



BLOCKCHAIN: A NEW WAY TO BUILD TRUST IN FINANCIAL RELATIONS

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ABSTRACT

Blockchain is currently an emerging technology in the world. Blockchain makes processes more decentralized, transparent, autonomous, and secure. Blockchain provides a system of trust to people without the need to involve an intermediary in the transaction. This would allow to improve the trust in financial relations. The aim of the paper is to investigate Blockchain as potential alternative technology to build trust in financial relations.

KEYWORDS : Blockchain, Digital Innovation, Financial Relations, Trust.

INTRODUCTION

A new digital technology is changing the business models and increasingly becoming a crucial factor around the world. Blockchain technology is generating significant interest across a wide range of industries in the world.

Blockchain is a type of distributed ledger that is composed of a chain of cryptographically linked 'blocks' containing batched transactions; generally broad casts all data to all participants in the network. The mechanisms of operation of the Blockchain are such as to constitute a reassuring reaction to the lack of trust, transparency and security in any kind of choices and transactions.

The purpose of the present paper is to think about a new role of technology through the Blockchain in the generation of self-reinforcing trust of financial relations. The role of Blockchain is to give to the public in reliable and convincing manner the real options embedded in the technology growth opportunities.

WHAT IS BLOCKCHAIN

Over the last decade, technological innovation has become increasingly important, leading to the development of a new technology capable of redesigning the process of trade in the economic and financial system. This technology is called Blockchain.

Blockchain is a register distributed among the various nodes of the network structured as a "chain of blocks" containing transactions. The blocks are connected using encryption that binds them in a virtually non-editable way (Seebacher and Schüritz, 2017).

Its main function is to keep track of all the transactions that take place over a certain period of time. So Blockchain is able to guarantee everyone the ability to check and have complete transparency in any type of transaction. It is a "distributed database" among its members and it has significant implications also in terms of security.

Blockchain can be public or private. On a public Blockchain anyone can read transactions, send transactions, and participate on the consensus processes. On a private Blockchain the permission for writing or reading can be public or restricted depending on the needs of the network. These properties can be configured for each participant. Alongside these two categories, there is Consortium Blockchain that sets the consensus process according to certain amount of a pre-selected set of nodes (Pilkington, 2016).

Blockchain is decentralized, transparent, autonomous, and secure. Blockchain is decentralized because it can run entirely through all the nodes of the network. Several nodes are independent and every node have the same copy of the ledger. Blockchain is transparent because all the transactions are public and the network is open to everyone. This last condition could be slightly different depending on the nature of the network. Blockchain is autonomous because each node has not need of a central organization that coordinates the transactions. The network has protocols that dictate the rules of all transactions on the network. The participants can independently verify that the content of the database at a specific moment in time is consistent with what every other participant also sees. This ensures that any improper alteration of the data will be immediately detected and rejected by all participants. Blockchain network is secured thanks to cryptographic algorithms that are set by the members of the network and the consensus set among all the participants.

BLOCKCHAIN EVOLUTION

Since 2009, Blockchain has undergone a profound evolution with the exchange of the first Bitcoin. Bitcoin has experienced a progressive growth of interest, even if it initially was not considered by the banks and the media. A few years later, other platforms were born based on the same principles: in 2012 Ripple, platform for interbank payments; in 2015 Ropex for exchanges in the financial sector. With the Blockchain a lot of experimentations have arisen, the capitalization of Bitcoin and other cryptocurrencies has increased dramatically.

The observatory "Blockchain & Distributed Ledger" of the Politecnico di Milano shows that the Blockchain is expanding; today, there are 331 projects internationally, of which 172 are in the testing or operational phase. In 2017, the trials initiated or undergoing "Proof of concept" grew by 73% compared to the previous year. The vast majority of projects, equal to 59%, has been developed in the financial sector, but from 2017 there is a progressive expansion of the application areas that also affect other sectors (see Figure 1).

The Blockchain is mainly used for processes in payment systems (94 projects), for tracking and supply chain (67), for data and document management (64) and for the capital market (51).

After the initial mistrust linked to the disintermediation capacity of cryptocurrencies, governments and central banks in the world began to study the Blockchain to make currencies and payment systems more efficient. Over 90 central banks are engaged in

Blockchain discussion globally, over 2500 patents are filed over the last three years and 80% of the banks predicted to initiate Blockchain.

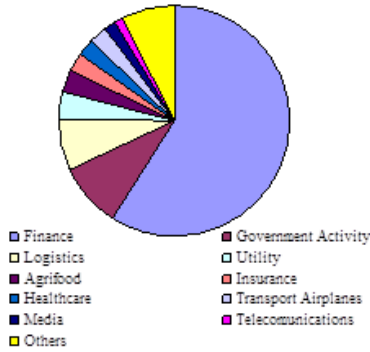


Figure 1 Sectors of the Blockchain

The orientation in many countries is, on the one hand, to exploit the Blockchain in every sector, on the other hand, to intervene with laws, in order to provide a sufficiently certain legal framework, aimed at giving strength to the Blockchain architecture. Some US States (Arizona, Colorado, Illinois) have initiated regulations concerning cryptocurrencies and Blockchain.

Also European Union countries have declared themselves wishing to test the Blockchain (European Parliament, 2017).

22 European Countries signed a Declaration creating the European Blockchain Partnership (EBP) and cooperate in the establishment of a European Blockchain Services Infrastructure that will support the delivery of cross-border digital public services, with the highest standards of security and privacy. Today, 5 more Member States have joined the Partnership bringing the total number of signatories to 27.

BLOCKCHAIN IN FINANCIAL RELATIONS

Over the past few decades, events have occurred worldwide that have led to a loss of trust in financial intermediation (Onado, 2017). In the financial system, always we have either relied on formal trust that functions by introducing intermediaries through which legal recourse can be sought in the event of mis behaviour. However, the current trend of the financial system shows how it is currently facing multiple pressures, and has entered a new state of change.

Indeed, data extrapolated from Financial Access Survey in 2018 regarding the traditional banking activity of the 27 European countries that created EBP show a general decline from 2009 to 2017 of the main indicators of the degree of development of banking activity. In particular, the outstanding deposits as a proportion of the country's GDP decreased in 6 countries, while in the remaining countries the growth was slight. The outstanding loans as proportion of the country's GDP fell in 18 countries (on 27). Also the percentage variation from 2009 to 2017 of the number of ATM per 100,000 adults, branches per 100,000 adults and institutions of commercial banks shows a decline in traditional banking activity in most of the countries. In particular, Norway shows the higher reduction of ATM (-37%) followed by Cyprus (-31%), Finland shows the higher reduction of branches (-90%) followed by Denmark (-55%), and Netherlands shows the higher reduction of institutions (72%) followed by Finland (-70%) (see Table 1).

Table 1 Banking activity (% variation between 2009 and 2017)

	Deposit	Loan	ATM	Branches	Institutions
Austria	-10%	-27%	3%	2%	-24%
Belgium	14%	7%	ND	ND	-15%
Bulgaria	41%	-24%	9%	-45%	-10%
Cyprus	29%	17%	-31%	-16%	-19%
Czech Republic	17%	14%	40%	-6%	15%

Denmark	-1%	-39%	-23%	-55%	-47%
Estonia	12%	-37%	-23%	-50%	-6%
Finland	-50%	-60%	-13%	-90%	-70%
France	34%	5%	ND	-14%	-15%
Germany	18%	-9%	ND	-19%	-5%
Greece	-24%	33%	-23%	-46%	-42%
Ireland	-39%	-74%	-5%	-39%	-29%
Italy	21%	-14%	-14%	-25%	-33%
Latvia	19%	-57%	-14%	-54%	-22%
Lithuania	11%	-38%	-19%	-54%	-29%
Luxembourg	-12%	13%	8%	-22%	-5%
Malta	0%	-36%	13%	-19%	4%
Netherlands	10%	-5%	-29%	-53%	-72%
Norway	12%	-6%	-37%	-50%	23%
Poland	26%	9%	ND	-11%	-10%
Portugal	9%	-34%	-13%	-54%	-25%
Romania	11%	-29%	18%	-27%	-13%
Slovak Republic	14%	37%	21%	2%	0%
Slovenia	7%	-49%	-8%	-26%	-32%
Spain	1%	-41%	-26%	-41%	-28%
Sweden	27%	2%	-25%	-30%	19%
UK	-11%	-23%	6%	ND	-7%

Against this fall in traditional banking activity, an increase in the use of technology in financial intermediation processes is observed. According to the 2017 Global Findex survey, the use of digital payments is on the rise. Between 2014 and 2017, the percentage of who reported making or receiving digital payment rose in almost all countries. On the contrary, the share of adults not making or receiving digital payments decreased in all countries (see Table 2).

Table 2 Use of digital payments

	Made or received digital payments		Did not make or receive digital payments	
	2014	2017	2014	2017
Austria	92%	96%	4%	2%
Belgium	96%	97%	3%	2%
Bulgaria	48%	65%	15%	7%
Cyprus	67%	80%	24%	9%
Czech Republic	78%	80%	4%	1%
Denmark	99%	99%	1%	1%
Estonia	95%	97%	2%	1%
Finland	98%	98%	2%	1%
France	92%	92%	5%	2%
Germany	96%	98%	3%	1%
Greece	39%	74%	49%	12%
Ireland	87%	94%	7%	2%
Italy	73%	90%	14%	4%
Latvia	84%	91%	6%	2%
Lithuania	66%	78%	12%	5%
Luxembourg	93%	98%	4%	0%
Malta	74%	89%	22%	9%
Netherlands	98%	98%	1%	2%
Norway	98%	99%	2%	1%
Poland	63%	82%	15%	5%
Portugal	73%	86%	14%	6%
Romania	41%	47%	20%	11%
Slovak Republic	72%	82%	5%	3%
Slovenia	86%	96%	11%	2%
Spain	93%	90%	4%	3%
Sweden	99%	98%	1%	1%
UK	97%	96%	2%	1%

In addition, data from the World Economic Forum (2015), that conducted a survey asking technology experts what the technological changes are changing traditional society, show the speed with which the technologies are being imposed. According to these data in 2027 there will be the total awareness and diffusion on a global scale of the Blockchain.

CONCLUSIONS

During the last few years, financial sector has experienced a change. People are expecting more secure transactions, and more trust in financial assets.

The characteristics of Blockchain are really interesting in financial sector since transparency, security, and trust in transactions are the foundations of the system.

Banks have lot to be gained improving the mechanisms used for the transactions. In traditional systems, a central authority is in charge on connecting the nodes and establishes rules, and large amount of employees are needed to monitor the transactions.

Today, big majority of big banks have started using Blockchain. This because Blockchain has transactions that are decentralized, public and unchangeable. Its merit is that provides a system of trust to people without the need to involve an intermediary in the transaction. Then, this emerging technology can take on an almost social value, allowing the development of financial relationships that can guarantee everyone the opportunity to verify, control and have complete transparency and trust. In fact, Blockchain makes actions within the system independently verifiable by each participant, and introduces and improves accountability. In this way, it can become the new normal in the world of financial relations.

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