



## What is FinTech?

When fintech emerged in the 21st Century, the term was initially applied to the technology employed at the back-end systems of established financial institutions. Since then, however, there has been a shift to more consumer-oriented services and therefore a more consumer-oriented definition. Fintech now includes different sectors and industries such as education, retail banking, fundraising and nonprofit, and investment management to name a few.

Fintech also includes the development and use of Cryptocurrencies such as bitcoin. While that segment of fintech may see the most headlines, the big money still lies in the traditional global banking industry and its multi-trillion-dollar market capitalization.

At its core, fintech is utilized to help companies, business owners and consumers better manage their financial operations, processes, and lives by utilizing specialized software and algorithms that are used on computers and, increasingly, smartphones. Fintech, the word, is a combination of "financial technology".

## FinTech Expanding Horizons

Up until now, financial services institutions offered a variety of services under a single umbrella. The scope of these services encompassed a broad range from traditional banking activities to mortgage and trading services. In its most basic form, Fintech unbundles these services into individual offerings. The combination of streamlined offerings with technology enables fintech companies to be more efficient and cut down on costs associated with each transaction.

If one word can describe how many fintech innovations have affected traditional trading, banking, financial advice, and products, it's 'disruption,' like financial products and services that were once the realm of branches, salesmen and desktops move toward mobile devices or simply democratize away from large, entrenched institutions.

For example, the mobile-only stock trading app Robinhood charges no fees for trades, and peer-to-peer lending sites like Prosper Marketplace, Lending Club, and On Deck promise to reduce rates by opening up competition for loans to broad market forces. Business loan providers such as Kabbage, Lendio, Accion and Funding Circle (among others) offer startup and established businesses easy, fast platforms to secure working capital. Oscar, an online insurance startup, received \$165 million in funding in March 2018.<sup>4</sup> Such significant funding rounds are not unusual and occur globally for fintech startups.

Entrenched, traditional banks have been paying attention, however, and have invested heavily into becoming more like the companies that seek to disrupt them. For example, investment bank Goldman Sachs launched the consumer lending platform Marcus in 2016 and recently expanded its operations to the United Kingdom.<sup>5</sup>

That said, many tech-savvy industry watchers warn that keeping pace with fintech-inspired innovations requires more than just ramped-up tech spending. Rather, competing with lighter-on-their-feet startups requires a significant change in thinking, processes, decision-making, and even overall corporate structure.

## FinTech and New Tech

New technologies, like machine learning/artificial intelligence, predictive behavioral analytics, and data-driven marketing, will take the guesswork and habit out of financial decisions. "Learning" apps will not only learn the habits of users, often hidden to themselves, but will engage users in learning games to make their automatic, unconscious spending and saving decisions better. Fintech is also a keen adaptor of automated customer service technology, utilizing chatbots and AI interfaces to assist customers with basic tasks and also keep down staffing costs. Fintech is also being leveraged to fight fraud by leveraging information about payment history to flag transactions that are outside the norm.

## FinTech Landscape

Fintech startups received \$17.4 billion in funding in 2016 and were on pace to surpass that sum as of late 2017, according to CB Insights, which counted 26 fintech unicorns globally valued at \$83.8 billion. The same firm reported that there were 39 VC-backed fintech unicorns worth \$147.37 billion by the end of 2018. North America produces most of the fintech startups, with Asia a relatively close second. Global fintech funding hit a new high in the first quarter of 2018 led to a significant uptick in deals in North America. Asia, which could surpass the United States in fintech deals, also saw a spike in inactivity. Funding activity in Europe was at a five-quarter low in Q1 2018 but surged back in Q2.

**Some of the most active areas of fintech innovation include or revolve around the following areas:**

- Cryptocurrency and digital cash.
- Blockchain technology, including Ethereum, a distributed ledger technology (DLT) that maintains records on a network of computers, but has no central ledger.
- Smart contracts, which utilize computer programs (often utilizing the blockchain) to automatically execute contracts between buyers and sellers.
- Open banking is a concept that leans on the blockchain and posits that third parties should have access to bank data to build applications that create a connected network of financial institutions and third-party providers. An example is the all-in-one money management tool Mint.
- Insurtech seeks to use technology to simplify and streamline the insurance industry.
- Regtech, which seeks to help financial service firms meet industry compliance rules, especially those covering Anti-Money Laundering and Know Your Customer protocols that fight fraud.
- Robo-advisors, such as Betterment, utilize algorithms to automate investment advice to lower its cost and increase accessibility.
- Unbanked/under banked, services that seek to serve disadvantaged or low-income individuals who are ignored or underserved by traditional banks or mainstream financial services companies.
- Cyber security, given the proliferation of cybercrime and the decentralized storage of data, cyber security and fintech are intertwined.



## FinTech Users

There are four broad categories of users for fintech: 1) B2B for banks and 2) their business clients, 3) B2C for small businesses, and 4) consumers. Trends toward mobile banking, increased information, data, and more accurate analytics, and decentralization of access will create opportunities for all four groups to interact in heretofore unprecedented ways.

As for consumers, as with most technology, the younger you are the more likely it will be that you are aware of and can accurately describe what fintech is. The fact is that consumer-oriented fintech is mostly targeted toward millennial given the huge size and rising earning (and inheritance) potential of that much-talked-about segment. Some fintech watchers believe that this focus on millennial has more to do with the size of that marketplace than the ability and interest of Gen-Xers and Baby Boomers in using fintech. Rather, fintech tends to offer little to older consumers because it fails to address their problems.

When it comes to businesses, before the advent and adoption of fintech, a business owner or startup would have gone to a bank to secure financing or startup capital. If they intended to accept credit card payments they would have to establish a relationship with a credit provider and even install infrastructure, such as a landline-connected card reader. Now, with mobile technology, those hurdles are a thing of the past.

## Regulation and FinTech

Financial services are among the most heavily regulated sectors in the world. Not surprisingly, regulation has emerged as the number one concern among governments as fintech companies take off.

As technology is integrated into financial services processes, regulatory problems for such companies have multiplied. In some instances, the problems are a function of technology. In others, they are a reflection of the tech industry's impatience to disrupt finance.

For example, automation of processes and digitization of data make fintech systems vulnerable to attacks from hackers. Recent instances of hacks at credit card companies and banks are illustrations of the ease with which bad actors can gain access to systems and cause irreparable damage. The most important questions for consumers in such cases will pertain to the responsibility for such attacks as well as misuse of personal information and important financial data.

There have also been instances where the collision of a technology culture that believes in a "Move fast and break things" philosophy with the conservative and risk-averse world of finance has produced undesirable results. San Francisco-based insurance startup Zenefits, which was valued at over a billion dollars in private markets, broke California's insurance laws by allowing unlicensed brokers to sell its products and underwrite insurance policies. The SEC fined the firm \$980,000 and they had to pay \$7 million to California's Department of Insurance.

Regulation is also a problem in the emerging world of Cryptocurrencies. Initial coin offerings (ICOs) are a new form of fundraising that allows startups to raise capital directly from lay investors. In most countries, they are unregulated and have become fertile ground for scams and frauds. Regulatory uncertainty for ICOs has also allowed entrepreneurs to slip security tokens disguised as utility tokens past the SEC to avoid fees and compliance costs.

Because of the diversity of offerings in fintech and the disparate industries it touches, it is difficult to formulate a single and comprehensive approach to these problems. For the most part, governments have used existing regulations and, in some cases, customized them to regulate fintech.

They have established fintech sandboxes to evaluate the implications of technology in the sector. The passing of the General Data Protection Regulation, a framework for collecting and using personal data, in the EU is another attempt to limit the amount of personal data available to banks. Several countries where ICOs are popular, such as Japan and South Korea, have also taken the lead in developing regulations for such offerings to protect investors.

### **A Brief History of FinTech**

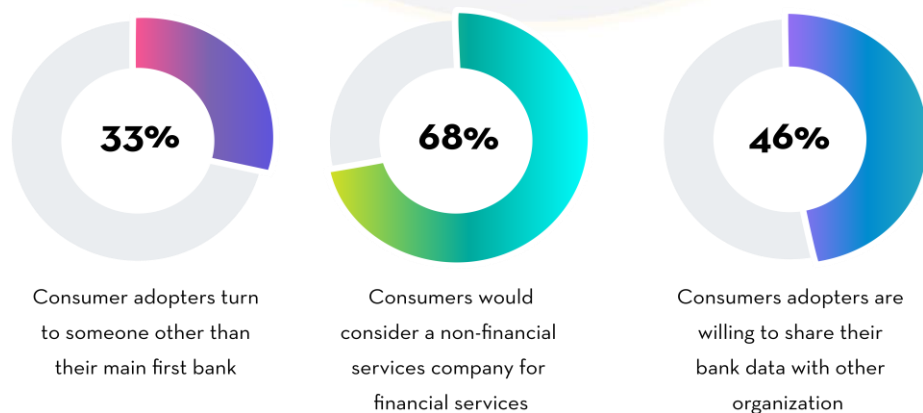
While fintech seems like a recent series of technological breakthroughs, the basic concept has existed for some time. Early credit cards in the 1950s generally represent the first fintech products available to the public, in that they eliminated the need for consumers to carry physical currency in their day-to-day lives. From there, fintech evolved to include bank mainframes and online stock trading services. In 1998, PayPal was founded, representing one of the first fintech companies to operate primarily on the internet — a breakthrough that has been further revolutionized by mobile technology, social media, and data encryption. This fintech revolution has led to the mobile payment apps, blockchain networks, and social media-housed payment options we regularly use today.

## Advantages of FinTech

- Greater accessibility. This also translates into an increase in the banked population since anyone with internet access can open an account and apply for a loan without any problem.
- On average, fintech has response times for applicants that range from 10 minutes to 48 hours.
- Time optimization. Thanks to the fact that all processes are carried out through the Internet, it is not necessary, in most cases, to go to a physical branch.
- Variety of services. Fintech has managed to segment services, so that a whole range of services is offered, according to the needs of both financial services users and providers.
- On the users' side, financial services range from opening a savings account, applying for a credit card, and various types of insurance, to investing in a company requesting funds to expand, as well as in international financial markets.
- On the part of financial service providers, fintech offer solutions ranging from analyzing the profiles of credit applicants, storing data in the cloud, and streamlining payment methods, among many others.
- Cost reduction. Another of the great differentiators of fintech, with which most of them intend to compete against traditional financial companies, is that the vast majority of fintech offers lower commissions than banks.

The financial sector has had to adjust quickly to the rapidly changing landscape that Fintech innovations have brought. None more so than the established, older organizations who are having to look at new ways to do business so as not to get left behind. In the UK alone, Fintech generates revenue of £6.6 billion per year with an estimated 1600 Fintech firms in the UK currently. This figure is expected to more than double by 2030, according to a report last year from the Department for International Trade. Technology has always been a driver of innovative ideas, so it is no surprise this has changed the way finance is dealt with and experienced by consumers all over the world. So, what are the advantages of the Fintech innovations that have led to so much investment over the last few years?

## Top Reasons Consumers Use Fintech



## **Price**

A key aspect of Fintech is with each innovation comes a potential reduction in cost, not just for businesses, but for the consumer as well. An example is UK fintech firm Cashplus, which with their Payments API (Application Programme Interface) innovation, has been able to potentially save companies 50% on transaction costs normally associated with the banks. This could mean £500 million in potential cost savings overall as the product can process simultaneous payments, saving time and money. With algorithms becoming more and more intelligent and able to judge things like lending risk more accurately, the automation of many processes means less of a physical presence is needed.

Some Fintech start-ups can then pass these savings onto their customers. Atom, for example, is a digital-only banking service much like Monzo or Revolut. As all its services are provided through its app, there are no physical branches, meaning no overheads to pay. This means they can offer a lower interest rate than their competitors for consumers.

## **Speed**

Many online or digital-only lenders can offer same-day lending if an applicant is approved, and this is only possible due to the advancements of Fintech. Say you were looking for short-term loans or a payday loan, for example, you would find many lenders offering a fast turnaround on their services. The demand from consumers to be able to get the service they need in an instant is high, with 90% of banks expecting growth in the usage of mobile applications, with an increasing focus on 'mobile-first' to be able to reach out to consumers, according to data from PwC. Many lenders have been able to deliver a quicker decision process thanks to less information needed from an applicant whilst still adhering to FCA lending guidelines. The automation process has been positive for many consumers, with Artificial Intelligence expected to power 95% of all customer interactions in the next decade with many preferring machine interactions over humans.

## **Accessibility**

The rapid development of Fintech is also helping to bring new opportunities to increase transparency, reduce costs and also make information more accessible. Fintech is helping to ensure that this information is at a consumer's fingertips. Fintech also helps to make some financial products more accessible for individuals who are classified as 'unbanked' – i.e. those without a current or basic bank account. Research from the University of Birmingham showed that in 2017, the number of people 'unbanked' in the UK hit an all-time low at around 1.23 million. However, this is still a large number of individuals who may not be able to access the financial help they need, without the use of Fintech.

## Security

With speed, and innovations come the need for tightened security protocols, and Fintech innovations have had their influence on this too. Reports suggest that UK businesses are the main loser – at a cost of around £21bn per year – when it comes to cybercrime due to the levels of intellectual property theft and espionage. In the financial sector, these costs reach just under £2.5 billion per year, highlighting the need for better security. One emerging innovation that follows the lead from the rise of smartphones using the technology, is biometric authorization. Being even more secure than a PIN, using your fingerprint to authorize payments and transactions is the next step in securing digital-only transactions in the future. Both Visa and MasterCard have trialed biometric bank cards in the last year and the signs are positive for future, widespread use.

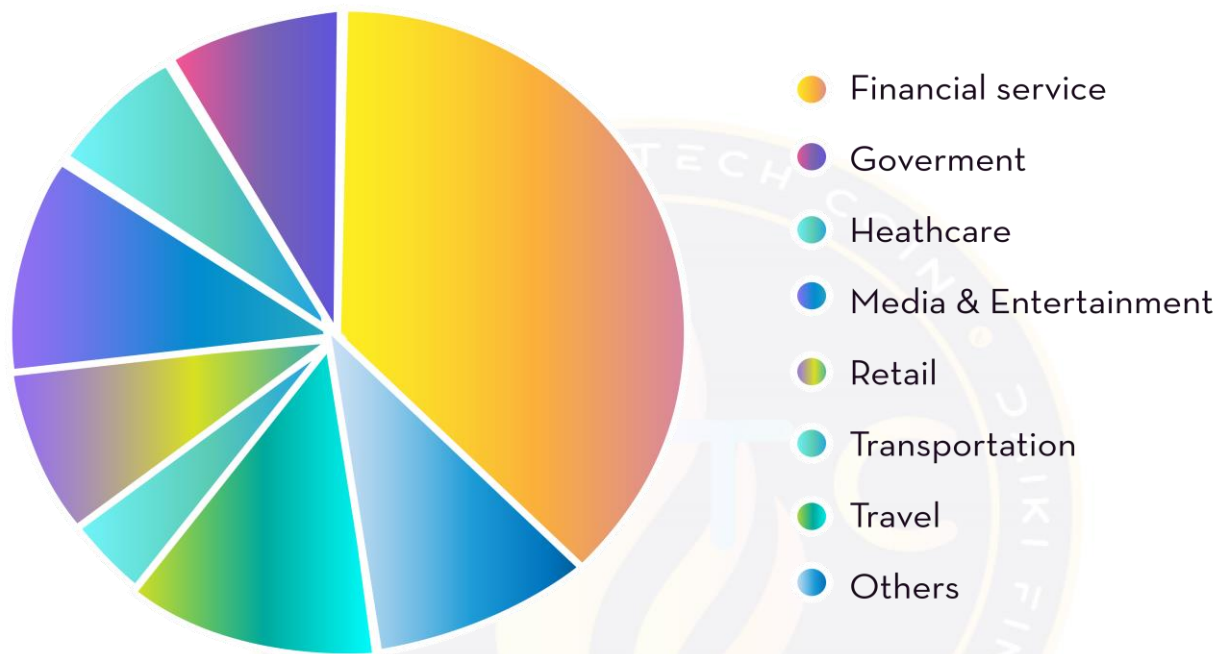
The development of Blockchain technology also, for example, is a secure way data can be stored on thousands of servers and has revolutionized the financial markets. Like Cryptocurrencies, the security and encryption involved mean trust is involved with consumers using them, especially while Fintech companies are rapidly expanding. It is expected by 84% of business executives that Blockchain technology will eventually have mainstream usage, with 450 million blockchain transactions having taken place up until September 2019.

The current and future state of Fintech innovation is in great health, with increasing investment and more and more companies taking on board the changes. 82% of traditional financial institutions expect to increase Fintech partnerships in the next 3 to 5 years, meaning there will be many more innovative changes ahead.

The fintech market is a market in constant growth in Latin America, in countries such as Mexico or Brazil there are more than 400 in each them, and in others such as the United States, the United Kingdom, or Israel a lot of money is invested in the creation of this type of companies that promise to change the face of the financial system.



## Blockchain Technology Market share, by end-user



### Accelerating the Fintech Revolution: How Blockchain will Change Finance Technology Forever

Fintech, like many other tech-oriented industries, is constantly evolving. There are new finance apps that are seemingly cropping up on a daily basis, offering bold new approaches to the managing and processing of payments. While this industry has been constantly growing, the arrival of blockchain technology threatens to bring an unprecedented level of disruption to finance technology.

Although synonymous with Cryptocurrencies like Bitcoin, blockchain's use cases are continually expanding into new areas of finance, as well as the healthcare, retail, entertainment and transport industries.

As we can see from the data above, fintech makes up the lion's share of the blockchain market, and for good reason. Over the course of the decade, we'll see digital ledgers leverage a fundamental change in how we send, receive, manage, and store our money. Let's take a deeper look at how the technology will make this possible.

## Optimizing Fintech with Blockchain Technology

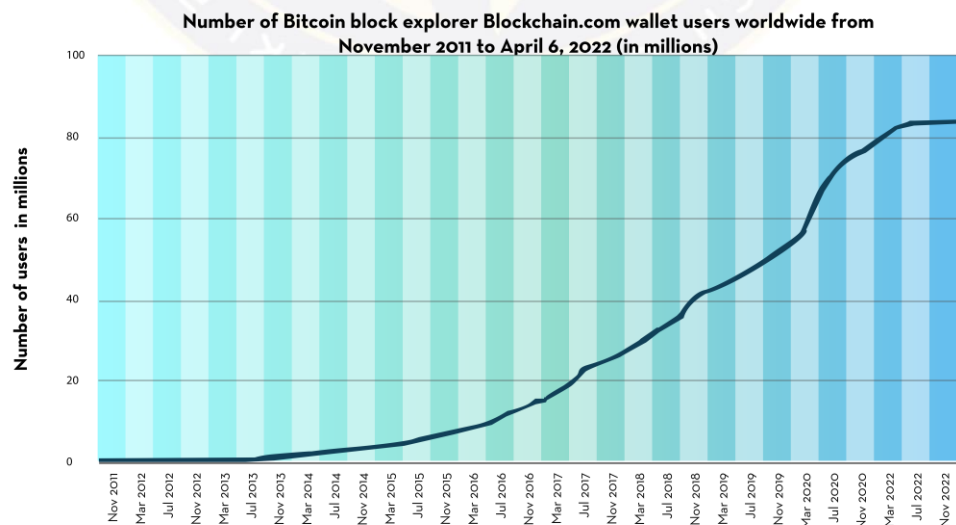
Blockchain essentially exists as an immutable block. With the technology, it's possible to develop an entire ecosystem of fintech apps. Blockchain technology can transform regular financial processes into entirely transparent procedures built on secure and efficient transactions.

When utilized correctly, blockchain can create a fintech ecosystem that can revolutionize finance completely. Financial transactions on the block need no middlemen present and are capable of establishing peer-to-peer networks, lightning-fast transactions and complete transparency. However, blockchain's application within finance can account for far more than transparent transactions. With blockchain technology, users can finally recapture full control of their wealth - helping to pave the way for a fully democratized financial landscape.

## Bankless Financial Management

We've already seen mass cases of blockchain enabling individuals to manage their wealth without a bank in sight. Those who choose to hold Cryptocurrencies like Bitcoin, Ethereum or any other form of digital asset, can do so with the use of blockchain digital wallets. These wallet holders are protected by private keys, whilst possessing their very own unique public address to allow them to send and receive payments with others. Through the use of blockchain technology, wallet holders who possess their private keys are the sole owners of their assets - unlike with traditional currency, there are no banks that take the responsibility of holding your money.

"Bitcoin and other Cryptocurrencies provide that freedom and ownership back to the population," says Carlos Barbero Steinblock, lecturer in Cryptocurrencies, blockchain, and the fintech industry at EU Business School. "You are managing your own wealth, you don't have to rely on or trust anyone else with your money." With the total number of global blockchain wallet holders rocketing towards 80 million worldwide in 2021, we can see clear evidence that blockchain's influence in democratizing finance is already underway - helping individuals to build wealth in a way that enables them to better control their assets.



**Additional information:**  
Worldwide; November 2011 to April 6, 2022; Number of unique Blockchain.com wallets created worldwide

## **Revolutionizing KYC**

Right now, trust and identity verification is performed through intermediaries and incumbents. Blockchain has the power to alter or even eliminate the trust element that's central to our current financial ecosystem.

Know-your-customer will take place as a single digital entry and cryptographically secured and distributed across the network as a means of eliminating multiple entries and verification. These improvements in the field of security are set to directly aid sectors like retail banking, wholesale banking, investment banking, payment networks, lending marketplaces, equity crowd funding, asset managers, broker-dealers and regulators alike.

## **Borderless Payments**

Another revolutionary feature of blockchain is that it supports borderless transactions through the decentralized currency that uses its framework. The technology can also pave the way for faster and more straightforward payments due to it costing less to make transfers between accounts. Because blockchain transfers don't need authorization via middlemen, and banks don't have to use resources to transfer funds, the payment processing fees for international payments are far less also.

Blockchain will pave the way for a better flow of currency worldwide. Typically banks would charge some 10% to 15% of the amount transferred as a remittance fee - however, with blockchain, this figure can fall as low as 3%.

Blockchain payments, as we've already noted, are also extremely secure since all the participants in the chain's transaction need to provide their approval for the transaction to go through - and anybody can check the updated ledger for the details surrounding the transfer.

Furthermore, because there's no need for third parties to transfer funds, it's also possible to use P2P transfers to leverage transactions. This enables banks to compete with fintech startups to generate their own suites of fintech services.

Fintech has grown to become an influential force in the modernization of traditional financial institutions. As a result, the past 10 years has seen us transition faster towards a cashless society, with more investment opportunities and options for storing our wealth than ever before. However, the emergence of blockchain technology is set to bolster the development of fintech - paving the way to truly democratize finance and make it possible for individuals to manage their wealth without the necessity of middlemen or major institutions themselves.

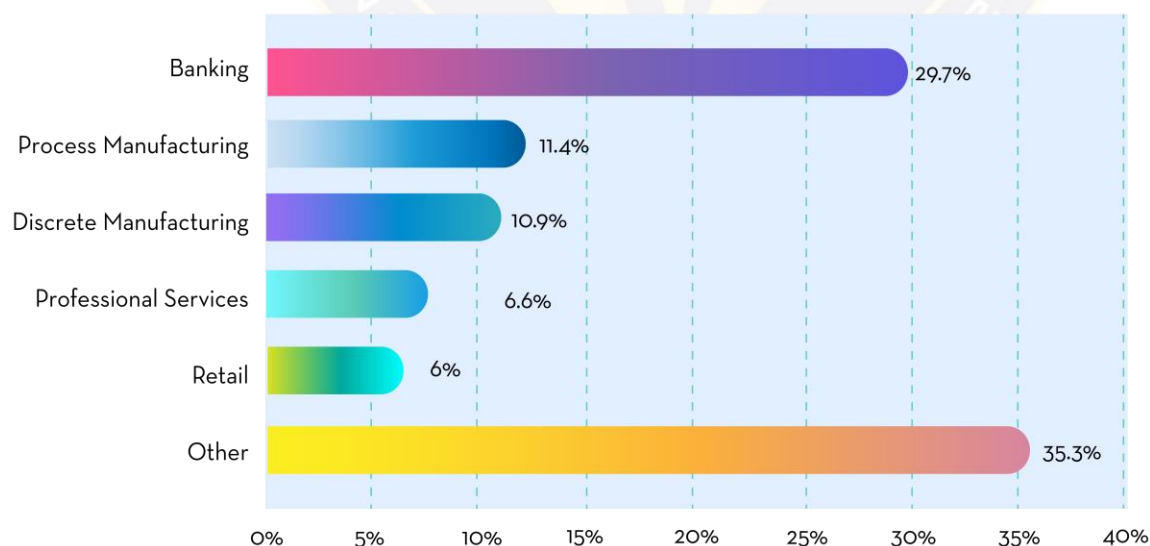
## Evolution of FinTech

Finance is one of the industries that first started implementing IT, and everyday users began to receive benefits from it. Fintech has learned to apply innovative technologies relatively quickly, and now financial organizations are leveraging it to gain more value-ads on the market and improve the operations' security.

Think about international payments, money transfers, settlements abroad, cash withdrawals at ATMs in distant areas, and swift transactions using just mobile phones. Yes, now it sounds like an ordinary, everyday thing. Nevertheless, it was a tremendous breakthrough when new technological opportunities disrupted the capital market such as mobile internet and digital communications. It stimulated the emergence of entirely new approaches and formed an international financial ecosystem where everyone communicates and exchanges information with each other.

The use of new methods often requires changes in the regulation process, which constrained the transformation of the traditional financial sector in some ways. Today, at the risk of losing the battle to cutting-edge tech companies, conventional financial businesses are eager to adapt approaches and technologies to existing regulations and devote substantial attention to changes in the regulatory system itself. According to Statista, the banking industry has the most extensive blockchain spending, with a market share of almost 30 percent. Blockchain-based fintech can be the next stage of the financial industry's evolution, which is likely to remove the middle man, add transparency, and enhance each transaction's security. If you are a CEO of a financial organization or an expert, it's essential to understand blockchain's role in fintech if you want to be a part of this revolution.

### Distribution of Blockchain market value worldwilde in 2020, by vertical





## **How Blockchain is Transforming the Financial Ecosystem**

The blockchain in fintech can provide more seamless and efficient banking services, from cost reductions to minimizing bureaucracy in traditional banking that benefits both the bank and the clients.

Blockchain is diving into the fintech market, and its here to stay.

“Worldwide blockchain in the fintech market is foreseen to grow from USD 231.63 million in 2017 to USD 6700.63 million by 2023, at a yearly growth rate (CAGR) of 75.2% during the prediction period”, specified by Market Research Future.

Blockchain assists in managing data breaking and other fraudulent operations to enable fintech businesses to share and transfer safe and unaltered data through a decentralized network. It will help make data more secure with algorithms even in an encrypted state and help track, comprehend, and audit AI decisions better, thus providing the level of transparency required for the people to trust machine-driven intelligence.

Furthermore, blockchain technology can help eliminate the stock market’s shady tactics such as stock tampering, processing time and charges, and all intermediaries’ commissions.

### **Fintech and Blockchain: Use Cases**

Andy Martin, a world-class blockchain expert, recently forecasted market changes based on the token economics forced by blockchain and described what exactly it provides:

“Decentralized communities provide certainty of identity, “who am I dealing with”, the certainty of provenance, “what am I buying” and smart contracts give certainty of execution, “if I do this, then I get paid” in these new marketplaces.”

Let’s look into the use of cases of blockchain that describe the real benefits for the finance sphere.

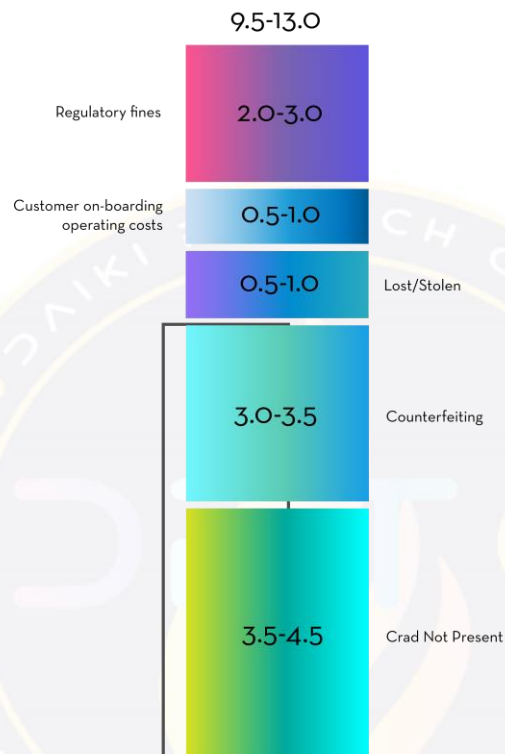
### **Reduced Costs and Transactions in a Matter of Minutes**

Transferring funds or assets has always been a time-consuming process when using traditional banking. Sometimes sending a mere \$100 can take ages while two banks go through all the necessary protocols needed to finish the transaction.

With blockchain implemented in fintech apps, sending money, regardless of the amount, is much faster – what can become a matter of minutes. Blockchain-based transactions occur in real-time, so the recipient will not have to wait for days and weeks until they get money.

Moreover, fintech applications powered by blockchain can drastically reduce the transaction costs enabling direct, P2P transactions that eliminate any middleman, meaning all unnecessary expenses and fees. For instance, remittance costs within the blockchain are 2-3% of the total amount compared with 5-20% withheld by other third parties. According to McKinsey, blockchain solutions for onboarding, regulatory compliance, and fraud could save banks significant amounts.

## Savings potential from blockchain-based solution, \$billion










### Secure Digital Identity Management and Smart Contracts

Fintech and blockchain enable users to determine how they identify themselves and with whom they want to share their identity. Assuming blockchain fintech companies ensure that the registration process is safe and sound, end-users will never have to worry about who the person on the other end of the transaction is. Blockchain in fintech allows customers to use a digital fingerprint, which, like an actual fingerprint, can be used as a unique identifier. It can be stored on a distributed ledger and referenced by any bank in the network.

A smart contract is a self-sustaining protocol implemented in computer code managed by a blockchain that contains a set of rules under which the individuals of that smart contract agree to cooperate. Smart contracts allow performing credible transactions without third parties while ensuring security and credibility.

# Blockchain smart contracts to reimagine financial services industry

Traditional contracts	Smart contracts
 1-4 Days	 Immediately within minutes
 Manual remittance system	 Automated remittance solution
 Escrow required	 Completely substitutes Escrow
 Physical presence (wet signature)	 Virtual presence (digital signature)

Furthermore, in a high-level blockchain fintech app, the user needs to register only once. Every following login would never require additional info other than the private key.

## A Global Network without Geographic Limitations

Since blockchain is internet-based, it does not need any specific setup for operating. With decentralized systems, fintech companies empowered by blockchain can turn global transactions into swift, usual protocols with only a single requirement – access to the internet.

One more thing to know is that blockchain exists everywhere, making it possible to make person-to-person payments (P2P) transfers worldwide. People can access their data and manage funds from anywhere and all a user needs to perform any transaction is a private key. It would be a never-before-seen upgrade to how finances are being managed now.

## **Top-tier Management and Auditing**

Since we're heading for a single network available to anyone who has an internet connection, the need for fast and efficient transactions auditing would be at an all-time high.

Building blockchain-based apps will enable fintech developers to create first-tier auditing protocols. Blockchain functions as a storage of linear blocks that add a new entry for every further action, but it never tampers with old blocks no matter how big the system gets. It provides all the data needed to conduct a quick and secure audit of transactions, ensuring high-level transparency.

## **NIX Blockchain Fintech Solution**

At NIX, we have successfully delivered blockchain solutions in the fintech domain, depending on the clients' precise needs, with high-level security, confidentiality, and scalability.

One of our featured projects is a decentralized platform that provides fast and reliable exchanging of cryptocurrencies to fiat money worldwide. The client had a custom platform, deployed on the Ethereum blockchain, and needed professional back-end and front-end development services to reinforce the infrastructure. Our research showed that modifying or fixing a legacy code didn't make sense, and the client agreed to develop the system from scratch. We developed a platform that works with Ethereum smart contracts and NEO wallets. The system became a successful ICO project and guarantees fair deals and a high-security level using blockchain smart contracts and interactions with the most popular payment systems' API.

## **Future of Blockchain in Finance**

Blockchain in the fintech industry can provide us with a far more seamless and effective alternative to banking, built around the concepts of equity and decentralization. Blockchain-based fintech enables swift transfers of funds, top-of-the-line security, and transparent financial tracking.

At NIX, we have vast experience in adopting cutting-edge technologies in clients' businesses and know how to implement blockchain technology based on the clients' needs and requirements for different domains, ensuring security, confidentiality, and scalability. We can help you choose the most suitable solution for your business and bring it to the next level.