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## FinTech Products Guide: A legal perspective

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## Introduction

The outbreak of new technology has led to the development of financial services worldwide.

Internet users are becoming more and more aware of the digital transformation happening. They are playing a significant role in backing it up, which led to the use of multiple new technologies meant to ease our daily life.

Following the financial crisis that occurred in 2008, the financial sector became rapidly digitized. Banks developed essential IT infrastructure and ATMs to support their operations and other creative financial products and services. Since stock exchanges and International Correspondent Banking have become more open and used, many regulatory standards have been developed. FinTech innovation primarily occurred during this era, which saw the birth of digital banking and new business models.

Today, a smartphone is an equivalent of a bank in the user's pocket. Through phones, we can send or receive money and also have the ability to buy stocks or other financial instruments.

New company entrepreneurs and innovators have challenged conventional businesses and practices by using alternative financial solutions, optimizing transparency, increasing automation, and democratizing technology. These Elements help transform the FinTech industry and the overall customer experience and improve the financial system.

Moreover, thanks to developments in the artificial intelligence industry (AI), computerized algorithms will be assisting consumers in planning and spending their money, thus removing the human factor and ending the role of typical brokers.

Trades will be made without any human intervention, costs will decrease, and services won't be attached to a particular group of wealthy investors. They will be available to the public.

Mobile payment systems, online banking, machine learning via artificial intelligence, Blockchain and Cryptocurrencies, online trading, peer-to-peer lending, and crowdfunding are only a few examples of today's FinTech developments.

In the world of finance, systems that are based on both blockchain and ledger applications are gaining much traction. Furthermore, the financial industry's advances will make personal financial planning

intelligent and efficient. These developments are expected to affect both regulated and unregulated financial markets, thus providing a stable structure for managing and monitoring financial assets.

The evolution of FinTech was divided into different stages by Arner, Barberis, and Buckley (2015). According to them, we live in the FinTech 3.0 era, which includes both digital technology-enabled financial services firms and conventional banking institutions. Consequently, we can witness the drastic evolution of the financial industry over time, from fundamental providers to banking institutions, and eventually to FinTech, by analyzing the positions and value-added of different stakeholders.

However, the FinTech industry is still in its early stages, and as artificial intelligence and big data are forming the financial environment, further advances are anticipated. Governments and Central Banks can be the catalysts for future developments and regulations.

To sum up, financial regulators from all around the world are under pressure to consider this emerging technology and how it can fit into the existing regulatory framework. [\[1\]](#)

The existing frameworks are essentially based on a banking model that existed before the digital revolution where clients used to balance their checkbook every week and do their banking at their nearest branch. Regulations designed for this kind of banking are clearly not beneficial to developing and promoting modern financial services and innovations. Therefore, the rapid speed of technological change necessitates a re-evaluation of existing regulatory frameworks.

# Defining FinTech



FinTech is defined as the “portmanteau” of financial technology, and it is considered to be “the application of new technological advancements to products and services in the financial industry”[\[2\]](#). However, academic practice and business journals provide a wide variety of interpretations of the definition.

Arner, Barberis, and Buckley addressed the evolution of FinTech via an extensive interpretation of the word. They claimed that emerging financial companies and different parties that participated in the market, regardless of scale, business model, or product portfolio, may be considered FinTech.[\[3\]](#)

It can also be referred as a rival of traditional banking and financial institutions that cover a group of financial services such as “cryptocurrencies and blockchain, new digital advisory and trading systems, AI (artificial intelligence) and machine learning, equity crowdfunding, peer-to-peer (P2P) lending and mobile payment systems”.[\[4\]](#)

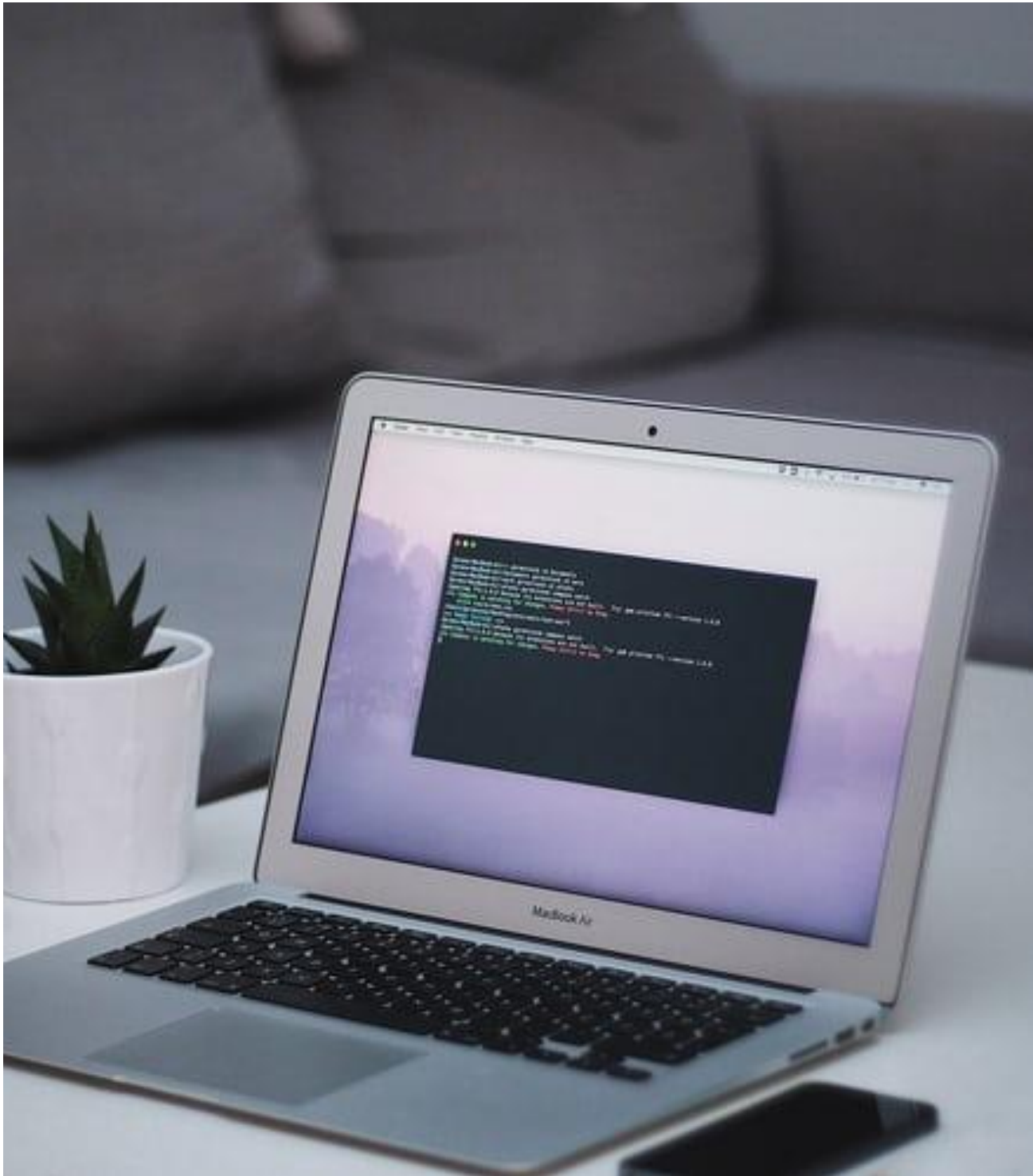
Mcauley defined FinTech as “an economic industry composed of technologically advanced companies to make financial systems more efficient”.[\[5\]](#)

Furthermore, according to Roy Freedman, financial technology is vital for improving systems to model, value, and process financial products such as bonds, stocks, contracts, and money.

He also looks at how financial systems, which are related to commercial systems, are involved in the purchasing and selling of products in various markets at various periods through trading systems and trading technologies including several actions such as buying, selling, borrowing, leasing, auctioning, negotiating, brokering and dealing etc.[\[6\]](#)

FinTech is at the epicenter of the technological transformation happening in our days and is considered a booming industry serving both consumers and businesses. It has broad applications from mobile payment solutions, online banking, investment applications, insurance, and Cryptocurrencies.

# Information about FinTech



In the earlier FinTech version (before 2008), financial institutions paid an incredible amount of money, approximately 197 billion USD, as an IT investment to retain their non-competitive legacy structures.

But today financial intermediaries are not needed anymore and digital assets can be controlled and distributed seamlessly with a press of a button via a sophisticated technological ledger.

According to PwC, Global FinTech Report of 2019, the differences between financial services and technology, and telecom companies have merged to the point where they are all becoming in one basket, and sectors that were considered distinct are colliding.[\[7\]](#)

Finovate[\[8\]](#), the largest event and conference organizers for FinTech, showcases different FinTech companies and categorizes them by their value. Categories include unicorns [\[9\]](#) and semi-unicorns[\[10\]](#)

Meanwhile, according to “Statista.com”, global investments in FinTech firms grew significantly between 2010 and 2019, reaching a total amount of 168 billion US dollars.

In its latest report, CB Insights stated that 66 VC-backed FinTech Unicorns that are worth a combined \$248B are in existence.[\[11\]](#) Banking institutions are continuously adopting the happening innovation, putting money into it, working with or even acquiring FinTech startups. Also the fact that non-financial enterprises are incorporating financial products into their service offerings, is considered as a significant change that will help shape the futures of FinTech.

There are different reasons that led to the emergence of FinTech: (1) financial sector flaws caused by the financial crisis of 2008 and the need for a proper regulatory response to that crisis (2) mistrust by the public in the world of financial services, especially in the United States and the European Union; (3) The demand of different sources of financing for SME's; and (4) retired financial experts searching for work. 5) Technology commoditization and the excessive use of smart mobile phones. [\[13\]](#)

Finally the rapid growth of the FinTech industry showcases its strong dynamics. However, whether this expansion will be sustainable and if FinTech will be regulated enough is unclear.

# FinTech Products



## 1. Mobile Payment Services

Mobile financial services are the first operations in the financial industry to benefit from information and communication technologies. [\[14\]](#) It's important to note that the term "mobile financial services" refers to a broad variety of "financial services, from money transfers and payments to banking-type services (including deposit and borrowing)." [\[15\]](#)

Two types of players include mobile payment services: The existing banking and card payments institutions, and novel entrants such as telecoms operators, big-tech firms and technology innovators.[\[16\]](#) Mobile or digital wallets are used to enable these payment services. A mobile wallet is a transaction-securing device that functions similarly to a modernized version of a conventional payment card. [\[17\]](#)

According to a study from the United Kingdom, "cash payments have decreased from six out of ten to three out of ten in 2018, and are expected to reach their lowest point in 15 years."[\[18\]](#) Following that,

for the first time in 2017, debit card transactions officially exceeded cash payments, with over three million individuals claiming that they pay in cash for their purchases.

One of the most popular financial technology solutions are payment services. Although technological advancement benefits both existing and new entrants, conventional banks offerings and emerging startups' services should be differentiated.

Furthermore, bank-based payment systems, in which a centralized authority verifies operations, don't meet contemporary FinTech objectives.

Big-tech firms have primarily focused on payment services; in reality, that type of services was among the first activities provided by these firms.[\[19\]](#) PayPal and Alipay, are the two main big-tech firms providing assured delivery settlements and e-commerce platforms for buyer reclaims. [\[20\]](#)



## **2. CrowdFunding platforms**

Among other financial technology services, Crowdfunding has become one of the most common. It is described as a technique for collecting funds through soliciting contributions from numerous individuals online. [\[21\]](#)

Previously, the only sources for borrowing money were banks or people, and both creditors required collateral and also used risk-reducing methods. Despite these market barriers, internet fundraising and lending businesses are growing.

Furthermore, Crowdfunding has become a winning scenario for entrepreneurs and investors. Thus enabling entrepreneurs to reach a large audience via special platforms and allowing investors to make profits. [\[22\]](#)

It can be said that the internet's power is important because big data will assist in attracting the interest of vast groups of people. And though the word "crowdfunding" is relatively recent, large-scale fundraising is not.

Donation, grant, equity, and debt crowdfunding are all options for raising funds. For instance, crowdfunding that is based on **donations**, gives participants no direct benefit, so the main amount of money raised is not returned. A successful crowdfunding campaign is evaluated by the quantity of money collected and the number of contributors. [23] Moreover, in **reward-based crowdfunding**, payments are made by offering future products or services. [24]

**Peer to peer lending (P2P lending)** refers to loan-based crowdfunding. In essence, the debt/investment will be fully repaid to the lender and it may be subject to a certain interest rate.

Additionally, investing in **equity-based crowdfunding** means receiving stock in return for money which bears similar liabilities to stock investing; investors will lose money if the company in which they have invested does not make a profit.

This paper will concentrate on peer-to-peer lending scenarios.

On the loan-based and investment-based crowdfunding platforms, there are three primary business models:

- The **conduit model**: promotes investment opportunities while ignoring investment options and determining loan prices,
- **Pricing model**: Determines loan prices but allow investors to choose investments,
- **Discretionary platform**: Determines the pricing, and the investor has no say in selecting lenders. [25]

#### - Examples of Crowdfunding platforms

Kickstarter, which was founded around 2009, is one of the best renowned crowdfunding sites. In May 2019, the platform received more than "\$4 billion in pledges from 16.3 million backers to fund 445,000 projects". [26] Indiegogo is another American crowdfunding site with 15 million monthly visitors. [27]

Another platform in the Middle East is Zoomaal, It is an initiative by four major Arab investors: [Wamda](#) (UAE), [Middle East Venture Partners](#) (MEVP, MENA), [Hivos](#) (Netherlands), [Cairo Angels](#) (Egypt), [N2V](#) (KSA), and [Sawari Ventures](#) (Egypt).

The platform promotes itself to be the ideal location for project funding, with 291 Projects Funded and a total of \$3,348,501 raised by 12879 funders.

The earliest campaigns used to raise money started in the entertainment sector with music and films before things like text messaging came around. Three or four players are involved in the initial crowdfunding concept: the project initiator, the investor, and the crowdfunding site. Accordingly, most websites function as intermediaries between project initiators and investors.



### 3. P2P lending platforms (Crowdfunding based on loans)

People can lend money to individuals or companies through P2P lending networks and receive a return on investment.[\[28\]](#) This kind of lending is like bank loans.

A borrower that cannot get credit via conventional channels will resort to this alternate method of funding. Also, by storing and analyzing consumer data, that platform will handle the credit scoring procedure.

#### - Examples of peer to peer lending platforms

Wall Street executives launched Peerform, a lending platform, in 2010. It provides good lending terms for customers with no prepayment penalty. [\[30\]](#) Another well-known loan site is Upstart. The total consumer loans the latter startup has generated so far are about \$7.8 billion. [\[31\]](#)

Marketplace lending has reached 490 billion US Dollars by 2020. [\[32\]](#) Nevertheless, lending platforms would provide an efficient, transparent and a lower cost alternative to traditional lending because of new dangers arising and mainly fraud risk. [\[33\]](#)

Accordingly, there are many kinds of lending platforms with varying risk profiles. Thus, the first type is the one similar to conventional banking operations and the second type of platforms will not bear any credit risk or even maintain any loan on records.



#### 4. Cryptocurrencies /Digital currency

Cryptocurrency is a popular technology that has recently received much attention on social media networks. However, the first cryptocurrency, Bitcoin, was developed in 2009 by Satoshi Nakamoto, whose identity is still unknown.

Accordingly, Cryptocurrency is a technology based on blockchain, which is an online decentralized and distributed public ledger.[\[34\]](#) “Exchange tokens (cryptocurrencies), security tokens, and utility tokens” are three different types of crypto assets.[\[35\]](#)

Utility tokens are used to access an “existing protocol” on the blockchain. It may be utilized inside their ecosystems. While security tokens are designed specifically for direct investment and function as “on-chain representations of real-world securities or tokens that are on-chain instruments serving a similar purpose for blockchain projects and/or digital assets”.[\[36\]](#)

However, the emphasis of this guide will be on cryptocurrencies.

Cryptocurrencies operate through an automated peer-to-peer computer network in which all transactions are openly recorded. The transaction's timing, account number, and amount are all secured in a distributed process.

A centralized authority is accountable for guaranteeing that no duplicate spending happens, which means that they are responsible for maintaining the safety and protection of transactions. Moreover, anyone who wishes to participate in validating cryptocurrency is referred to as a “miner”[\[37\]](#). Accordingly, users have two keys: a public key that everyone may access and a private key that only the holder knows.

Every consumer, in general, “has a public key and a private key: the public key can be accessed by anyone, ensuring transparency; the private key, on the other hand, is a private code that the holder can only know.” [\[38\]](#)

The payor and the payee, both have the two mentioned keys. First of all, the payee secures all transaction details in the payer's public key and then transmits the information to the payer, which views

it using his private key. Once the parties agree on a transaction, it is forwarded to the minors for confirmation.[\[39\]](#)

There is a lot of value in talking about the legal status of crypto currencies, which has become a contentious topic among academics.[\[40\]](#) Accordingly, they can be classified as currency, commodity, commodity money, or security, among other things. [\[41\]](#)

Each country has a different approach regarding crypto currenciesb, but they are mostly classified as “private currency.”



## 5. Blockchain Technology & Smart Contracts

Blockchain is a method of storing information which cannot be changed, hacked, or cheated. It is “a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain.

Each block in the chain contains several transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant’s ledger.”[\[42\]](#)

While most of the attention was focused on cryptocurrency, smart contracts are also attributed to blockchain technology. They are real contracts that have been coded. [\[43\]](#)

A contract’s execution does not necessitate human intervention: the contract’s terms would be carried out by the computer system itself. [\[44\]](#)



- **Blockchain Technology incorporating Smart Contracts**

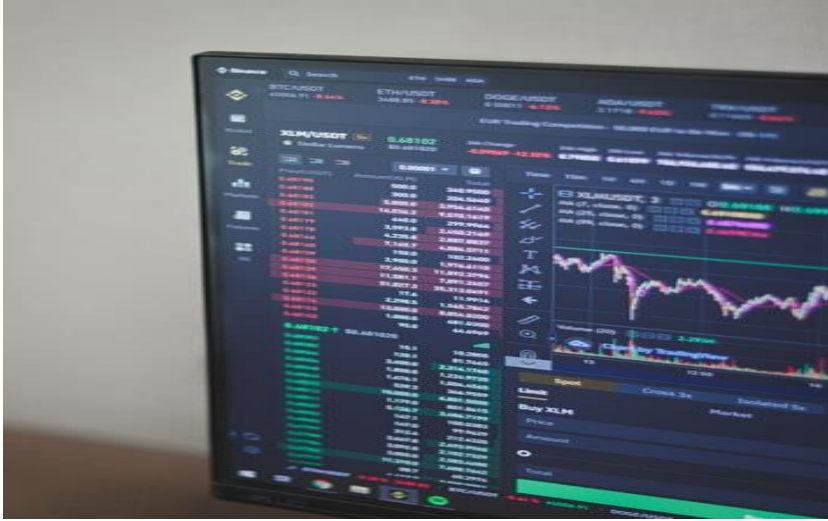
Ethereum, an open-source, public blockchain, is an example of a popular platform that effectively implements smart contracts.<sup>[45]</sup> However, this innovation would modernize Contracts Laws around the world and give individuals access to new contractual solutions that are more efficient.

In a nutshell, a contract is drafted based on the parties' agreement, signed “cryptographically,” and uploaded to the blockchain. Finally, the computer will automatically execute the contract when the contract's coding requirements are met. <sup>[46]</sup>

An example of how smart contracts and cryptocurrencies may be used in practice is when two parties have decided to rent an apartment and the contract details are digitally implemented. Payment will be made in virtual money via the blockchain and after receiving payment, the tenant will provide a “digital key” within a limited time to the renter in order to access the apartment.

- **DeFi**

Decentralized Finance, abbreviated as 'DeFi' is an attempt to duplicate certain aspects of the existing financial system in an open, decentralized, permissionless, and autonomous way using blockchains. As with any application based on distributed ledger technology (DLT), DeFi may possibly deliver efficiencies through automation and decentralization enabled by Blockchains and smart contracts.



## 6. Quantitative investing via AI and Robo-advisors:

Investment products and services have also changed as a result of new technologies.

Robo-advisors are digital systems that use information technology to help serve clientele by providing advice based on artificial intelligence which incorporates dynamic and smart customer support features.

Moreover, Human financial advisors are on the verge of being obsolete. For instance, Robo advisory has reached in 2019 more than one and a half trillion USD in assets, with that figure being projected to double in 2020. [\[47\]](#)

Finally, investor profiling has traditionally required in-person interviews and bilateral relationships to determine customers; however, these have been replaced by online questionnaires, and customer investment schemes where algorithms have established risk limits. [\[48\]](#)

## References

- [1] Thomas Philippon, New York University, The FinTech Opportunity
- [2] Estevez, E. (2020, August 28). *Financial Technology FintechDefinition*. [www.investopedia.com/terms/f/fintech.asp](http://www.investopedia.com/terms/f/fintech.asp)
- [3] Douglas Arner; János Barberis; Ross Buckley, 2016, the Evolution of Fintech : a New Post-crisis Paradigm?
- [4] Thomas Philippon, New York University, The FinTech Opportunity
- [5] McAuley, D. (2014). What is FinTech . Retrieved from Wharton-FinTech : <https://medium.com/whartonFinTech/what-is-FinTech-77d3d5a3e677>.
- [6] Freedman, R. (2006). Introduction to Financial Technology. In R. Freedman, 1st (Ed.), Introduction to Financial Technology, Academic Press.
- [7] <https://www.pwc.com/gx/en/industries/financial-services/FinTech-survey.html>
- [8] (n.d.). *Who We Are*. Finovate. [finovate.com/who-we-are/](http://finovate.com/who-we-are/)
- [9] Companies valued at one billion dollars or more.
- [10] FinTech companies which are valued at more than 500 million dollars.
- [11] [https://www.cbinsights.com/research/report/FinTech-trends-q2-2020/The State of FinTech Q2'20 Report: Investment & Sector Trends to Watch](https://www.cbinsights.com/research/report/FinTech-trends-q2-2020/The-State-of-FinTech-Q2'20-Report-Investment-&Sector-Trends-to-Watch).
- [12] Deloitte, “FinTech by the numbers Incumbents, startups, investors adapt to maturing ecosystem” <https://www2.deloitte.com/content/dam/Deloitte/tr/Documents/financial-services/dcfs-FinTech-by-the-numbers.pdf>
- [13] Arner, Barberis & Buckley, *supra* note 2
- [14] Julia S. Cheney, “An Examination Of Mobile Banking And Mobile Payments: Building Adoption As Experience Goods?” FRB of Philadelphia - Payment Cards Center Discussion Paper No. 08-07-2008 .
- [15] Ibid
- [16] N. Delic and A. Vukasinovic, “Mobile payment solution - symbiosis between banks, application service providers and mobile network operators,” 3rd International Conference on Information Technology: New Generation.
- [17] Yonghee Kim and others, “The Adoption of Mobile Payment Services for “FinTech ”, International Journal of Applied Engineering Research Vol. 11, No 2.
- [18] UK Payment Markets Summary, <https://www.ukfinance.org.uk/system/files/Summary-UK-Payment-Markets-2018.pdf>
- [19] Peter Goldfinch, “A global guide to FinTech and future payment trends” (Routledge, 2019)
- [20] BIS, “Big tech in finance: Opportunities and Risks BIS Annual Economic Report 2019” (2019) <https://www.bis.org/publ/arpdf/ar2019e3.pdf>

- [21] FCA, What Is Crowdfunding? <https://www.ukcfa.org.uk/what-is-crowdfunding/>
- [22] Kevin Berg Grell and Others, "Crowdfunding The Corporate Era" ( Elliot and Thompson 2015)
- [23] Andrea S. Funk, Crowdfunding in China A New Institutional Economics Approach.( 2th edt. Springer 2019)
- [24] ASBA, "An Overview of FinTech s: Their Benefits and Risks Association of Supervisors of Banks of the Americas 2017" <http://www.asbasupervision.com/es/bibl/i-publicaciones-asba/i-2-otros-reportes/1603-orep24-1/file>
- [25] " FCA, Loan-based ('peer-to-peer') and investment-based crowdfunding platforms: Feedback on our post-implementation review and proposed changes to the regulatory framework (CP No.18/20, 2018)"
- [26] (2019, July 30). PledgeCamp vs Kickstarter vs Indiegogo. Medium. [medium.com/@thecryptohype/pledgecamp-vs-kickstarter-vs-indiegogo-cbc9223ac6bb](https://medium.com/@thecryptohype/pledgecamp-vs-kickstarter-vs-indiegogo-cbc9223ac6bb)
- [27] IBID
- [28] Alex Brill, 'Peer-to-Peer Lending: Innovative Access to Credit and The Consequences Of Dodd-Frank' (2010).
- [29] "Pavlo Rubanov and others, 2019, 'analysis of development of alternative finance models depending on the regional affiliation of countries', Business & Economic Horizons."
- [30] (n.d.). *About Us*. Peerform . [www.peerform.com/about-us/](http://www.peerform.com/about-us/)
- [31] (n.d.). Upstart. [www.upstart.com/about/](http://www.upstart.com/about/)
- [32] Morgan Stanley, "Can P2P Lending Reinvent Banking?", [www.morganstanley.com](http://www.morganstanley.com), 2015
- [33] Fabio Caldieraro and others, "Strategic Information Transmission in Peer-to-Peer Lending Markets" (2018)
- [34] Reiff, N. (2014, June 13). *Blockchain Explained*. [www.investopedia.com/terms/b/blockchain.asp](http://www.investopedia.com/terms/b/blockchain.asp)
- [35] Chris Burniske and Jack Tatar, "Cryptoassets : the innovative investor's guide to bitcoin and beyond" (McGraw-Hill Education 2018)
- [36] (2020, February 11). *The Different Types of Cryptocurrency Tokens Explained*. Maker Blog. [blog.makerdao.com/the-different-types-of-cryptocurrency-tokens-explained/](http://blog.makerdao.com/the-different-types-of-cryptocurrency-tokens-explained/)
- [37] Rosario Girasa, "Regulation of Cryptocurrencies and blockchain technologies National and International Perspectives", ( Palgrave Macmillan, 2018) pg. 36
- [38] Paul Vigna and Michael J. Casey, "Cryptocurrency : the future of money" (Vintage, 2016)
- [39] Mark Andreessen, Why Bitcoin Matters, N.Y. TIMES <http://dealbook.nytimes.com/2014/01/21/why-bitcoin-matters>.
- [40] David Lee Kuo Chuen Lee, Linda Low, "Inclusive FinTech: blockchain, cryptocurrency and ICO" (World Scientific Publishing Co. 2018)
- [41] Gareth Pyburn, "Bitcoin Legal: Taxonomy of Regulatory Reactions, APAC's Outlook and Potential for BTC-Linked Derivatives", Lexology ( 2014)

blockchain? [www.euromoney.com/learning/blockchain-explained/what-is-blockchain](http://www.euromoney.com/learning/blockchain-explained/what-is-blockchain)

[43] Quinn DuPont, “Cryptocurrencies and Blockchains”. (Medford, MA: Polity, 2019) pg.173

[44] Andy Robinson and Tom Hingley, 'Smart Contracts: The Next Frontier?' (Oxford Law Faculty, 2016)

[45] (2021, July 8). *Introduction to smart contracts*. Ethereum.Org.  
[ethereum.org/en/developers/docs/smart-contracts/](https://ethereum.org/en/developers/docs/smart-contracts/)

[46] Fenwick, Mark and Vermeulen, Erik P.M., A Primer on Blockchain, Smart Contracts & Crypto-Assets Lex Research Topics in Corporate Law & Economics Working Paper No. 2019-3.

[47] KPMG, “Robo advising Catching up and getting ahead” <https://home.kpmg/content/dam/kpmg/pdf/2016/07/Robo-Advising-Catching-Up-And-Getting-Ahead.pdf>

[48] Dominik Jung and others, “Robo-Advisory” (2018) *Business & Information Systems Engineering* 2018, pge 81–86