinding” opportunities. Similar activities are being observed in other markets, as the US and the UK; while, China has shown charge in widespread platform adoption and ecosystem development. An adoption rate for internet budgeting, insurance services and financial planning are relatively close and generally follows an expected pattern among top five markets. Conversely, appropriation rates for speculations and reserve funds, just as getting administrations, demonstrate China as following altogether in front of alternate markets. In China, 58% of buyers have utilized Fin-tech reserve funds and speculation administrations, contrasted and 39% of Indian customers. The difference is much more prominent for the selection of Fin-tech obtaining administrations, with 46% of Chinese shoppers demonstrating they have utilized these administrations, contrasted and 20% of Indian customers. (Gulamhuseinwala, 2017)
D. Future of Fin-tech in India – Opportunities and Challenges

India’s Fin-tech sector may be new and young however is developing at a quick pace encouraged by larger market base, innovation, and government policies. Fin-tech alludes to financial services that can be accessible on advanced digital stages. This new disruption in financial division has had a wide impact. Key services offered by digital platform includes peer to peer lending, payments and mobile technologies, crypto currencies, block chains, remittance services and equity lending services etc. Fin-tech ventures have been expanding at record speed – tripling from US$ 4.05 billion in 2014 from US$ 12.2 billion in 2015, and coming to US$ 19.1 billion in 2017.

E. Key Drivers of Fin-tech

- Due to non-trust in traditional banking, and financial crisis of 2008, motivated the customers to adopt themselves to technological platforms.
- As customers are becoming tech-savvy and getting more and more engaged with the digital platforms, there is a growing demand for new and better financial products and services digitally.
- The hype of Fin-tech is attracting talent from the traditional finance sector. These tech savvy talents are in direct competition with incumbents of finance industry.
- India’s Fin-tech industry investment increased 282% from 2013 to 2014, and reached to US$ 450 million in 2017(Cyril, 2017).
- Digital firms have benefited from the government’s start-up policies and flexible regulatory conditions imposed by the RBI, formal organisations have a built-up foundation and heritage that isn’t actually replaceable.
- Fin-tech new companies need to ingrain more confidence certainty among Indian clients, definitely known for being traditionalist in their money related inclinations and preferences.
- Figuring out how to market to their necessities and impact financial behaviour are the absolute greatest difficulties, as is setting up a solid and responsive infrastructure to keep a pace with the speed of technological development.
- On the other hand, Conventional financial institutions can use their current client base and receive digital items that support solid financial connections while enhancing service effectiveness and expanding access to meet evolving issues.
- The disruptive capability of Fin-tech firms can incite the genuine necessary modernization of the conventional sector, lessening costs in the process and increasing the size of the banking population.
- Entry and level-playing-field: Fin-tech offers an opportunity but its interests are not normally lined up with controllers’ long term objectives. Fin-tech firms will enter where they think they can make a profit, yet there are numerous locales of the financial framework where incumbents are settled and entry is nearly difficult.
- Leverage and history-dependence: These innovative advancements are going to improve retail transactions, but they are probably not going to change the payment system. A check on regulators is then to be forward-looking when dealing with Fin-tech. Effective control requires them to find out some basic fundamental highlights they want Fin-tech to have in 30 years, and regulate them now.
- Cyber security: Security models at institutions should be updated and redesigned while considering these trends, as there are implications for Fin-tech and other industries. From the customer's perspective, security is a vital piece of Fin-tech arrangements, the onus for which lies with the supplier. Pushing ahead, security and information protection will assume a key job in winning customer certainty and catalysing the selection of Fin-tech. Thus, the development prospects in technological advancement and innovation may not create a totally uncorrelated relation between traditional institutions and Fin-tech firms in India.(Krishnan, 2016)

IV. CONCLUSION

The advancement of the technology has significantly changed the world in the previous decades. An ever-increasing number of technologies and applications are being produced each day, which has continuously changed the client conduct and supplanted the conventional services models. The development has connected to different industries, particularly the finance division. By using the technologically advanced innovation, Fin-tech has encouraged different financial service with better client experience and lower cost. Regardless of being as of recently created, it has established its strong ground for building the future financial items. The development of Fin-tech has made a multidisciplinary industry which has unquestionably changed the finance industry. Though there are still many concerns regarding Fin-tech in economy which can lead to lead to potential negative effects in economy such as cyber security, data privacy and utilization of Fin-tech services for illegal purposes such as money laundering, tax evasion etc.

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AUTHORS PROFILE

Neha Yadav is Pursuing PhD at Amity Business School, Amity University Noida, India in the area of Financial Literacy and Investors attitude and its implication on Decision Making. She possess 3 years of teaching and research experience. She received her first class master degree in MBA with specialization in Finance from Periyar Management and Computer College, GGSIPU University Delhi, India. She has research interest in area of Finance and Accounting. Her area of research includes Financial Literacy, Investors attitude, Behavioral Finance and Financial Technologies She has presented several research papers in National and International Conferences and has published paper with reputed journals.

Dr. T.V. Raman is a professor & Head of the department, Accounting and finance in Amity Business School since last 15 years. He is possessing rich academic experience in the area of teaching, research, training, consultancy and publications. In last 25 years he has published more than 50 research paper and case studies in national and international journals including 10 Papers in SCOPUS listed Journal Area of expertise is Financial Decision making, corporate Tax Planning, Corporate Restructuring, Cost and Management Accounting, Behavioural aspects in Finance and Management Control System. Corporate trainer in the area of Finance for non-finance executives, Working Capital Management, Direct and Indirect Taxes, Cost control techniques, Financial Decision making, Financial Reporting, GST etc. and imparted training in corporate like, BEL, IFFCO, Delhi Transco Ltd., NTPC, SAIL, JCB Ltd, Department of Science and Technology, TATA motors, Apparel Export promotion Council, Handicraft Export Promotion Council, etc. journals of good repute. His specialized area is Investment Decisions, Corporate restructuring, Financial Inclusion, Management control etc. He is certified Goods and Service Tax Trainer by NACEA.