FinTech Trends Report

India 2017

A deep dive into what's driving the FinTech revolution in India

pwc

Startupbootcamp FinTech

Contents

Executive Summary

PwC and Startupbootcamp are stationed at the heart of the FinTech ecosystem in India. Startupbootcamp scouts for and supports promising, early-stage startups in the country, while PwC advises a wide-range of corporate and institutional clients on leading FinTech issues. For its first program in India, Startupbootcamp FinTech analysed more than 1000 startups from across the world. Through 'FastTrack events' / roadshows in 18 cities, we were also able to gain valuable insights that helped us better understand the FinTech landscape as it stands today. On the other hand, PwC consults clients of all levels in BFSI - from large Financial Service Organisations to FinTech companies. This combined vantage point provides a unique view of the emerging trends in the FinTech space, particularly in India. This report aims to provide key insights into the evolution of the FinTech sector in India by utilizing PwC's intelligence and experience in this area as well as insights from Startupbootcamp's application data from its first program in India.

Win-Win Scenarios

Traditionally, innovations in the FinTech space have been held back by regulatory uncertainties and a conservative approach on the part of the government on such matters. separately, incumbent financial institutions have also demonstrated a preference for slow and steady improvements as opposed to disruptive innovations. However, over the past year, we have seen a paradigm shift in these perspectives. As technologies develop further, they enable significantly more transparency to exist in financial systems, and regulatory authorities can strongly benefit from such developments. Further, improved data analytics and mobile connectivity offer incumbents a chance to create stronger, more profitable propositions for customers and positively impact their own top and bottom line growth. According to PwC research, over **95%** of financial services incumbents seek to explore FinTech partnerships [1].

Increasing User Adoption

User adoption is another challenge which typically slows down innovation, and changing underlying user behavior requires dedicated marketing and consumer education efforts. Governmental efforts towards promoting digitisation of financial systems and reducing cash transactions in the economy have been quite effective in shifting consumer focus towards digital alternatives for financial transactions, with the payments sector having benefited the most. Further, with the FinTech sector finding it's way into the budget speech for 2017, we hope to see more clarity with respect to regulations in the near future. Overall, India offers the highest expected return on investment on FinTech projects at 29% versus a global average of 20%[1].

29%

Expected RoI on FinTech Investments in India

1 PwC - Redrawing the Lines - 2017

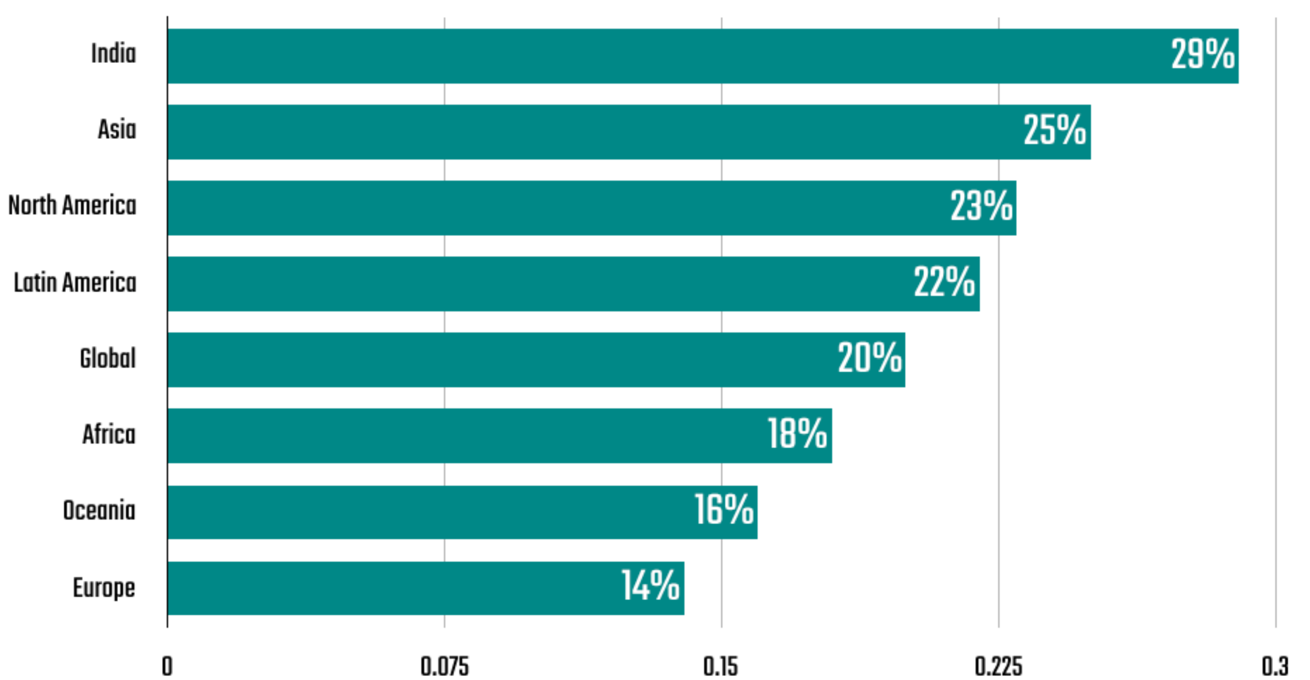
Technological Developments

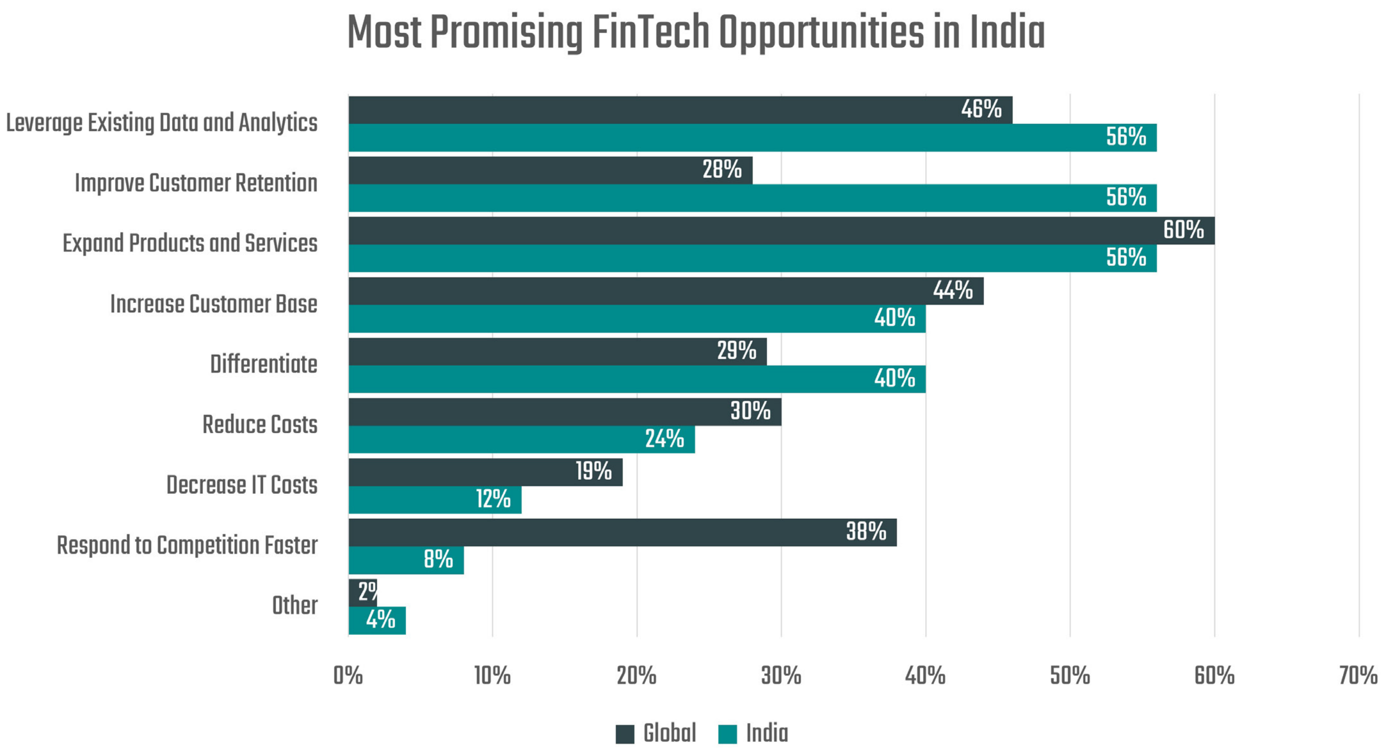
Technologies such as artificial intelligence, machine learning, blockchain and IoT have a wide range of potential use-cases in the FinTech industry. While these technologies have been around for some time and have even seen adoption in western economies over the past decade, they have remained in a nascent state in the Indian landscape. However, now as we reach parity between India and developed economies, we are witnessing more of startups using these more advanced technologies.

Collaboration trumps Competition

The financial services industry has traditionally maintained high barriers of entry to new players, both in the B2B and B2C segments, caused in part by its conservative business sense. However, as the sector enters a technological revolution, we are witnessing a shift in the mindset of the ecosystem at large. Startups are more interested in supplementing the offerings of existing institutions through plug-and-play solutions that dramatically improve the user experience, both internally and externally. Similarly, institutions have become more open to exploring new ways of engaging with startups, beyond the typical acquisition or replication strategies.

Expected Annual RoI on FinTech Investments





Regulators – A major disruption to the adoption of emergent technologies in the BFSI sector?

Extensive regulatory requirements for the formation of new companies in the BFSI sector have historically posed a barrier to entry for budding companies. More recently, however, regulatory hurdles such as extensive KYC/AML protocols as well as digital identity authentication and data storage requirements have been some of the major hindrances faced by incumbents, often slowing down the adoption of newer technologies. However, with the current government's strong focus on FinTech, we expect to see more clarity in regulations in the coming years.

While FinTech innovation in corporates and institutions has been negatively impacted by extensive regulatory requirements, young FinTech companies in India suffer from a lack of regulations making for a very ambiguous situation overall. It is clear that as the Indian regulatory environment is not as developed as our global counterparts; improvements in this regard would go a long way to facilitate innovation and the adoption of emergent technologies going forward.

The Indian FinTech Landscape

Key Takeaways

Strong, proactive policy level support from the government has been providing a much-needed boost to user adoption. Initiatives such as Jan Dhan Yojana, Aadhaar and the emergence of UPI provide a good foundation for FinTech companies to permeate 'last mile' touchpoints and boost financial inclusion across the country.

The 'Payments' segment has been the most funded within the Indian FinTech landscape, riding on the demonetization wave. However, banking technology solutions, including B2B products, are also experiencing strong growth and enabling financial institutions to create seamless solution delivery for end users.

Despite significant reductions in incoming global investments in the FinTech space, the India opportunity remains promising. India offers the largest unbanked or underbanked population, along with a strong technology and entrepreneurial ecosystem

Strong Governmental Support

A government push for financial inclusion, digitization and startup activity has led to the introduction of policy initiatives which provide a strong foundation to the FinTech sector in India.

India Stack

Through the introduction of India Stack, the government has provided a world-class technological framework to entrepreneurs, innovators and corporations, allowing for the accelerated growth of FinTech ventures. The scenario somewhat resembles the policy support offered by the government to the telecom industry in the 90's, with FinTech taking center stage in many reform initiatives.

Startup India Program

The Startup India program, launched by the central government, includes the simplification of regulatory processes, tax exemptions, patent reforms, mentorship opportunities and increased government funding.

Jan Dhan Yojana

Financial inclusion in the country has grown significantly due to initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY), regarded as the world's biggest financial inclusion program, with an aim to facilitate the creation of bank accounts for large underserved or unserved sections of India's billion plus population.

Aadhaar Adoption

The RBI recently approved Aadhaar based biometric authentication, which will allow for bank accounts to be opened through e-KYC at any Banking Correspondent (BC) location. This will allow financial services companies to do e-KYC checks more economically, thereby reducing transaction costs for customers.

National Payments Council of India Initiatives

The National Payments Council of India (NPCI), through the introduction of the Unified Payments Interface (UPI), has leveraged the growing presence of mobile phones as acquiring devices, substantially reducing the cost of infrastructure for FinTech ventures. With the smartphone user base expected to expand to about 500 million users by 2020, up from about 150 million in 2016, the digital banking footprint is projected to grow faster than ever before. The NPCI has also introduced several innovative products, such as RuPay cards, which will allow for immediate money transfers and a more convenient experience for the customer. These initiatives provide a solid foundation for a digitally enabled financial sector in India, giving FinTech startups the opportunity to leverage these technologies and initiatives to be adopted into the mainstream banking experience in India.

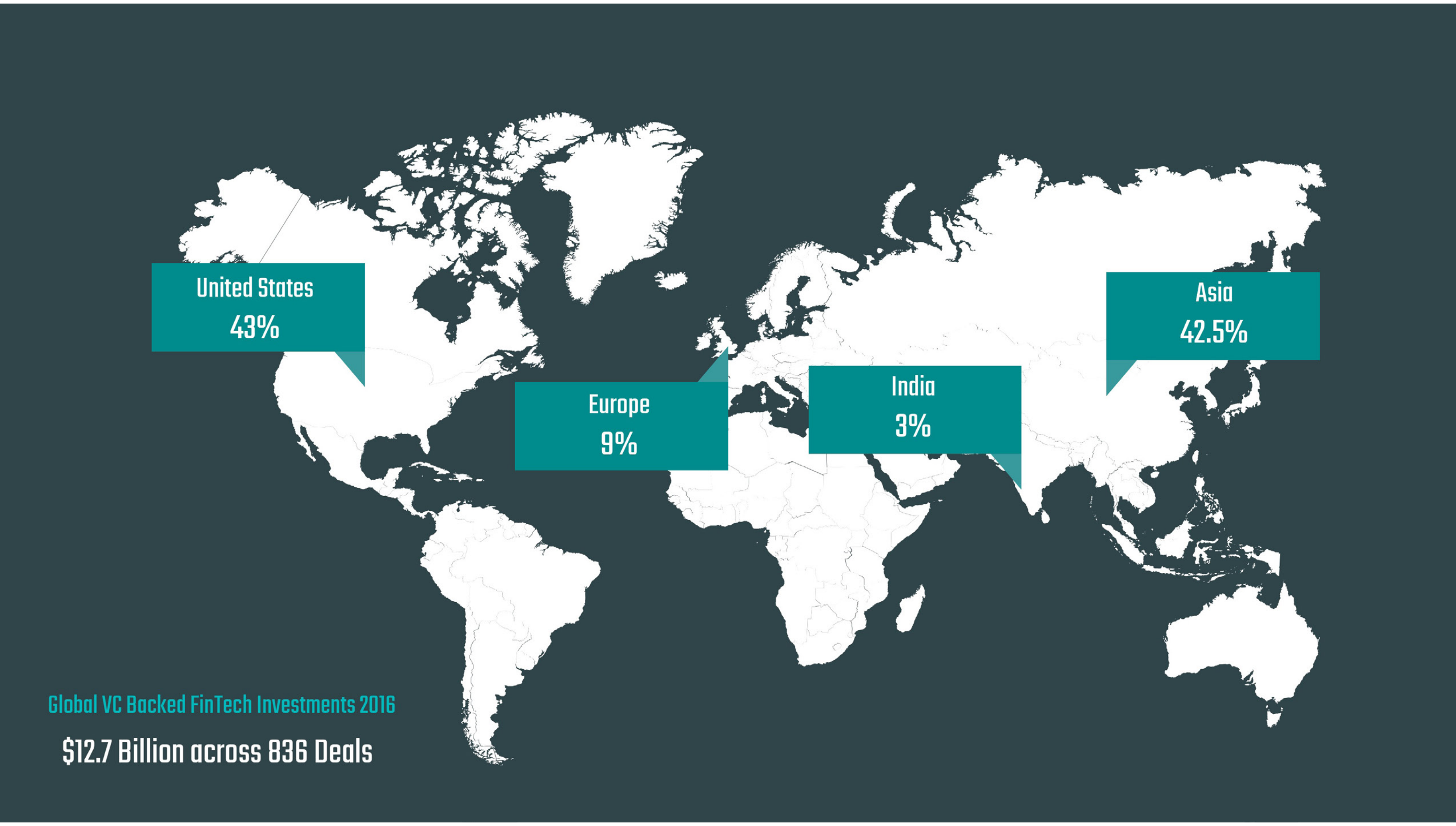
Public Relations

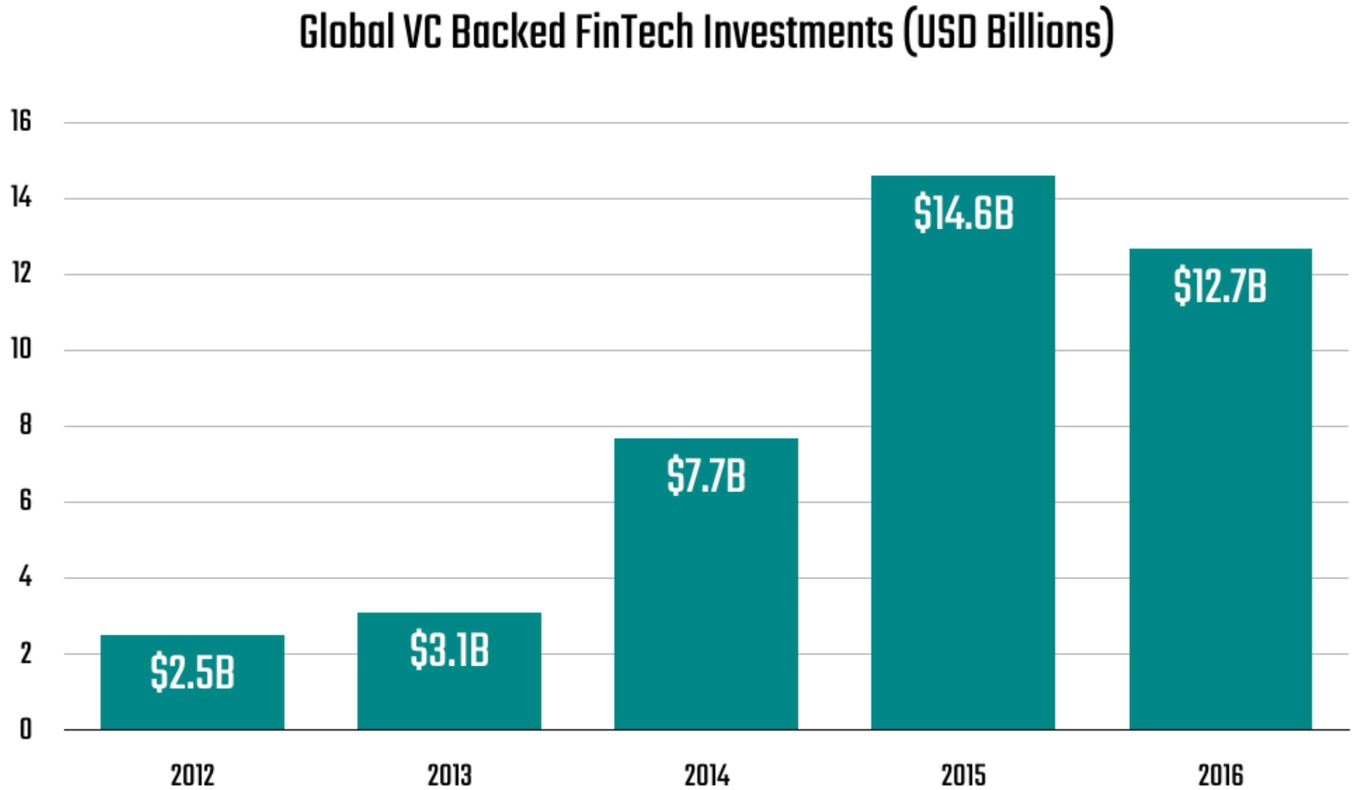
Moreover, the government has also played a strong role in encouraging and educating consumers in the economy towards digitized monetary systems, providing a much need PR push towards digitisation. The industry is still suffering from regulatory uncertainties, particularly with respect to new business models enabled by FinTech applications such as P2P transactions, crowdfunding and data security. More than 40% of industry incumbents and startups reported such regulatory uncertainties to be a major hurdle while working to implement innovative solutions.

Funding Trends

The FinTech sector saw a decrease in global funding in 2016 due to increased global uncertainty, driven by lack of clarity surrounding Brexit and the US presidential election, among others. VC-backed global FinTech investment in 2016 was $12.7 billion, which was down 13% from 2015's record high of $14.6 billion[2]. A breakdown by geographical region found that FinTech investment in Europe and the US was affected the most. VC-backed funding was down 25% YoY in Europe and 29% YoY in the US in 2016.

2 https://www.cbinsights.com/research-FinTech-2016-report

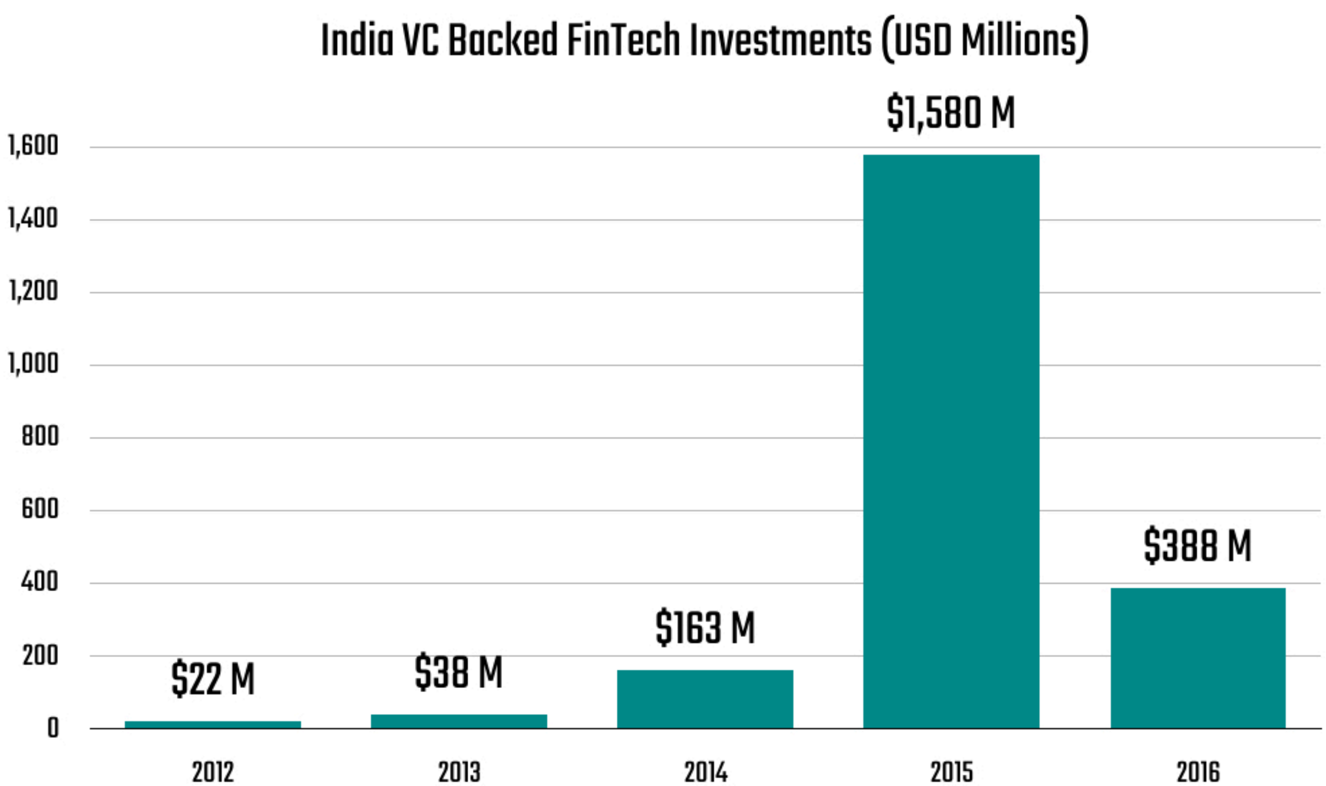

United States
43%
Europe
9%
India
3%
Asia
42.5%
Global VC Backed FinTech Investments 2016
$12.7 Billion across 836 Deals


Global VC Backed FinTech Investments (USD Billions)
16
14
12
10
8
6
4
2
0
$2.5B
$3.1B
$7.7B
$14.6B
$12.7B
2012
2013
2014
2015
2016

On the other hand, FinTech investments in Asia increased to $5.4 billion in 2016, up 12.5% from $4.8 billion in 2015, driven mainly by China and India. The increase in investment in 2016 despite unfavorable economic conditions highlights Asia as one of the most promising regions for FinTech investment.

However, despite the growth in FinTech investments in Asia, the Indian FinTech space is not immune to broader market sentiments. Economic uncertainty in 2016, both global and domestic, has impacted FinTech investments in India. In Q4 2016, FinTech funding was at a 5 quarter low, raising only $32 million across 10 deals, down from $157 million and $127 million in Q2'16 and Q3'16 respectively. This decrease in investor confidence in Q4 can likely be attributed to the short-term impact of demonetization in the country as well as an ambiguous regulatory scenario.

Another interesting statistic in the FinTech space is a reduction in the average ticket size for early stage funding in the FinTech space in India. For seed funding, the average ticket size was $0.8 million in 2016, from $1.0 million in 2015 and the ticket size for series A funding reduced to $4.2 million, down from $5.4 million in 2015. This demonstrates a more risk averse attitude held by investors in the Indian FinTech space in the past year, but also points towards reducing capital needs for supporting new ventures.



Sector Snapshots

India's FinTech landscape has witnessed strong user adoption through 2016, driven largely by the payments sector which has enjoyed a boost post the demonetization of high value currency notes. Alternate lending also enjoyed a strong year, fueled by the large number of unbanked, new-to-bank, and under-banked consumers. However, while there is significant headroom for growth in consumer facing solutions, India's FinTech ecosystem still lags behind other FinTech hubs in the number of middleware and B2B solutions, which together enable financial institutions to provide end-to-end solutions for their users.

Payments

Globally, credit card payments overtook cash payments for the first time in history, and although digital payments accelerated in India as well, **it is estimated that 80% of economic transactions in India still happen through cash, as opposed to around 21% for developed economies**, thus leaving significant room for growth. The digital payments sector in India is estimated to grow to USD 500 billion by 2020, up from roughly USD 50 billion last year, and representing around 15% of GDP in 2020. Mobile payment solutions, such as wallets, P2P transfer applications and mobile points of sale, are enjoying strong user adoption, and heading towards one-stop-shop solutions in the future.

Some players in the sector are taking advantage of policy initiatives such as 'Payments Bank' licenses to converge towards a hybrid model where mobile services blend together with banking services.

Alternative Lending

Alternative lending is the second most funded and one of the fastest growing segments in the Indian FinTech space. Around 37% of GDP is contributed to by MSMEs but the supply of credit lines is disproportionate. It isn't surprising then that there are 158 new startups in the space as of 2016. However, competition is stiff, with only 27% of founded companies obtaining funding, and 27% of those going on to raise Series A capital. As of October 2016, alternate lending in India received $199 million in funding across 33 deals, almost doubling 2015's funding of $103 million across 21 deals[3]. The major contributors to the growth of this sector include a large amount of unmet demand for loans from MSMEs, with a gap of roughly **USD 200 billion** in credit supply, and a significant under-banked and new-to-bank population which lies at the heart of the Indian FinTech opportunity.

During our scouting process, alternative lending was one of the most popular segments, with around 10% of our Top 55 startups falling into the category.

3 Tracxn India FinTech Landscape, October 2016

Banking Technology

The 'Banking Technology' segment includes software solutions, fraud and risk management suites, regulatory compliance and other solutions for banks and other financial institutions (FIs). This segment forms the bedrock for FinTech solutions offered by new and existing FIs since it enables the entire process chain underlying digital transactions to move towards real-time, verifiable systems. The segment has seen 74 companies since 2008, of which 6 have been founded in 2016. It is a rapidly growing segment in the FinTech space in India.

Emerging technologies such as artificial intelligence and machine learning have the potential to revolutionize the customer experience, especially at the 'last mile' by providing greater levels of personalized service and greatly improving the back-office efficiencies at financial institutions. The past year has seen the adoption of these technologies for experimentation and implementation of a variety of use-cases like bot enabled conversational banking services at large commercial banks in India, more intelligent recommendation engines for targeted marketing of financial products and automation of underwriting using micro-economic indicators obtained by scraping the web and device fingerprinting.

Insurance Tech

The InsurTech segment has been growing more conservatively than traditional FinTech segments like payments and alternative lending. However, as InsurTech companies demonstrate greater value to insurers by sales improvement, cost reduction, better risk management and process efficiencies, the scope for growth is quite high. The insurance sector in India has been traditionally quite slow to adopt innovation, but with rising consumer expectations and increased access to technology enabled efficiencies, insurers are looking to incorporate solutions that improve customer engagement, retention and improve the complete customer-lifecycle.

Internet-of-Things (IOT) enabled solutions are gaining popularity globally within the InsurTech sector, powered by rich customer data gathered through various sensors used for other purposes. Linking of health and wellness data for instance can help insurers predict consumer behavior better, and lead to increased revenues through smarter pricing strategies. Marketplaces are also bringing increased transparency to the product offerings, motivating insurers to make products simpler and easier to understand.

Conclusion

Despite a few concerns about regulatory clarity and reduced deal values in 2016, both locally and globally, the outlook for FinTech in India remains very promising. Regulatory support, financial inclusion and the digitalization of services in the industry are likely to boost investment in the area going forward and will rapidly increase the adoption of emerging technologies in the financial services industry.

SBC Insights

Over the past year, the Startupbootcamp team met with hundreds of FinTech startups from various geographies and segments. Our scouting process took us to more than 18 cities, giving us the opportunity to analyse and inspect trends at a grassroots level. Further, by working together with our industry-leading partners to shortlist the 55 most promising ventures, we were able to witness the differences in corporate innovation requirements and entrepreneurial trends in the FinTech space. We worked closely with our final cohort of 11 startups to help design and adapt their business models to fit customer needs and generate revenues. During this process, we had the opportunity to go in-depth into each of their models and understand what worked, and what didn't. We have highlighted some of our key learnings here:

Startupbootcamp Mumbai Program Flow

Alternative Lending All The Way

Alternative Lending was the most common theme in our cohort, with four of the eleven teams falling into the category. The segment offers a lot of opportunity for startups to find traction, given that there are multiple customer segments that have typically been underserved by existing financial institutions.

Financial inclusion, alternative credit scoring, education financing and MSME financing were some promising sub-segments represented in our cohort. Each of these sub-segments offer a deep, t user base which is poised for transformation as FinTech solutions become mainstream.

4 of 11

cohort startups were from alternative lending

Wealth Management Takes the Lead

Within the Indian landscape, we found that wealth management was one of the most popular segments with entrepreneurs, with 25% of our applicants focussed on empowering and enabling investors to easily invest in market traded securities. It is estimated that only 2% of India's population invests money in market traded securities, thus, there is a lot of headroom for growth within the sector. In developed economies, such platforms have existed for many years, and have exhibited strong growth rates.

Consumer education and adoption are the challenges at the moment. Two of our cohort startups, Expowealth and ManageMyFortune, approached this segment with different value propositions and target audiences. Through their customer development journey, we learnt that given the complexity of the underlying investment products, even professionals working in financial organisations often shy away from making investments due the technicalities of the underlying products. Further, the regulations around investor registrations often pose a challenge since a large number of users drop out during that initial phase.

Financial Inclusion and Microfinancing

Financial inclusion is a top priority on the governmental agenda in India, with over 230 million new bank accounts opened in 2016 under the Jan Dhan Yojana[4]. Approximately 15% of our applications came from startups within this segment, with one making it into our final cohort. While it is a massive addressable market, the monetary volumes involved per customer are low, and this requires ventures in this space to find ways of scaling cost-effectively.

Platforms are Gaining Popularity

9% of our program applications came from startups wanting to create platforms to make financial transactions easy and more approachable for untrained individuals. There was also a strong trend of B2B platforms targeting small and medium enterprises (SMEs), a customer segment that has been left unguarded by banks and other large financial institutions.

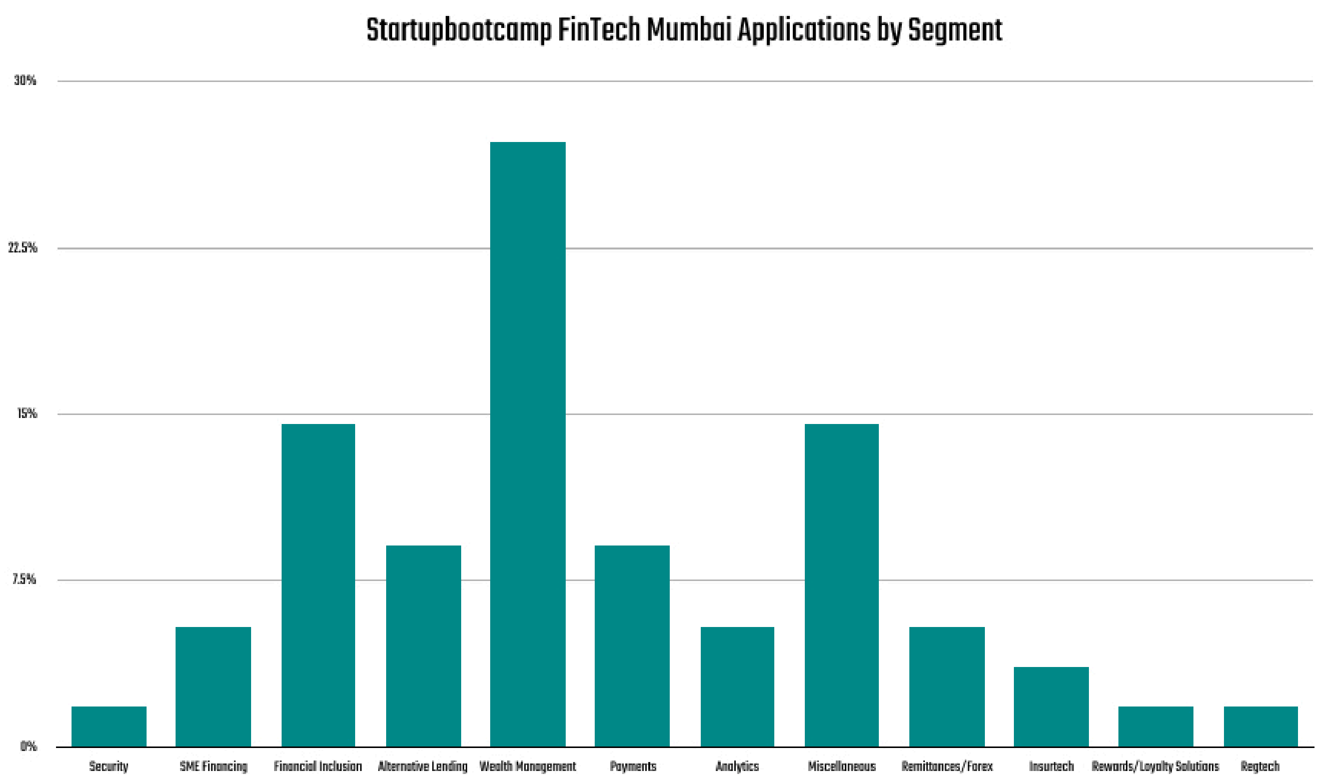
4 IMF Working Paper - Indian Financial Sector: Structure, Trends and Turns - Jan 2017

Crowdfunding Takes a Back Seat

Only 2% of our program applications came from the crowdfunding segment, due to a lack of regulatory clarity around such business models. We believe the segment will see traction only if the regulatory environment around the business models becomes more open and clear.

Gaps in the B2B and Middleware Space

India's FinTech transformation got a boost in 2016 on the back of policy initiatives launched by the government. Prior to 2016, FinTech took a backseat to the e-commerce and hyperlocal delivery segments, and although still popular, most FinTech startups were based on B2C business models. As banks and financial institutions make the move towards incorporating advanced technologies to optimize their operations, there is now a strong need for FinTech products that can offer plug and play solutions for banks to optimize and improve internal and external processes.



Upcoming Segments ▪

Alternate Lending, Wealth Management, RegTech and InsurTech are poised for growth

With the payments segment reaching its pinnacle, new segments are gaining the attention of innovators, corporates, and investors alike - namely alternative lending, wealth management, RegTech and InsurTech. With increasing investments and the entry of new players, traditional corporates in these sectors are looking to incorporate the solutions on offer.

Alternative Lending

Lending Platforms and Enablers

Alternative lending is a growing industry for digital lending aimed at different borrowing needs, including consumer loans, SME loans, working capital loans, and payday loans among others. It serves as a relatively less volatile asset class for retail and institutional investors. The industry primarily consists of digital lending platforms and enablers who facilitate such platforms, such as alternate credit scorers and white label services. These platforms connect lenders, seeking higher returns than banks currently offer, with customers seeking fast, short-term loans.

Alternative Lending Boom

After witnessing a boom in the payments s segment, alternative lending is on route to follow. More than 225 alternative lending companies have been founded in India as of 2017. Being one of the fastest growing sectors of the last year, its potential is still largely untapped.

Underserved and Unserved

The online players realise that a huge portion of consumers are underserved or unserved by the traditional lending institutions.

These consumers broadly fall into the following categories:

- Consumers seeking to consolidate debt
- SMEs
- Students
- New-to-bank and underbanked consumers

These segments have typically suffered from a lack of financial data for credit profiling and low capital requirements. Lack of financial data and credit history makes it difficult to perform risk assessments, and makes them suboptimal borrowers for traditional lenders.

Unmet Demand

Similarly, SMEs are considered suboptimal borrowers due to their small size, information asymmetries and cost of credit delivery. India has more than 50 million SMEs with an unmet debt demand of USD 198 billion.

Recently, many startups have designed their value proposition to cater to these segments, providing loans and working capital based on innovative processes for credit scoring, risk assessment and disbursement.

In our first cohort, 4 of the 11 selected startups were from the alternative lending space.

Broadly the different alternative lending models prevalent in the landscape can be categorised as follows:

Direct lending

Direct Lending includes platforms that have a lending license. Recently many NBFCs have started competing with traditional banks in this segment, i.e., lending to MSMEs with better offerings, easy application processes, alternate credit scoring algorithms and lower processing time. The digitisation of the involved sub-processes, such as verification and profiling, has reduced costs and given the NBFCs an edge over banks.

P2P lending

P2P lending involves building a marketplace to bring together individual borrowers and lenders through tech-enabled platforms. This allows borrowers to access low-cost quick loans at a rate they can afford. P2P has made a foray in the consumer segment and is currently at a nascent stage in the SME segment. More than 9 million USD has been invested in P2P marketplaces over the past year. Such marketplaces use alternate credit scoring models for risk assessment and underwriting. However, P2P lending in India suffers from a lack of regulatory clarity, although the RBI has issued certain papers on the topic to create industry consensus from a regulatory perspective.

Marketplaces and Comparison Platforms

Digital marketplaces connecting borrowers and lenders, where the lenders are mainly banks and financial institutions, are gaining popularity. The digital platform reduces the loan processing time while matching the borrower to the best fit lender. It is the highest funded model of Alternative lending with investments worth USD 119 million.

Invoice trading

Invoice trading assists MSMEs that often struggle with working capital and cash flows due to delayed payments. Recently emerged FinTech companies are providing platforms to such MSMEs to sell their invoice or other receivables at a discount for working capital.

Crowdfunding

Crowdfunding entails raising external finance from a large group of investors. The investors can interact with the investees and view their ideas on a crowdfunding platform. The financing can be received in the form of reward or donations. This form of alternative lending is at a very young stage in India.

Credit scoring

Many companies have taken up the role of enabler in the industry, using alternative data sources to build credit scores of the 350 million credit invisible people without a documented credit history[8]. The alternate data points used by such companies include social media, utility bills payment, mobile payments history and psychometric analysis.

Despite aid from the banking sector, the alternative lending space still faces some challenges. Sub-sectors like P2P lending which are unregulated in India face uncertainty in the future. In addition, there are regulatory concerns regarding the outsourcing of key infrastructure, as is the norm with technology companies. This uncertainty affects investor confidence and also limits profitable growth for the time-being.

Wealth Management

Automation shift to a hybrid model
The asset and wealth management industry is witnessing a wave of automation globally. While robo-advisory based services have been present in western economies for some time now, players in the segment are still refining their operating and business models. Globally, we are seeing a shift from robo-advisory to hybrid human-assisted robo-advisory or vice versa. There are two main reasons driving this shift, consumer perceptions and technological barriers. While technologies like AI and ML have improved vastly over the past 2 years, they still cannot compete with the ability to contextualise and respond as well as human advisors. However, the sector is primed for impact from developments and improvements in these technologies.

Streamlined product offerings

Besides this, the technological advancements have led to major modifications of the product offerings. The rise of digital-payments systems, e-KYC through Aadhar, online fund transactions, online statements of investments have made the existence of a fully automated wealth management platform possible. India's large, under-banked population is largely absent from the stock and bond markets, and this presents a strong opportunity for players in the sector. Further, both SEBI and the RBI have proactively encouraged transparency and simplicity in the system, and FinTech innovations within the sector are positioned to guide large numbers of users towards formal investments.

Robo-advisory adoption

The current market share of robo-advisory firms is marginal. However, several research studies forecast that robo-advisors are going to witness significant growth going forward making quality financial advice available across demographics at an affordable cost. Traditional advisors on the other hand can develop their own robo-advisor platforms to capitalize on this opportunity. However, in-house development has its own risks such as a high cost of development and cannibalization.

Robo-advisory obstacles

- **Lack of education**
  Robo-advisors also face many challenges in the Indian wealth management sector. With the lack of widespread financial literacy in India, many investors are not aware of the underlying fundamentals of investing and risk management.

- **Lack of personal touch**
  This, combined with a lack of personal touch from robo-advisors and their inability to answer questions on par with human advisors, hampers credibility and consumer trust in robo-advisors.

2 of the 11 members of our first cohort offer wealth management and Investment Tech solutions. ManageMyFortune follows a hybrid model offering users the option to choose from an automated or human-led financial advisory. Expowealth offers its users commission free investment advice for Direct Mutual Funds.

- **Lack of reliable data**
  Besides the lack of trust from investors, robo-advisors face another challenge in the Indian wealth management sector, which is the lack of reliable data to develop algorithms and execute a financial plan to achieve the investor's goals, while still complying with the investor's risk profile.

Despite these challenges, wealth management is an exciting space which is expected to continue to evolve with new players and models expected to gain ground over the next few years.

InsurTech

High growth potential

The global insurance industry is witnessing a wave of technology upgrades in their operations and products, especially in segments where the FinTech ecosystem has developed substantially. Although lending and payments startups have been the hottest over the course of the FinTech revolution in terms of the number of companies that raised funds, InsurTech as a segment is sure to gain the attention of innovators in the coming years.

Insurtech focus

InsurTech comprises technologies and platforms that optimize the workings of the insurance industry, to develop more customized offerings for customers and reduce providers' costs. This involves ideating different approaches to claims management, underwriting and risk management, sales and all other facets of insurance. Relevant technologies such as artificial intelligence, big data and analytics, blockchain can have a major contribution to the insurance value chain by providing faster claims settlements, easier onboarding, fraud control and other benefits. New business models such as P2P insurance and microinsurance are improving business efficiency and reducing operational costs.

- Micro-insurance model shifts the focus from long term insurance offerings to insurance of small amounts for a particular time or miles count.

- P2P insurance makes use of peer networks where insurance groups, consisting of people with similar needs and circumstances are formed. The insurance funds of the group are pooled together to cover minor claims, while a separate insurer is called upon for major claims.

The significant unserved market opportunity in India can serve as a vast customer base for emerging players in the insurance sector. According to the National Health Profile 2015, published by the Central Bureau of Health Intelligence, less than 20% of Indians are covered under the most basic health insurance. Innovative business models such as P2P insurance, micro-insurance and on-demand service of insurance providers, would serve as a good fit for large sections of the Indian population and also attend to the segments of the population left unserved by current insurance providers. The government push for Aadhaar and digital transactions has also made access to previously inaccessible markets easier for insurance companies.

75%

of non-life insurance expected from online channels by 2020

Insurtech in India

Despite the presence of a large underserved population, InsurTech is seeing a slow start in India. Currently, Insurance aggregators are the most funded companies of this segment, with a total funding of USD 87 million. Insurance companies are approaching this sector with an experimental approach, not as an innovation milestone. Once, it proves a profitable value addition to the insurers, whether through process efficiencies, improved customer acquisition or through reduced cost, it will be integrated into the mainstream insurance value chain. The complex regulations governing the insurance industry also serve as a barrier for innovators. Due to the high cost of compliance and high risk, new players need to be able to ensure the coverage of risks with significant funds. This becomes a barrier for startups who work with limited resources. This provides an impetus and calls for a collaboration between insurance companies and InsurTech firms to provide more customer centric solutions.

India is yet to witness the disruptive power of InsurTech, but by studying the trends in markets where InsurTech has made a mark, it can be concluded that startups will need to work closely with insurers to provide real benefits to end-customers.

Source: Traxcn Sector Landscape Reports – 2016 and 2017

Upcoming Tech ▪

Artificial Intelligence, Machine Learning & Blockchain will be the Hottest Technologies to Watch

Financial institutions are increasingly investing in emerging technologies as a means to improve their internal operations and customer experience. In the past year, global investment in AI applications touched $5.1 billion, up from $4.0 billion in 2015. Globally, we are seeing large commercial and investment banks incorporate AI and blockchain technology for both back-office and customer facing purposes.

In India, widespread adoption of these technologies has not yet come to fruition. However, in the past year, we have seen collaborations between several large financial service companies and FinTechs in conducting POCs and implementing some of these emergent technologies into their operations.
The most notable use cases have been:

- POCs using Blockchain technology (DLT) for cross border remittances, trade finance and vendor financing.
- The use of AI and ML to automate and streamline workflows in big financial institutions and chatbots to facilitate conversational analytics and more efficient customer service.

These technologies certainly have the potential to revolutionise the BFSI sector, greatly improving the customer experience and improving the efficiency of the internal processes at incumbent companies. However, this is entirely dependent on successful collaboration between FinTechs and incumbents.

AI and ML

Artificial Intelligence (AI) and machine learning (ML) are two terms that are often, incorrectly, used interchangeably. AI simply refers to smart algorithms that have, in various degrees, the ability to vary their output based on a wide range of input variables. Machine Learning, on the other hand, refers to a 'live' algorithm which can actively observe certain criteria and alter its own behavior based on the required outcomes. Put another way, AI is a broader concept referring to machines conducting activities that we would consider to be 'smart', while machine learning is one particular application of AI which 'learns' from large amounts of data to make predictions/ inferences that are useful to the user.

AI Investment

Artificial Intelligence is viewed as one of the most exciting and profitable ventures in the FinTech space in India. The applications of AI and ML in data analytics and customer service create the opportunity for exponentially more personalised and faster customer experiences, significantly better insights, and, automation of back-end workflows. Over 36% of large financial institutions are already investing in these technologies, and almost 70% report that they are planning to in the near future.

[5] http://www.innovencapital.com/sites/default/files/InnoVen%20Capital%20Startup%20outlook%20report%202017.pd
[6] PwC - Redrawing the Lines - 2017

With increased investment, we are likely to see many more applications of AI and ML being used in the BFSI sector. We foresee the following applications of AI to be most prevalent in the financial services sector in India:

focused on data analytics and healthcare have received over $2 million in funding.

There will certainly be major progress in the development and adoption of AI in the years to come, and Google and Apple's recent inroads into offering high levels of support for

AI use cases in Banking

Customer Acquisition

- Using Deep Learning for targeting customers bu analyzing digital footprints of their interests and recent purchases on social media
- Predictive analytics helps banks to identify risks and manage upselling effectively. It can also be used to analyze which customers would leave and which will stay.

Customer Service

- Use NLP to build automated voice systems and Chatbots to help customers to manage their accounts and find answers to general inquiries without the help of a live representative
- Predictive analysis uses historical and session data already collected to deliver a personalized experience for the customers

KYC and Onboarding

- Predictive analytics platform can provide 360 degree view of clients and related parties, ensuring reuse of existing due diligence and consistent treatment across jurisdictions and lines of business.
- Utilize NLP technologies to extract functional information and leverage OCR scan account opening forms, KYC documents such as PAN card

Brand Management

- Use NLP to build automated voice systems and Chatbots to help customers to manage their accounts and find answers to general inquiries without the help of a live representative
- Predictive analysis uses historical and session data already collected to deliver a personalized experience for the customers

Accounts and Loans

- Predictive analytics platform can provide 360 degree view of clients and related parties, ensuring reuse of existing due diligence and consistent treatment across jurisdictions and lines of business.
- Utilize NLP technologies to extract functional information and leverage OCR scan account opening forms, KYC documents such as PAN card

Risk and Credit

- Use NLP to build automated voice systems and Chatbots to help customers to manage their accounts and find answers to general inquiries without the help of a live representative
- Predictive analysis uses historical and session data already collected to deliver a personalized experience for the customers

The financial sector is not alone in recognising the potential of AI. Data analytics systems which use AI/ML have numerous applications such as voice and image recognition, improved search and matching capabilities, improved logistics, supply chain management and personalised marketing. In the past month, two AI based Indian start-ups incorporating AI and ML features on their mobile platforms is a strong indicator of this. The push will mainly be fuelled by high demand for more efficient data analytics. Additionally, B2C applications of AI are also likely to grow; self-driving cars and personal assistants are exciting sectors to watch.

[7] https://inc42.com/buzz/healthtech-multiplier-solutions-abi-health-norwest/
[8] https://www.crunchbase.com/organization/boxx-ai

Blockchain

In the past year, we have seen several instances of funding for blockchain based Bitcoin exchanges based in India. However, in the traditional financial services sector, the potential use cases around the underlying architecture of blockchain, i.e. Distributed Ledger Technology ('DLT'), look promising. Blockchain based systems offer vastly improved trust and transparency, and due to its native regulatory advantages, the adoption of DLT in the Indian banking sector is also finding support from regulators.

Early stages in India
DLT in India has only reached the proof-of-concept stage, with a large Indian commercial bank in India conducting experiments into its applications in remittances, trade finance and smart contracts. There has only been one notable implementation of DLT in the banking sector in India - A large Indian commercial bank successfully implemented a smart contract based vendor financing solution for one of its large clients in early 2017.

As more research is conducted into DLT by large players in the BFSI sector, we are likely to see rapid adoption in the coming years. The significant back-office savings and transparency that DLT provides are also very attractive from a regulatory and audit perspective.

Going forward, we expect to see 3 main applications of DLT that will develop in the Indian market:

- **Payments/fund transfer infrastructure**
  Blockchain technology speeds up payments, allowing for nearly instantaneous transactions. DLT can revolutionise cross border transactions by reducing the number of intermediaries in the process, thereby reducing the cost. This can be done through already established cryptocurrencies such as Bitcoin or through central bank backed digital currencies. Over 41% of Indian financial institutions see this as a key use-case.

- **Smart contracts**
  Smart contracts automate the exchange and finalisation of complex agreements such as mortgages, derivatives, insurance policies and letters of credit, where all parties where all parties validate the outcome instantaneously.

- **Digital identity**
  DLT can be used to keep a secure record of a person's identity, a tamper proof history of transactions and can allow users to choose who to give access to their personal data.Over 47% of Indian financial institutions see this as a key use-case[10].

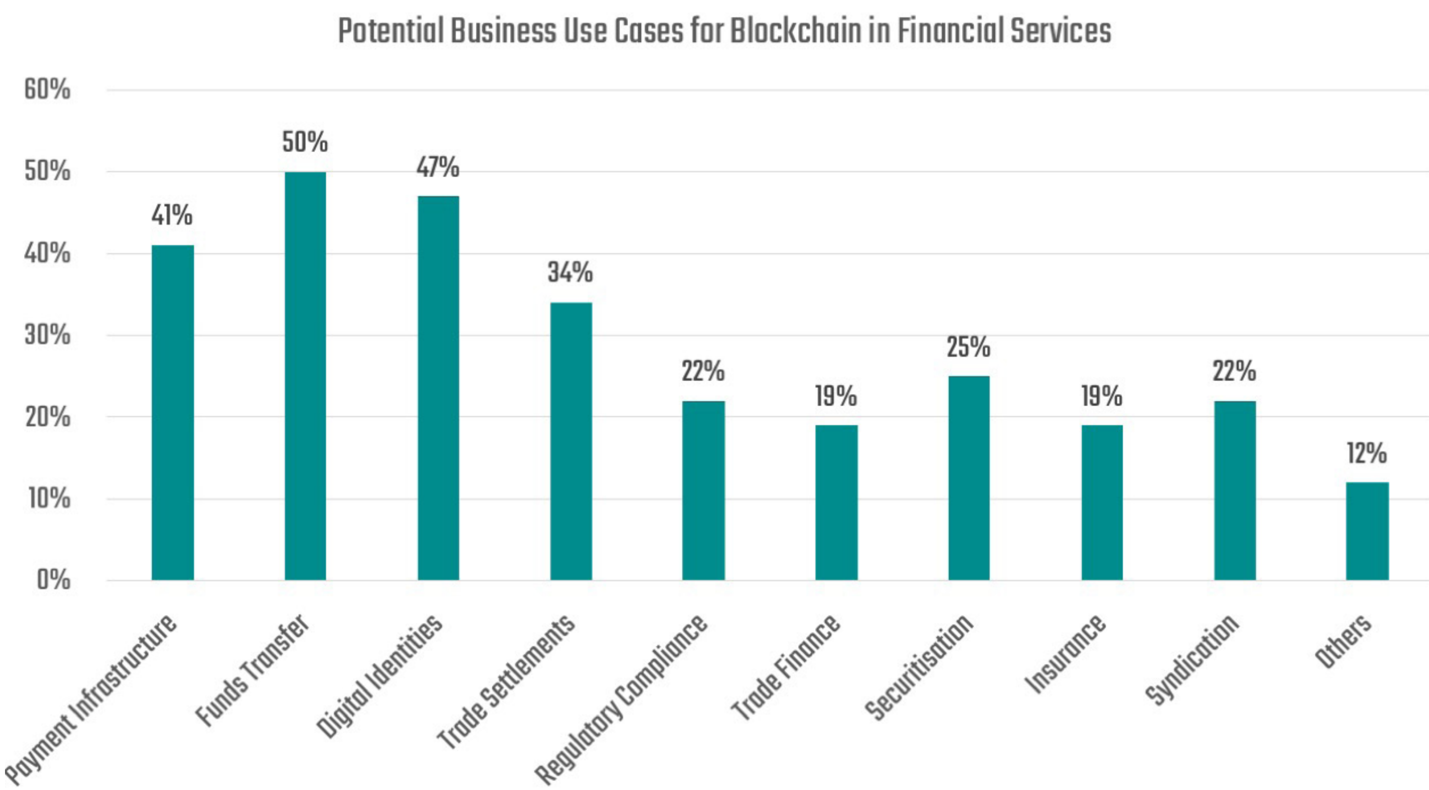
It is clear that with the numerous benefits associated with DLT and support from regulators, blockchain is poised for rapid growth in the Indian banking sector in the years to come.

[9] http://www.idrbt.ac.in/assets/publications/Best%20Practices/DLT.pdf
[10] PwC - Redrawing the Lines - 2017

Bitgram, from our 2017 Cohort, is using a blockchain based system to explore a variety of use cases for banks. The team is currently working with a group of banks to implement a solution which could help dramatically reduce NPAs by providing banks with real time access to lendee data.

However, a major issue hindering the development of blockchain is that successful implementation requires a great deal of collaboration between participating parties.

FinTech startups and banks must work together to develop solutions to this issue if DLT is to move out of its nascent stage and into the mainstream.



Government and Regulatory Push for FinTech

Government and regulatory bodies in India have been actively interacting with key players in the banking and financial services industries to understand market realities and design supportive, enabling regulations. The FinTech sector found special mention in the 2017 annual budget speech made by the Finance Minister, and the government is expected to roll out new regulations in the near future.

The push towards digitisation has also found a strong voice in government PR communications, and this has played a pivotal role in bringing FinTech innovations to top-of-mind status with large population segments. Gaining acceptance with users is a challenge faced by many ventures, and the government's role has certainly been helpful in this regard.

Initiatives

Similarly, the advent of biometrics based Aadhaar cards and issuing e-IDs to almost 1.1 billion people has proved to be a major step towards financial inclusion. The **Aadhar-Enabled Payment System (AEPS)**, allows online transactions at points of sale (MicroATM) through the business correspondent of any bank using Aadhar authentication. It is part of the India Stack, an ambitious project that aims at providing presence-less, paperless and cashless service delivery to Indians. It has also helped enable access to financial instruments to the previously unbanked through schemes like the Jan Dhan Yojana and the Jeevan Jyoti Bima Yojana which aim to bring access to banking and insurance respectively to the lowest strata of the society. Digital KYC through Aadhaar has been a key enabler in promoting digitization as well as the inclusion schemes. Further, the Startup India initiative aims at providing a conducive environment to startups to enable ease of doing business as well as providing financial and regulatory support. There are also many key initiatives being undertaken by state governments, prime examples being the launch of T-Hub by the Telangana state government and FinTech Valley Vizag by the Andhra Pradesh state government, both aiming to incubate and grow startups through various collaborations.

The Bharat Bill Payments System (BBPS) is another such initiative that aims to enhance the consumer experience in paying bills by bringing payments to all major utilities on a single online platform. It has also launched and granted licenses to Payments Banks and Small Payments Banks, recognising the need for niche banking services in India.

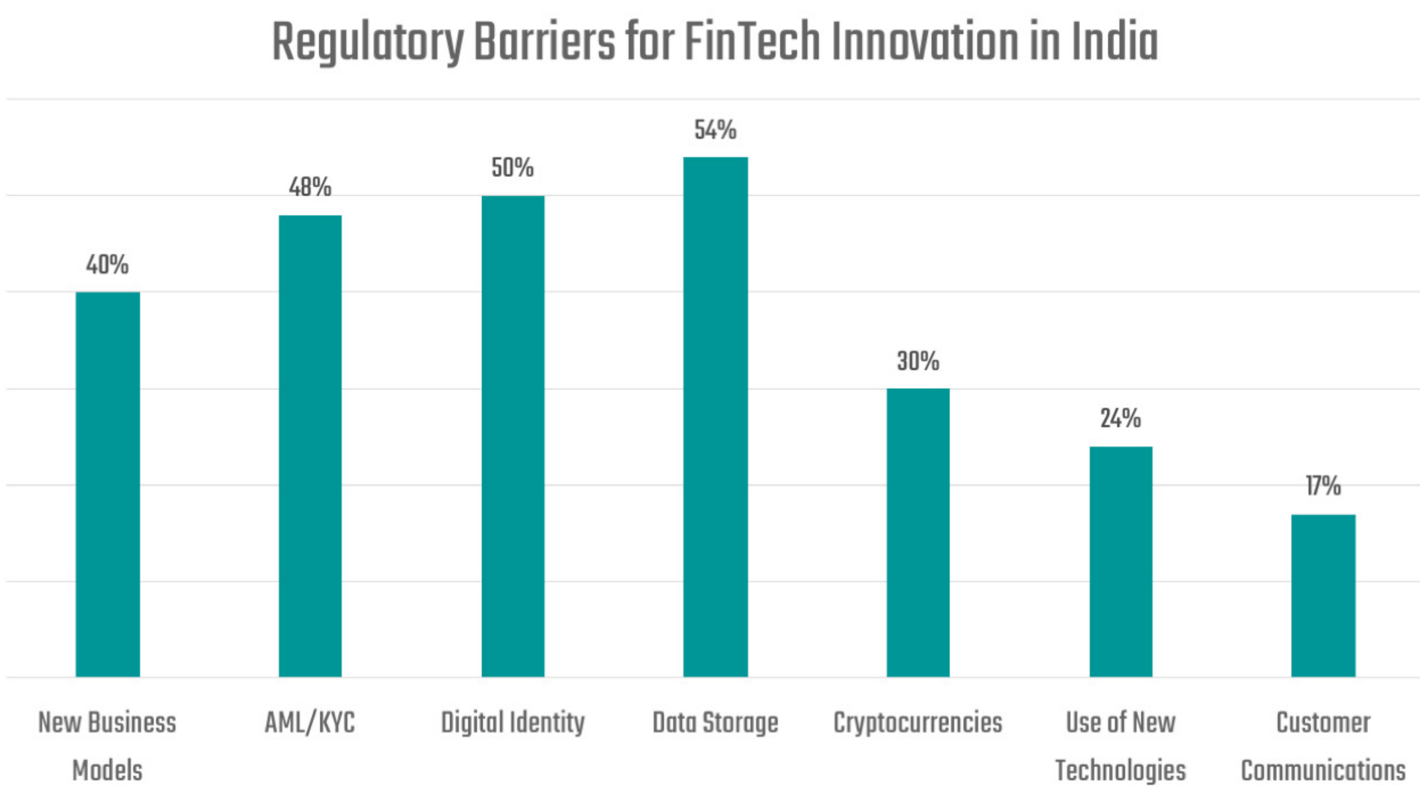
Regulators

The FinTech industry can be considered to fall under the purview of four regulatory bodies in India: the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI), the Telecom Regulatory Authority of India (TRAI) and the Insurance Regulatory and Development Authority (IRDA). Each of these plays an important role in shaping FinTech and there have been many key initiatives taken up by them.

The RBI, under its overall objective of "building a ubiquitous electronic payments network and universal access to savings" has launched several initiatives that promote FinTech. Among the key initiatives by the RBI has been the launch of a **United Payments Interface (UPI)**, developed by the National Payments Corporation of India (NPCI), which has been conceived as an application-level interface, which brings several multiple payment service providers on to a single platform and enable swift 1-click peer to peer payments.

As of April 2017, UPI transaction volume stood at over 7 million, up from 6.2 million one month prior.

The other regulators have also undertaken several initiatives to boost the development of FinTech in the country, prominent among them being the easing of startup listing norms and proposed norms for crowdfunding by SEBI, and proposed norms for selling and servicing of insurance products through e-commerce by the IRDA.



FinTech vs Financial Institutions ·
From Competition to Collaboration

The FinTech ecosystem in India has evolved a lot since its emergence and has seen the entry of multiple mature players, especially in the payments space. Consumers are also showing signs of preference towards non-traditional financial service providers largely due to more targeted product offerings, especially in areas of payments, loans and personal finance. This puts start-ups in these segments in direct competition with industry incumbents, and large banks and financial institutions have also been quite active in the space, launching their own products and services to compete. By and large, competing FinTech products from banks closely resemble the offerings of start-ups, although bank products do suffer from a lack of dedicated oversight and improvement.

In this light, in recent years, the ecosystem has witnessed a shift from its traditionally competitive nature to a more collaborative one, where both startups and incumbents are looking for growth through partnerships. The open innovation paradigm is increasingly been adopted by many traditional financial institutions, albeit in different ways and varying degrees of enthusiasm, but largely many incumbents have realised that collaborating rather than competing with FinTech startups is a more effective digital innovation strategy, and some are even embracing the disruption being created.

Many Roads towards Collaboration

Institutions are either trying to integrate existing technological solutions offered by FinTech companies or are developing their own solutions in partnership with innovative startups. Partnering with FinTech start-ups allows the institutions to effectively outsource part of their R&D and develop enriched services that can be brought to market quickly, as well as gain access to motivated technology teams capable of building solutions in a shorter timeframe.

FinTech startups also benefit from such partnerships, as they gain access to the large customer base of financial institutions, as well as their management and deployment capabilities. Besides this, FinTech startups are also able to the leverage the credibility that the traditional institutions have built, thus accelerating their go-to-market process. The incumbents can also provide large sets of user data to develop new models and offerings. Moreover, partnering makes sense for startups instead of competing with established players while simultaneously trying to upscale. Collaboration further helps startups compete in the marketplace, against companies offering similar solutions such as e-wallets under pre-existing brands, such as certain telecom and public sector players.

In order to collaborate, financial institutions are experimenting in different ways. Many have started investing directly in promising FinTech startups, supporting them in developing products which supplement their current offerings. Another model for collaboration involves co-development, i.e., conceptualising and building together, by finding common or complementary value propositions. In general, the methods that Indian financial institutions use while working with new FinTech technologies can be summarised under the following heads:

- **Supplementary Offerings**: using new or existing subsidiaries or sub-brands to offer new services
- **Partnerships**: develop solutions together with FinTech companies
- **Acquisitions**: enhancing their value chain by on-boarding proven FinTech companies
- **Incubating**: running startup programs to incubate companies relevant to their market
- **Investing**: setting up venture funds to invest in FinTech companies
- **Bridge-Makers**: bridging the gap between innovation demand and supply by curating the best ventures to meet enterprise needs, deploy innovation at scale, and manage change

As for the startups, recent trends have shown traction in the market, shifting from B2C startups to B2B startups. Many previously B2C FinTech companies are also pivoting their business models by offering their technologies and services to the existing financial industry players, rather than aiming to replace them. There is also a growing trend of FinTech startups white-labelling their existing consumer facing solutions for banks and other financial institutions. Others are either partnering with incumbents, participating in pilot programs or are set up to operate independently, and hence compete directly with the incumbents. Partnerships with FinTech companies in India are expected to go up from 42% in 2016 to 95% this year on average[11].

The road to collaboration, however is not free of obstacles. These obstacles arise from the differences in the working models, security and culture of FinTech companies and financial institutions. Institutions struggle due to compatibility issues, legacy systems and their slow adoption of innovation breakthroughs. FinTech companies on the other hand, are able to adapt quickly due to their technical proficiency and lack of bureaucracy, but face legal, cultural and other hindrances in working with traditional financial institutions. Differences also arise due to the fact that FinTech companies focus on bringing new levels of efficiency and speed to specific parts of the value chain, while established institutions are required to cover the whole spectrum of transaction services.

Despite these challenges, collaboration represents a highly promising avenue as of now; and with banking challenges emerging from all directions, the opportunities for collaboration are only growing with time.

[11] PwC FinTech report – Redrawing the lines: FinTech's growing influence on financial service

Startupbootcamp Success Stories

Startupbootcamp FinTech's global presence allows us to work closely with leading financial institutions and banks from key geographies. Here are some notable success stories of our partners collaborating with innovative FinTech startups to create value for their customers.

Lloyds Bank

Lloyds Banking Group became a Startupbootcamp FinTech partner in 2014. The partnership came at a time when the bank was undertaking a large-scale digital transformation program, which presented an ideal platform to test new ideas and connect with the wider FinTech ecosystem.

Lloyds' goal was to scan the market for innovation and find new opportunities to provide better service to their customers. Through the partnership with SBC, Lloyds is able to better understand emerging technology and new business models, test solutions and learn important lessons that help to deliver value to its customers. Collaborating with the FinTech program also provides inspiring examples of agility and working practices that refresh Lloyds' thinking and approach to delivering digital services.

Jehangir Byramji, senior innovation manager and finTech lead at Lloyds, says: "The Group sees huge value in startup accelerators that are working with a tailored group of corporate partners. With this goal in mind, the startups and the partners learn from each other and amongst themselves to foster collaborative working, allowing for better experimentation and proposition development."

Lloyds has partnered with Enterprise Bot, an AI powered chatbot solution that can be white labelled, and WoraPay, a proposition that allows staffers to buy food and drink and pay in advance with their mobile using their existing payment cards.

Rabobank

Rabobank's relationship with Startupbootcamp began in 2012, when the bank's leadership was interested in putting it at the forefront of FinTech innovation. Rabobank's partnership was driven by their approach to open innovation and desire to set up pilots and proof of concepts with Startupbootcamp portfolio companies.

The bank wanted to understand the key emerging business models and the underlying technologies driving change within its industry, and has partnered with several Startupbootcamp FinTech cohort startups including 24 Sessions, Enterprise Bot, Magnetic and Reprezen.

[1] PwC FinTech report – Redrawing the lines: FinTech's growing influence on financial service

The Road Ahead

The past year has seen an abundance of external influence on the financial sector besides the internal innovation carried out by startups and incumbent institutions. FinTech startups have made use of new technologies and disruptive approaches to come up with superior offerings. This trend is expected to continue through the coming years, with the number of outsiders continuously increasing. A thorough deep dive into specific segments leads to the conclusion that the following trends should play a strong role in the coming years.

Digitisation of Retail Banking

Coming years will see a rise in number of banks with data-driven, digital only models. The presence of an inclusive digital infrastructure, inclusive of payment systems such as UPI and an e-KYC service like Aadhaar, have enabled the emergence of such models.

The current concept and structure of the digital banking infrastructure can also undergo a revolutionary change with the emergence of AI-backed analytics solutions. Automated advisory and portfolio management solutions are likely to receive strong interest from both consumers and institutions. Further, in addition to conventional online and mobile banking, banking through a voice recognition enabled chatbot interface could be the next frontier that is ripe to be broached by banks and other financial institutions. Advancements in natural language processing and insights from the vast, untapped data that banks have can make such innovations possible.

SME Lending & Payments

India has had an established network of MSMEs for a long time. Despite their large numbers they have not been able to be specifically targeted by the banking ecosystem due to a lack of reliable data. They have also considered suboptimal borrowers as serving them proves unprofitable for traditional banks due to their small size and cost of credit delivery.

However, the recent shift to digital payments and the push from the demonetization move has made a significant number of MSMEs digitally capable. Banks can thus make use of the data that is now available and serve them better. Many FinTech startups are emerging in this space, especially in the alternative lending space.

Wealth Management

The wealth management space has predominantly consisted of HNI customers until now. However, the rise of robo-advisors has made the stock market more accessible to retail investors who generally make investments of small amounts and are thus not profitable as customers for traditional wealth management firms. The low cost of operation of robo-advisors makes it feasible to provide services to more customers, thus increasing the pool of retail investors. The number of robo-advisor based solutions will continue to rise in the wealth management sector, as retail investors become more financially literate with time.

Insurance

Insurance is one of the FinTech sectors that has witnessed the least disruption so far. This lack of disruption means that there is immense potential for FinTech to innovate across the insurance value chain from customer acquisition, to risk assessment and underwriting, and claims processing. Recent years have seen the rise of online insurance marketplaces where customers can compare and buy insurance. But the next level of disruption in the industry will seek to change the way insurers operate internally through data-driven automation of processes across the value chain.

Corporate and Investment Banking

The investment banking industry has seen a sharp increase in the automation of middle and back office processes. This has led to cost reductions and improved efficiency in almost all major banks. Investment banks can even go beyond basic automation now, to use artificial intelligence to explore optimization of their end to end processes, revolutionizing the industry and making many executives rethink their operating models. The application of these technologies is not limited just to back office processes, as the power of advanced analytics through machine learning can unlock a sea of real-time insights that can help the front-end sales teams and traders gain advantage over competitors.

42% vs 95%

current vs expected FinTech partnerships in India

Closing Notes

Startupbootcamp

India is currently witnessing an impactful and far reaching FinTech transformation, accelerated in part by government efforts towards incentivising cashless transactions and developing the Indian Stack. India's vast underbanked and new-to-bank population makes it one of the most exciting opportunities in the FinTech space anywhere in the world.

Our 2017 FinTech program in Mumbai establishes Startupbootcamp's entry into the Indian market with other programs to follow. We are excited and honored to be supporting innovation and entrepreneurship within India and to be a part of such a rich FinTech ecosystem. Innovation in traditionalist industries like banking and finance can be quite challenging for all those involved, and it is Startupbootcamp's mission to bridge the gap between young innovative startups and industry leading corporations. I'd like to take a moment to thank all of our mentors and partners for making our first program such a huge success, and giving our cohort startups the opportunity to really make an impact with their ventures.

Throughout my experience here in India, I've seen that banks are willing and eager to open their doors to change, putting their best foot forward to deliver exceptional user experiences both internally and externally.

The concept of open innovation has taken hold in the Indian FinTech ecosystem, and I only see it becoming more widely accepted in the coming years. Collaboration is the need of the hour for startups and corporates, and as digital transformation makes its way through the economy, we foresee increased collaboration between startups and corporates, as well as continued efforts from banks and other financial institutions to reduce friction at all customer touch points.

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Closing Notes

PwC

There are a plethora of FinTech startups emerging in India, across all segments in financial services. The pace at which FinTechs are emerging; there is no denying the fact that our country has enormous entrepreneurial potential. There are roughly 1500 FinTech startups, big and small, operating in India, and out of these, almost half were setup in the past two years.

While they may have promising ideas, they need grooming and nurturing both technically and financially. This is the void that is being filled by accelerators like Startupbootcamp (SBC). The kind of exposure that they get at a platform like SBC, access to investors and customers alike, is unmatched.

The FinTech revolution is being further encouraged by the initiatives of the government and regulatory bodies which are ready to go the extra mile to enable innovation in financial services a reality. Big banks and other financial institutions are also looking to actively collaborate with startups for their mutual benefit. Having a structured program for engaging with FinTech startups can almost act like an outsourced R&D function for the financial institutions.

This shows that India is on the verge of financial revolution. The total investment that the FinTech industry has witnessed in has boomed in 2015-17. There is still considerable momentum in the industry and we will continue to see this trend continuing hereafter. Though a majority of successful startups as of now have been in the payments space, moving forward we foresee a number of them coming up in other segments as well. Particularly in alternate lending, wealth management and insurance.

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