Megatrends and Innovations Shaping the Future of Finance



Pooja Lekhi

Abstract There are several megatrends in the finance industry that are shaping its evolution and driving significant change in the sector. This trend is being driven by a combination of factors, including technological innovation, regulatory reform, and the rise of fintech companies. The finance industry is subject to increasingly complex and stringent regulatory requirements, with a focus on consumer protection, financial stability, and risk management. Some other factors contributing to this change are shifting demographic patterns, such as an aging population, and changing consumer preferences for digital and mobile financial services. Overall, these megatrends are shaping the finance industry's future and driving significant change in how financial services are delivered, consumed, and regulated. This chapter covers the most significant innovations and recent developments in the finance industry like Mobile Banking, Digital Wallets, Cryptocurrencies, Peer-to-Peer Lending, Robo-Advisors, Open Banking, Blockchain and cloud computing, CBDC, and sustainability. The chapter explores how these developments are changing the face of finance and shape finance industry of future.

Introduction

The finance industry plays a crucial role in the overall functioning of the global economy. However, there is a constant need for development and innovation in this industry to keep up with the changing economic landscape and evolving consumer needs. With the increasing adoption of digital technologies and the rise of the millennial generation, consumer behavior in the finance industry is rapidly changing. Consumers are demanding more personalized and user-friendly financial products and services that can be accessed and managed from anywhere, at any time.

P. Lekhi (⊠)

University Canada West, Vancouver, BC, Canada

e-mail: pooja.lekhi@ucanwest.ca

According to a report by McKinsey, "customers are demanding greater speed, convenience, and simplicity in their financial interactions, and expect digital experiences that are as good as or better than those provided by technology leaders like Amazon and Google" (McKinsey & Company, 2019). Technology is transforming every aspect of the finance industry, from customer service and operations to risk management and compliance. Innovations such as blockchain, artificial intelligence, and machine learning are revolutionizing how financial transactions are processed and how risk is assessed, Turi (2020b).

According to a report by Deloitte, "The accelerating pace of technology change is driving firms to adapt and innovate at an unprecedented pace, leading to a paradigm shift in the way the financial services industry operates" (Deloitte, 2018).

The finance industry is highly regulated, and regulatory requirements are constantly evolving. Financial institutions must stay up to date with regulatory changes and implement effective compliance strategies to avoid penalties and maintain their reputation. According to a report by PwC, "Regulatory change remains a significant driver of innovation and investment in the financial services industry, with firms looking to balance the need for compliance with the desire to remain competitive and innovative" (PwC, 2021).

Therefore, the need for development in the finance industry is driven by changing consumer behavior, technological advancements, and the evolving regulatory environment. Financial institutions that can adapt to these changes and innovate their products and services will be better positioned to succeed in the long run.

Recent Developments in the Finance Industry

Some of the recent developments that are revolutionizing the financial landscape include digital assets, including cryptocurrencies, non-fungible tokens (NFTs), digital collectibles, and security tokens, and the rise of DeFi and its various applications, such as decentralized exchanges, lending and borrowing platforms, and decentralized insurance. Additionally, the growing field of sustainable finance and its integration with digital assets and DeFi is also a megatrend.

Digital assets are assets that exist in digital form and are verified and secured using cryptography and blockchain technology. Some examples of digital assets include cryptocurrencies, non-fungible tokens (NFTs), digital collectibles, and other digital tokens that represent ownership or value.

Cryptocurrencies: Cryptocurrencies are digital assets that use blockchain technology to verify transactions and maintain a secure ledger of ownership Turi (2020a); Turi and Thilakarathnei (2023). Some popular cryptocurrencies include Bitcoin, Ethereum, and Litecoin. These digital assets have gained popularity due to their decentralization, security, and potential for growth in value Lekhi (2023).

According to Fig. 1, the United States stands out as the leading country in Bitcoin trading, accounting for 22.77% of the world's Bitcoin volume. This significant percentage translates to a value of over \$1.44 billion in BTC. Alongside the United



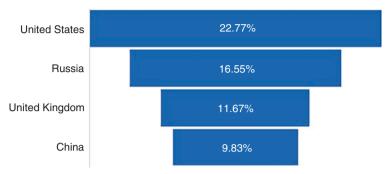


Fig. 1 Country's trading in Bitcoin. Source: Composed by Author, data retrieved from buybitcoinworldwide.ct

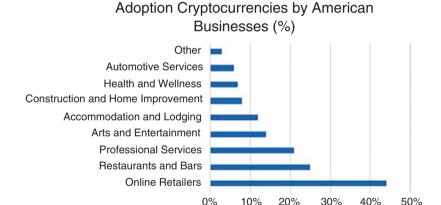


Fig. 2 Businesses in the United States to accept cryptocurrencies. Source: Composed by Author, Data is sourced from (HSB, 2021)

States, other prominent countries involved in Bitcoin trading include Russia, the United Kingdom, and China.

Considering the United States' dominance in Bitcoin trading, it is crucial to conduct further research to analyze the adoption of cryptocurrencies by businesses in the American region.

Figure 2 elucidates the most common types of small and mid-sized businesses in the United States to accept cryptocurrencies are online retailers (44%), followed by restaurants and bars (25%), and professional services (21%). The growth of cryptocurrencies can be attributed to their increasing popularity, investment potential, the underlying blockchain technology, institutional adoption, and evolving regulatory landscape. As cryptocurrencies continue to evolve and gain acceptance, their impact on the financial landscape is likely to expand further.

Non-fungible Tokens

NFTs are unique digital assets that use blockchain technology to verify ownership and authenticity (BBC News, 2021). NFTs are typically used to represent art, music, videos, and other types of digital content, providing a new way for creators and collectors to buy, sell, and trade digital assets. The NFT market has exploded in 2021, with NFT sales reaching over \$2 billion in the first quarter of the year alone (source: NonFungible.com, 2021).

NFTs are created using blockchain technology, which provides a decentralized and tamper-proof way to verify ownership and authenticity. Each NFT is unique and contains metadata that specifies the ownership, history, and other relevant information about the digital asset it represents.

NFTs are being used in a variety of applications, including digital art, music, sports collectibles, virtual real estate, and more (BBC News). NFTs provide a way for creators to monetize their digital content and for collectors to invest in unique and rare digital assets.

Digital Collectibles

Digital collectibles are similar to NFTs, but they may not necessarily be unique. They can represent items such as in-game assets, virtual goods, or other digital items that can be traded or sold. Some popular digital collectibles include CryptoKitties and NBA Top Shot.

Security tokens: Security tokens are digital assets that represent ownership in a real-world asset, such as a company or property. These tokens are regulated by securities laws and are subject to the same legal requirements as traditional securities.

Stablecoins

Stablecoins are digital assets that are designed to maintain a stable value, usually pegged to a real-world asset such as the US dollar, gold, or another fiat currency [Ong, 2020]. These assets are designed to reduce volatility in the cryptocurrency market and provide a stable store of value. Some of the popular stablecoins include USDT, USDC, and DAI.

Overall, digital assets have gained popularity due to their security, decentralization, and potential for growth in value. However, regulatory challenges and market volatility remain key challenges for the digital asset industry.

Sustainable Finance

Sustainable Finance is a growing field that incorporates environmental, social, and governance (ESG) factors into financial decision-making. Recent developments include the issuance of sustainable bonds, integration of ESG factors into investment decision-making processes, climate risk assessments, proliferation of sustainable investing products, alignment of investments with the UN's Sustainable Development Goals, development of green taxonomy, and increased corporate sustainability reporting. These developments demonstrate the increasing recognition of the importance of ESG factors in financial decision-making. The issuance of sustainable bonds has grown significantly in recent years, with a record \$465 billion issued in 2020, up from \$257 billion in 2019. These bonds are typically used to finance projects that have positive environmental or social impacts (Environmental Finance, January 21, 2021).

The Rise of Decentralized Finance

Decentralized Finance (DeFi) is a new financial system that operates on a decentralized blockchain network [Ethereum (Buterin, 2014)]. It is built on the principles of blockchain technology, which allows for transparent and secure transactions without the need for intermediaries such as banks or financial institutions [Ong, 2020]. DeFi aims to democratize financial services by providing access to financial tools, such as lending, borrowing, and trading, to anyone with an Internet connection and a compatible wallet. The growth of decentralized finance (DeFi) applications, which are built on blockchain technology and enable users to access financial services without intermediaries, is also contributing to the use of digital assets. The total value locked in DeFi protocols has grown from less than \$1 billion in early 2020 to over \$80 billion as of February 2022 (DefiPulse, 2023).

One of the key features of DeFi is the use of smart contracts, which are self-executing agreements that enforce the terms and conditions of a transaction (Buterin, 2014). Smart contracts enable the automation of financial services, such as lending and borrowing, and eliminate the need for intermediaries. DeFi is an umbrella term that encompasses a wide range of financial applications and services. Some of the most popular DeFi applications include the following:

Decentralized Exchanges allow users to trade cryptocurrencies without a centralized intermediary [Uniswap, 2021]. These exchanges operate on a peer-to-peer network (Turi et al., 2017) and use smart contracts to execute trades. Some of the leading DEXs include Uniswap, Sushi Swap, and PancakeSwap.

DeFi lending and borrowing platforms, such as Aave and Compound enable users to lend and borrow cryptocurrencies without intermediaries. These platforms use smart contracts to enforce the terms and conditions of the loan, and lenders earn

interest on their deposited assets, while borrowers can access liquidity without going through a traditional bank (Aave, 2021).

Decentralized insurance platforms, such as Nexus Mutual and Cover Protocol, enable users to purchase insurance coverage without the need for traditional insurance companies. These platforms use smart contracts to automate the claims process and enable users to pool their funds to cover potential losses (Nexus Mutual, 2021).

Overall, DeFi is a fast-growing sector that is disrupting traditional finance by providing a more accessible, transparent, and decentralized financial system.

Rise of Digital Assets in Recent Years

The use of digital assets has been on the rise in recent years, with more people investing in cryptocurrencies and other digital assets. Here are some recent statistics on the use of digital assets:

- Cryptocurrency market cap: The total market capitalization of cryptocurrencies reached an all-time high of over \$2.4 trillion in May 2021, up from just \$17 billion in January 2017 As of March fifth, 2023, according to CoinMarketCap, the total market capitalization of cryptocurrencies is around \$1.88 trillion (CoinMarketCap, 2023).
- *Bitcoin ownership:* The number of Bitcoin holders has grown significantly, with over 100 million unique Bitcoin addresses recorded as of September 2021 (Blockchain.com).
- Cryptocurrency trading volume: The trading volume of cryptocurrencies has also increased, with over \$800 billion in daily trading volume recorded across all cryptocurrency exchanges in August 2021 (CoinGecko, n.d.)(https://www.coingecko.com/).
- Institutional adoption: Institutional adoption of digital assets has also increased, with major financial institutions like JPMorgan, Goldman Sachs, and Morgan Stanley launching cryptocurrency trading and custody services (CNBC, 2021).
- *Non-fungible tokens (NFTs):* The use of NFTs, which are unique digital assets that use blockchain technology to verify ownership and authenticity, has also gained popularity, with total NFT sales volume reaching over \$2 billion in the first half of 2021 (NonFungible.com, 2021).
- Central bank digital currencies (CBDCs): CBDCs are digital currencies issued by central banks that are intended to complement or replace physical cash. CBDCs have been in development by central banks around the world, with China's digital yuan being one of the most advanced. The introduction of CBDCs could have significant implications for the traditional banking system (BIS, 2021). Its adoption is gaining momentum. Many countries are exploring the possibility of issuing a CBDC. According to a report by the Bank for International Settlements (BIS, 2021), as of January 2022, 79% of central banks were research-

ing CBDCs, 18% were running pilots, and 6% had launched a CBDC. Some notable countries that have launched or are planning to launch a CBDC include China, the Bahamas, and Sweden.

Overall, the use of digital assets has become more widespread, with more people investing in cryptocurrencies, trading digital assets, and exploring new applications like NFTs. However, regulatory challenges and market volatility remain key challenges for the digital asset industry.

Emerging Financial Technologies

Financial technology, also known as fintech, is the application of technology to financial services to improve efficiency, convenience, and accessibility. Fintech encompasses a wide range of services including online banking, mobile payments, peer-to-peer lending (Turi et al., 2017), investment management, and cryptocurrency.

Fintech has emerged as a disruptive force in the financial industry, challenging traditional financial institutions with innovative and cost-effective solutions. Fintech companies leverage technology such as artificial intelligence, blockchain, and cloud computing to offer faster, cheaper, and more personalized services to consumers and businesses Lekhi (2023).

Robo-Advisors.

Robo-advisors, the digital platforms that use algorithms to provide automated investment advice and portfolio management services to investors, typically use advanced software to analyze investor preferences, risk tolerance, and financial goals to provide customized investment recommendations. Robo-advisors have become increasingly popular in recent years due to their low fees and ease of use. Some of the most popular robo-advisors include Betterment, Wealthfront, and Acorns. The global robo-advisory market is expected to reach \$1.4 trillion by 2027 (Source: Grand View Research, 2021).

• *Increasing Adoption of Cloud Computing.*

Cloud computing is a technology that allows users to access computing resources such as servers, storage, applications, and services over the Internet, rather than having to manage and maintain their own physical infrastructure. In cloud computing, the computing resources are hosted by third-party service providers and can be accessed from anywhere with an Internet connection (Armbrust et al., 2010).

The finance industry has been rapidly adopting cloud computing technology in recent years. According to a report by Markets and Markets (2020), the cloud computing market in the financial services sector is expected to grow from \$23.4 billion in 2020 to \$50.1 billion by 2025, at a compound annual growth rate (CAGR) of

16.7%. Cloud computing can help financial institutions save costs on IT infrastructure and maintenance. According to a report by Cappemini (2020) banks can save up to 30% on IT infrastructure costs by moving to the cloud. Cloud computing can help improve data security for financial institutions by providing secure data storage and access controls. According to a report by IBM, 77% of financial institutions believe that cloud computing has improved their security posture. Some of the key benefits of cloud computing include cost savings, scalability, flexibility, and improved collaboration and productivity.

· Online Banking.

Another development is Online banking; also known as Internet banking, which is a service offered by financial institutions that allow customers to conduct various financial transactions using the Internet (Investopedia, 2021). With online banking, customers can access their account information, view account balances and transaction history, transfer funds between accounts, pay bills, apply for loans, and manage other financial services (Consumer Financial Protection Bureau, 2021). Mobile banking is becoming increasingly popular, with customers accessing their accounts and making transactions through mobile apps. According to a report by the Federal Reserve, 76% of smartphone owners use mobile banking (Federal Reserve, 2020).

• Digital-Only Banks.

Digital-only banks, also known as neo banks, are banks that operate exclusively online without any physical branches. These banks offer a range of banking services, often with lower fees and more competitive interest rates than traditional banks. Examples include Chime, Varo, and Revolut. Banks are using data analytics and machine learning to personalize the online banking experience for customers. This includes tailoring product offerings, alerts, and communications to individual customers based on their transaction history and preferences.

Open Banking.

Another development is Open banking which allows third-party financial service providers to access customer data, with the customer's permission, through application programming interfaces (APIs). This enables customers to use a range of financial services through a single online platform. For example, a customer could use their online banking platform to access a range of investment and insurance products from different providers (Deloitte, 2018) (Fig. 3).

According to the Global Fintech Report 2021 by CB Insights, it was found that mobile banking and payments are the most widely adopted fintech services globally, with 63% of consumers using mobile banking and 53% using mobile payments. Overall, the widespread adoption of mobile banking and payments has made financial transactions more accessible, convenient, and secure for users globally.

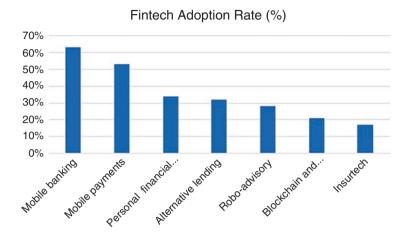


Fig. 3 The adoption of Fintech worldwide. Source: Composed by Author based on Global Fintech Report 2021 by CB Insight

The Future of Financial Technologies: Trends and Projections

The increasing digitization of money is significantly changing our interactions with money to the point that physical money may become obsolete. This is not an unrealistic idea, given that over 600 currencies have vanished in the last three decades, and it is possible that more could follow suit or be substituted by digital currencies. Even major currencies, such as the Euro, are considering implementing a "digital euro," as explored by the European Central Bank (Marr, 2022).

Financial technologies (fintech) have been rapidly changing the landscape of the financial industry. As technology continues to advance, the future of fintech looks promising. This answer will explore some of the potential trends and projections that may shape the future of fintech, including mobile payments, blockchain technology, artificial intelligence (AI), digital banking, and cybersecurity.

- The use of mobile payments is becoming increasingly popular as more people
 use their smartphones to pay for goods and services. The convenience of mobile
 payments is a key factor in its growing popularity, as it allows consumers to pay
 for purchases without carrying cash or credit cards. According to a report by
 Statista, the global mobile payment transaction value is projected to reach \$4.9
 trillion by 2024 (Statista, 2021).
- The use of blockchain technology in financial transactions is expected to grow. Blockchain technology provides a secure and efficient way to process financial transactions, and it is expected to revolutionize the financial industry (Kohli et al. (2023). According to a report by Allied Market Research, the global blockchain market size is projected to reach \$61.36 billion by 2028, growing at a CAGR of 51.2% from 2021 to 2028 (Allied Market Research, 2021).

- The use of AI in fintech is also expected to grow. AI can be used to analyze financial data and provide insights to financial institutions. This can help financial institutions make more informed decisions about risk management, investments, and fraud detection. According to a report by Accenture, the adoption of AI in financial services is projected to create \$140 billion in value by 2025 (Accenture, 2021).
- Digital banking is becoming more popular, and it is expected to continue to grow.
 Many people prefer the convenience of banking from their smartphones or computers. According to a report by Business Insider, the number of mobile banking users in the United States is projected to reach 160 million by 2024, up from 131 million in 2019 (Business Insider, 2019).
- As fintech grows, cybersecurity will become increasingly important. Financial
 institutions will need to invest in cybersecurity to protect their customers' data.
 According to a report by Cybersecurity Ventures, global cybersecurity spending
 is projected to exceed \$1 trillion from 2017 to 2021 (Cybersecurity Ventures, 2017).

Overall, the future of fintech is bright. The use of technology is expected to continue to revolutionize the financial industry, making it more efficient and convenient for consumers. However, it is important for financial institutions to invest in cybersecurity to protect their customers' data and maintain consumer trust.

Megatrends in Different Finance Sectors

Banking Sector

The banking industry continues to undergo digital transformation, with an increasing shift toward digital banking services, mobile banking apps, and online transactions. Technological advancements, fintech disruption, regulatory changes, and data-driven insights are key factors contributing to this trend. It is reshaping the industry by revolutionizing customer experiences, optimizing operations, fostering innovation, and driving efficiency and profitability. According to a report by Statista 2023, The Digital Banks market worldwide is projected to grow by 13.39% (2023–2028) resulting in a market volume of US\$1219.00 bn in 2028.

Real Estate

The real estate industry has seen a significant rise in the adoption of financial technology (fintech) solutions. According to a report by Deloitte 2022, incorporating digital technologies and tools to streamline various tasks and operations involved in managing properties. Currently, property management services encompass activities such as organizing general and board meetings, performing face-to-face

responsibilities, and undertaking labor-intensive tasks like cleaning, inspections, and patrols. Due to the personalized nature of these services, the industry as a whole has been slow to adopt digitalization.

However, as the challenge of labor shortages intensifies, property management firms recognize the need to enhance efficiency in order to handle and oversee a greater number of condominium units per employee, thereby bolstering their overall revenues. By embracing digitalization, property management can realize improvements in efficiency. First, simply as a replacement of labor, by means of, e.g., cleaning robots, IoT technology for inspections and patrols, and chatbots for handling complaints. All of these will help keep down personnel costs. Online distribution and storage of general and board meeting materials, conducting resident surveys online, digitalizing inspection and maintenance records, and introducing an accounting system to improve existing workflow.

Capital Markets

The capital markets sector has also experienced a growing impact from fintech advancements. The previous year, global investment in capital markets fintech reached \$9.3 billion, as reported by Accenture. Fintech solutions in capital markets include algorithmic trading platforms, robo-advisors, blockchain-based securities issuance and trading, and digital asset exchanges. These technologies aim to enhance trading efficiency, reduce costs, improve transparency, and provide new investment opportunities.

Conclusion

Financial service innovations are transforming the traditional financial industry and creating new opportunities for businesses and consumers. The adoption of new technologies such as blockchain, artificial intelligence, and machine learning is driving significant changes in the sector, making financial services more efficient, transparent, and accessible. The focus is also shifting toward expanding access to financial services to underserved communities, particularly in developing countries, driven by a combination of technological innovation, regulatory reform, and the rise of fintech companies.

However, these innovations also pose social, economic, and regulatory concerns, such as privacy and security risks, financial stability, and regulatory compliance. Effective management of these concerns is crucial to achieving a balance between financial services innovation and the desire for the financial system's safety and stability.

Overall, the finance industry is adapting to changing needs and preferences, driven by shifting demographic patterns and changing consumer expectations. The future of finance will likely continue to be shaped by these megatrends, driving significant change in how financial services are delivered, consumed, and regulated. The financial industry's future is promising as it evolves to meet the demands of a rapidly changing world, and we can expect continued innovation and disruption in the coming years.

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