

# LUISS



Cattedra

---

RELATORE

---

CORRELATORE

---

CANDIDATO

Anno Accademico

## **INTRODUCTION**

Technological progress has been the promoter of numerous upheavals in recent decades, the introduction of smart devices, social-networks and virtual assistants and augmented reality are just few of the numerous innovations.

The advent of internet has revolutionized commerce. An exponential growth in online sales has been a major force in the evolution and transformation of the payment systems starting from the launch of Pay-pal, the first reliable digital payment and money transfer system, in 1999 to the introduction of mobile payment systems pioneered by Apple Pay, launched by Apple Inc. in 2014 with the aim of replacing the magnetic stripe card payment process.

The introduction of highly innovative techniques for payment transactions and the transmission of a currency represented one of the most salient opportunities offered by the information revolution and led to the creation of virtual currencies, also known as cryptocurrencies.

In this matter, the social-media giant, Facebook announced the launch a new global cryptocurrency called Libra that could free money from its "government chains" and liberalize monetary transactions around the world.

Libra coin could represent the most recent and innovative result of technological evolution of payment transactions. However, this project has been at the center of some serious criticisms and rejection, right from its announcement, forcing Facebook to postpone the launch until now.

### **Aim of the study**

This thesis analyze whether Libra can reach the market potential for which it has been conceived, what are its main benefits and downsides, what are the consequences for national monetary policies, financial stability and

regulation and most of all what are the risks of a private global currency for the user's privacy and how they will be protected.

The study starts with a general overview of cryptocurrencies and particularly of the Bitcoin, its history, the way it works and its current diffusion and use. To follow, Libra will be introduced presenting the key elements of its project, architecture, the Libra Blockchain, its way of executing transactions, the Libra governance along with its market potential and applications.

The aim of this study is to assess whether Libra, if it will ever be launched, would be worth and to what extent and in which way users, both companies and individuals, would be more prone to spend it. It will also be evaluated the users' level of awareness about the risks related to the use of Facebook and Libra relating to fraud and money laundering.

The elements acquired could be included as part of the concerns that have so far kept Facebook from launching Libra and could eventually lead this project to a dead end.

Finally, it will be assessed the level of awareness of Facebook's disclosure scandals and of its privacy issues by its current users as they could have repercussions on the possible use of Libra, according to their propension to face the associated risks of violations or data abuse.

Secondary end points of this study have been to estimate:

- how the use of social media is widespread with particular attention to Facebook by both companies and customers
- the extent of Bitcoin usage by companies and individuals.

## INDEX

<b>Introduction</b>	<b>1</b>
Aim of the Thesis	1
<b>Chapter 1 – The world of cryptocurrencies</b>	<b>5</b>
1.1 What is a cryptocurrency?	5
1.2 Bitcoin	6
Foundations of the Bitcoin .....	8
How does the Bitcoin work? .....	9
1.3 Libra	11
What is Libra? .....	12
How Libra value will be established? .....	13
Who will administer Libra? .....	14
How does Libra work and how to buy it? .....	15
Libra Blockchain .....	15
Libra’s differences from Bitcoin and other cryptocurrencies .....	16
The impact of Libra on Bitcoin and other cryptocurrencies .....	19
The market potential of Libra .....	20
Issues with Libra .....	22
<b>Chapter 2 - Materials and Methods</b>	<b>24</b>
How the research has been conducted .....	24
Presentation of the questionnaire addressed the companies .....	24
Presentation of questionnaire addressed to the individuals .....	26
Questionnaire templates .....	29
<b>Chapter 3 – Results</b>	<b>42</b>
Data obtained from questionnaires submitted to the companies .....	42

Data obtained from questionnaires submitted to the individuals .....	48
<b>Chapter 4 – Discussion</b>	<b>54</b>
4.1 Analysis of the data and inherent implications	54
About the companies .....	54
About the individuals .....	56
4.2 Limits of the study	59
4.3 Concluding remarks: Is Libra a “dead racehorse” for Facebook?	60
<b>References</b>	<b>65</b>
<b>Abstract</b>	<b>68</b>

## **CHAPTER I - THE WORLD OF CRYPTOCURRENCIES**

Libra Association's announcement of the issue of a new global currency has led experts to debate over the relative advantages and risks. According to Facebook, Libra aims to redesign the concept surrounding money by freeing it from exclusive governmental influence and cheapening monetary transactions around the world.

The most skeptical argue that a similar private currency exposes both individuals and the whole financial system to a large amount of risks.

### **1.1 What is a cryptocurrency?**

The initial concept of a cryptocurrency had been introduced by computer engineer Wei Dai back in 1998 discussing the idea of a digital currency, which could be sent along a group of untraceable digital pseudonyms. A key purpose of this new currency was to avoid the inefficiencies characterizing the traditional financial system, such as the need metal to create coins and the amount of effort required to create transactions.

Cryptocurrencies, as one of the main technological and financial trends emerged in the past decade, have led, since their introduction, the World to reinvent the concept of money and, even if the concept itself now may present some limitations and privacy issues, it has contributed to open the door for innovation in an alternative financial system.

Cryptocurrency is the general name referring to all encrypted decentralized digital currencies using cryptography to create coins and secure transactions.

It is a digital currency/asset and works as a medium of exchange, which uses highly complex cryptography to record the transactions of coins and to control the addition of new units. It is also subject to validation in the transactions of the assets. Cryptocurrencies system fulcrum is the distributed ledger technology, called blockchain, which serves as a database for financial transactions recordings.

Those virtual ledgers are typically encrypted but open source as they are databases shared across a network of computers, subject to constant check by its own nodes to ensure compatibility.

Consequently, governments do not have any involvement in cryptocurrencies nor they back them with corresponding funds or assets. This decentralized configuration is a key aspect, delineating cryptocurrencies system's peculiar "freedom" and moving away from the financial system where ordinary banks are centralized and the flow of money is controlled by governments.

As previously said, Bitcoin has been one of the first cryptocurrencies to be developed and today is the most widespread alternative monetary system accepted as a means of payment by retailers all around the world including highly renowned brands such as Apple, Expedia or WordPress.

Many new cryptos have joined the cryptocurrencies market since then, including EOS (2017), Tron (2017) and Cardano (2017). The actual market counts over 2000 operative digital currencies and numbers are still rising.

This constantly growing popularity of cryptocurrency translates in the fact that, even though they are subject to high volatility in terms of price due to the absence of corresponding actual funds, market (trade) values are growing every year by a significant rate.

## **1.2 Bitcoin**

Descendent of Wei Dai's "B-money" and introduced to the public in 2009, Bitcoin was invented with the intent to remove bank intermediation from money transactions whether they are commercial or just money transfers.

Allowing transactions that avoid the intermediations of banks, not only can save users from paying any fee but also grant their privacy and freedom as users do not have to give personal information in the process; information that Banks requires to submit and that are stored in digital archives with the risk of exposing them hacker attacks. Lastly, the lack of a single authority

behind Bitcoin represents a new level of freedom that banks will never achieve.

Bitcoin, the first cryptocurrency, is a digital form of money analogous to ordinary currencies except it is completely virtual and with the limitation that, right now, not many shops accept Bitcoin yet and some countries have even banned it.

Bitcoin has been also the first payment system based on the concept of blockchain technology, peer to peer and license-free exchange of data in which anyone with the proper hardware dispositions can promote himself in charge of validating and recording user's transactions.

Since then, Bitcoin continued to grow and to gain popularity, increasing its initial value tenfold, to a point where adoption has become more present. The amount of Bitcoin ATMs is constantly rising, increasing Bitcoins functionality, more shops have started accepting cryptocurrencies as a method of payment and crypto assets are being used as a form of fundraising. Its simplicity of operation is a key aspect of its potential as Bitcoin transactions do not involve an intermediate. Bitcoins are developed to be a reward for Mining, a process to obtain new coins that is at the basis of the decentralized security of the blockchain. This technology secures the bitcoin system and enable it to function properly without a central authority. Despite what it may seem, the Mining process does not involve the creation of new coins at all.

Miners role in the system is to validate the new transactions and to store them by recording on the public ledger and for those tasks they receive Bitcoins as a mere reward issued under the form of new bitcoins or transaction fees.

The task involves the solution of highly complex mathematical problem based on a cryptographic hash algorithm. The solution is the proof-of-work that a "block" part of the chain has been solved and the transactions



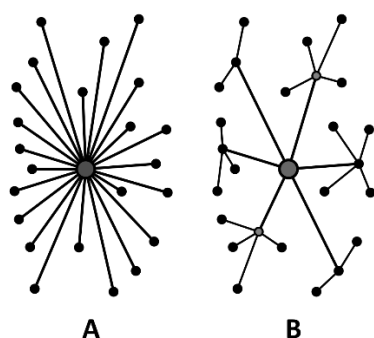
contained in it are considered confirmed, from that point, the bitcoin object of the transactions can be spent.

## Foundations of Bitcoin

Bitcoin is founded on the pillars: Cryptography, Supply and Demand and Decentralized Networks.

- Decentralized networks

**Figure 1.1: Centralized and decentralized structure**



Centralized networks (Figure 1.1 A) are the ones controlled by a central authority who makes decisions on behalf of the rest of the network. Centralized network architecture is typically built around a single server that handles all connection request from the computers. Large-scale services such as social media websites like Facebook, instant messaging platforms like WhatsApp, and search engines like Google use centralized servers. Centralized networks can achieve greater efficiency in terms of speed of connection than decentralized networks but if the central server goes down, computers connected to the network are unable to communicate.

On the other end, Decentralized networks do not rely on a single central server but distribute data and processing workloads through the

computers participating to the network. The larger the number of participating computers the more efficient the network will be.

Main advantage of decentralized network is the higher reliability against faults as in case the central machine goes down, the network continues to function thanks to the other participants to the network. Peer-to-peer transfer platforms are a clear example of decentralized networks

- Cryptography

While the origins of cryptography could be traced back to 4000 years ago in Egypt, one of the most notorious applications was during WWII for protecting radio messages by using codes that nobody but the owners of the decryption key could read.

Bitcoin uses cryptography in a similar way but instead of protecting radio messages, Bitcoin uses cryptography to secure transaction data through its “blockchain” as explained later in this paragraph.

- Supply and Demand:

Supply and Demand are the rulers of Bitcoins’ value, Bitcoin, being limited in its supply to 21 million units, follows the very economic principle as diamonds and Oil do; when something is limited, it has more value and the more the people willing to acquire it, the higher its price.

### **How does the Bitcoin work?**

Each Bitcoin could be considered like a computer file safely stored in a 'digital wallet', a software accessible through a computer, tablet or smartphone.

Users can send Bitcoins to other users' digital wallets as would be done with cash in physical transactions with the only difference that every single Bitcoin transaction is recorded in a public list called blockchain.

Tracking the history of Bitcoins allows the system to avoid users spending coins they do not own, making copies or hiding transactions.

Concerning the ways a person can obtain a Bitcoin, the options are three: to buy Bitcoins in exchange of other currencies, to sell a product or service, giving the counterpart the possibility to pay with Bitcoins and finally, to "mine" them, the process that leads to the creation of brand new Bitcoins

Mining, as introduced, is the process that allows the Bitcoin system to work as people can make their computer process transactions for everybody becoming part of the blockchain.

Computers are made to solve incredibly difficult problems whose success is occasionally rewarded with a Bitcoin for its owner.

Despite mining computers are becoming more and more powerful, the quantity of mineable Bitcoins decreases progressively, and with it, the possibility of installing profitable mining plants.

Bitcoins' value, like many other things, resides in the willingness of some people to exchange them for goods, services or even cash.

What attracts of Bitcoins is their freedom, not being controlled by governments nor banks, and the possibility of being spent in an anonymous way. As a matter of fact, even though all transactions are recorded, the related account numbers are not necessarily associated to the owner's generalities.

The biggest concern regarding Bitcoins is whether they are safe or not.

As each bitcoin transaction is publicly recorded, it becomes extremely difficult to clone them or create fake ones. Nevertheless, it is still possible to "lose" a Bitcoin wallet or delete Bitcoins losing them forever.

Notorious are also some cases of Bitcoin thefts from websites claiming to let users store their Bitcoins remotely.

A common reason behind the general skepticism hovering over Bitcoins is that their value reached frequent ups and downs over the years since their introduction back in 2009; most of the people still don't consider a safe option turning 'real' money into Bitcoins.

Returning on the concept of the quantity cap planed for Bitcoins, it will result in the progressive decrease in amount of coins created (every 210,000 blocks). The number will keep decreasing until the time mining a block will not lead to a reward but only the right for the miner to keep the change' on the block's transactions for himself as no more bitcoin will be left. Calculous have forecasted that this will happen in 2140. By then there will be 21 million bitcoins in circulation. From that moment no more bitcoin will be issued.

Despite the fact that initially, Bitcoin didn't attract much attention, it didn't took much to became a form of investment, also as a result of the way it was perceived and handled by governments as they were scared for security reasons, and for the general skepticism towards the internet world. Later, the value of Bitcoin gradually started to increase leading people to invested in it reaching its peak exchange price of 8100\$ in November 2017.

Thanks to Bitcoin embracing the role of forerunner, cryptocurrencies gained a lot of popularity in a short period despite they had to face a general skepticism and several privacy issues. Facebook's Libra represents the clearest example for an upcoming Cryptocurrency.

### **1.3 Libra**

The increasing popularity of cryptocurrencies has led Facebook, the company that revolutionized the way people communicate and interact to develop its flag cryptocurrency which should have been launched in 2020 in

conjunction with a group of other large companies backing it, known as the Libra Association.

The initial stage of the development of Libra dates back in 2017, by the efforts of a Facebook employee named Morgan Beller. In the first period, Morgan Beller was the sole person in charge of working on this Facebook blockchain.

Facebook however eventually decided to pour more and more efforts into this project until two years after, the team working on the cryptocurrency counts several dozens of employees. On June 18th of 2019, Facebook and the Libra Association members officially made public that they were working on the development of a currency. As reported in Libra whitepaper, this currency would be "built on a secure and stable open-source blockchain [Libra Blockchain], backed by a reserve of real assets [Libra Reserve], and governed by an independent association [Libra Association]", it is conceived to "bring together the attributes of the world's best currencies: stability, low inflation, wide global acceptance, and fungibility."

Moreover, as a current money, it should not only serve as a means of payment but also as a store of value and a unit of account.

### **What is Libra?**

Facebook's digital currency, Libra, as it was presented, will be a cross between Bitcoin and online payments systems like PayPal.

To date it should have been the biggest corporate endorsement of cryptocurrencies. Libra would have been a new digital currency having, at least theoretically, the noble intent to free users from the constraints of bank accounts and credit cards, proposing "a simple global currency and financial infrastructure that empowers billions of people". Libra's white paper states that the currency would be mainly aimed to people without bank accounts. Since the day it will be launched, it will be immediately available on

WhatsApp and Facebook Messenger, and through several other Libra partners exploiting the considerable popularity and diffusion of these media as an initial springboard.

Libra was meant to be released in several phases, starting as soon as 2020 but only with the prerogative of its total approval by the US regulators. This prerogative will also define whether Libra will be conceived as a proper currency or restricted to be used as an investment certificate.

Libra, as far as it has been presented, will have the potential to introduce billions of future users into the digital economy, as they will be able to access it through apps and use the Libra to pay for things or to send money to other users. Those functionalities are not distant from the idea of value transfer via blockchain, common to other cryptocurrencies. The consequences of Libra's introduction on other Cryptocurrencies are yet to be defined.

Libra is designed to be a licensed digital currency and infrastructure planned to revolutionize not only the way we conceive money but also the means through which we use it. Facebook firmly believes, as publicly stated, that managing own financial assets on users' mobile devices should be simple and intuitive. It is worth taking in consideration though that, "in order to be accepted as value-stable money, Libra has to be covered by government securities and bank deposits and it has an intrinsic value" as pointed out by Christian Catalini et al. in the paper "The Libra Reserve" [8].

### **How Libra value will be established?**

In matter of value, David Marcus, Libra co-creator and board member reports that "Libra value should not be established in comparison to a single currency but against a currency board a sort of basket of different fiat currencies similar to the International Monetary Fund's Special Drawing

Rights”. In this regard, “it is reasonable to choose a corresponding currency structure for the currency reserves deposited at the Libra Reserve.

Since Libra is fully backed by value-stable financial assets, the Libra Reserve is, in fact, a large international money market fund with an investment focus on international bank deposits and short-term government securities.

Despite the fact that Libra is designed to function like a real currency, it is not limited to that. In fact, it should not only serve as a means of payment but also as a store of value and a unit of account.

### **Who will administer Libra?**

On the management side, this currency, and all the transactions involving it will be managed and entrusted by a group of companies united in the Libra Association.

The Libra Association is an independent, not-for-profit membership organization with the headquarter located in Geneva, Switzerland. The association’s purpose is to coordinate and provide a framework for governance for the blockchain and Libra’s reserve able to maximize the efficiency in the operations. The association’s membership is formed from the network of licensed validator nodes that constitute the Libra Blockchain. Members of the Libra Association will consist of geographically distributed and diverse businesses, nonprofit and multilateral organizations, and universities. Even though right now the “Founding Members” are mainly companies operating in the tech and financial markets, Facebook aim would have been to raise the number of the libra association members to a 100 by the time of the currency launch.

Libra’s management will mainly be in the hands of a subsidiary company of Facebook and Libra Reserve will be administered with the objective of preserving the coin value over time.

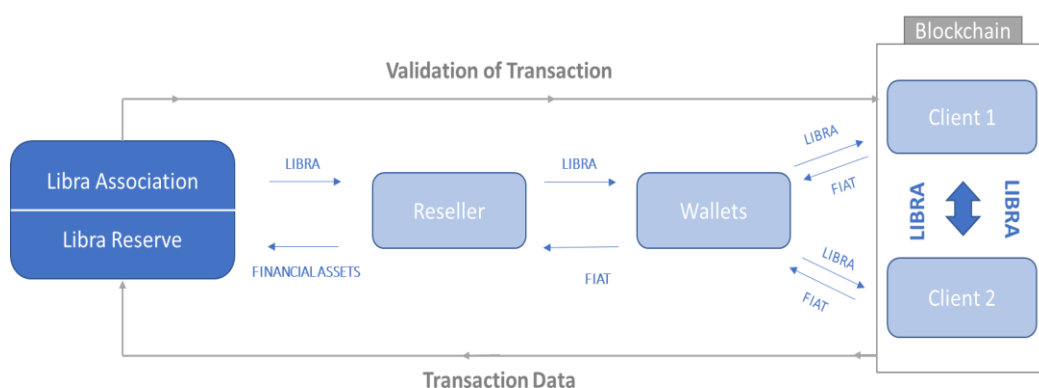
## How does Libra work and how to buy it?

Unlike Bitcoin, Libra will not be earned as a reward for mining. It will be more like a normal asset, similarly to money. All the transactions will be managed by the Libra Association, with a full guarantee of security. Libra aims at transactions speed and efficiency exploiting a network that does not require permissions from any official authorities. Libra's supply will be backed by the same kind of asset reserves it will be backed by.

Facebook also plans to release an e-wallet called Calibra, which will be made available as on the main social media platforms as on a dedicated Libra multiplatform application.

Transactions from fiat currencies and Libra will be operated by "authorized resellers" only. Those resellers will then exchange Libra with the Libra Association for short-term government bonds and bank deposits acquired with the fiat currencies previously received. This process (fig 1.1) is also integrated into the blockchain that come into play when customers seek to purchase Libra against fiat currency on exchanges or through a digital wallet for subsequent transfers with other customers via the Libra Blockchain.

**Figure 1.1: The Libra system**



## Libra Blockchain

Libra is based on Libra Blockchain which is a decentralized database system. but the term blockchain is not appropriate as Libra Blockchain does not store data in blocks,



but in a single data structure as pointed out by Jameson Lopp in his article: “How Will Facebook's Libra "Blockchain" Really Work?”.

A blockchain, as previously stated in regard of Bitcoin, is protected against third-party data manipulations through cryptography. In the case of Libra, the access to the blockchain will be permissioned, so that, in the beginning, access will only be granted to the members of the Libra Association in quality of node validators. Later, however, Facebook plans to progressively extend access to Libra blockchain to external developers so that they can create smart contracts by themselves. Goal of this process is to make the blockchain accessible to everyone so that the process of transactions validation will be distributed and no longer carried out exclusively by Libra Association members or external developers.

### **Libra’s differences from Bitcoin and other cryptocurrencies**

The premises for the launch of Libra have not been the most desirable considering the delicacy of the subject in matter of cryptocurrencies. From the slow regulatory response to Bitcoin from worldwide agencies, among which the SEC and FINRA, main authorities in matter of financial regulation, to the investigations undertaken by the FTC for the risk of exposure of the Libra’s system to frauds.

Despite the adversities, it remains of focal importance for governments, regulators and user not to fall in the temptation of inaccurate comparisons between Libra, Bitcoin and the other cryptocurrencies under several point of analysis, from their operation and regulatory needs to their correlated risks.

While both Bitcoin and Libra are crypto assets that can be transacted as digital currencies, other than the fact that they both come with a white paper and are referred to as cryptocurrencies, Libra and Bitcoin are actually very different, to the point it could be questioned whether Libra can even be called a cryptocurrency.

Starting from the underlying technology, the concept of centralization of control of the two currencies represents a key difference between the two cryptocurrencies. Bitcoin can be considered fully apolitical and decentralized as its blockchain is a public ledger maintained by a network of computers or “nodes” spread all over the world in which transactions are recorded in a completely anonymously way. It is essentially a database maintained by a network of computers, on which transactions are registered and encrypted. Unlike Fiat currencies, no main authority or government controls it nor grants it. Conversely, Libra, as far as it has been planned, will operate on a more controlled and protected environment. Libra will be backed from Facebook and the Libra Association, the Swiss based foundation among whose members there are several established brands, including Uber, Vodafone, E-bay, Visa Spotify and PayPal, that will exercise a large amount of protection and control over the assets, its uses and its blockchain. The decentralized aspect of cryptocurrencies may translate in consistent time delays in the transaction validation process and result, consequently, in payments slowdowns. One of Libra’s strength points is Facebook’s aim to solve those peculiar delays by relaying on the Libra Association as the central authority to validate the transactions making Libra resemble more to a Fiat currency than to the typical cryptocurrency.

In addition to that, Bitcoin mining is free from any requirement in terms of license or permissions, requiring only fair enough hardware capabilities and access to the internet. Libra instead, will run on a licensed blockchain, requiring aspiring miners to preventively apply for a license from the competent authority. Only authorized entities can add transactions to the ledger, and majority of Libra's founding members are trusted as are mainly tech and financial companies

As far as value is concerned, Libra and Bitcoins will also differ considerably. Bitcoin’s basis of value is the fixed supply of coins created during its launch more than a decade ago and independent from any element of traditional

financial systems as is its demand sets its price. On the other end, Libra's value is backed by a basket of fiat currencies and will always have exactly as many coins as its corresponding fiat pool's value.

Bitcoin supply is planned not to exceed an overall quantity of 21 million bitcoins. Conversely, Libra's supply will be planned and set by the Libra Association in relation to its demand needs. When the user exchanges dollars, euros or any other Fiat currency for Libra, new corresponding assets are created. When they pay or cash out, those coins will then be destroyed.

Significant differences among the two cryptocurrencies can also be found in terms of scalability of authorizations for the transactions. The Bitcoin network has the capabilities to authorize number of transactions equal to several hundred thousand, a quantity significantly lower in comparison to financial institutions like Visa. Libra will aim to compensate this gap partially by exploiting a well-defined governance structure where necessary technical flexibility can be efficiently assessed in an organized manner by the Libra Association members. Among the others, this particular subject is generating few privacy concerns as users will have to entrust those companies with their financial transactions and consequently the knowledge of people's purchases and behavior extremely valuable for advertising and resale to other companies.

Bitcoin is designed as peer-to-peer electronic cash that does not go through any third-parties or financial intermediaries or institutions are involved. In contrast, Libra has a higher goal to become the standard in a new digital financial system but keeping bounded to the ordinary currencies.

Nowadays Bitcoin is more comparable to a valuable commodity, not so far from how the gold is and it expose the cryptocurrency along with the others current predominant usage as speculative investment rather than being used as an ordinary currency for daily payments. Conversely, Libra is less exposed to this misuse, as is more like a security backed by its own bank

system. Its value depends on the value of the reserve of government-issued assets backing it.

### **The impact of Libra on Bitcoin and other cryptocurrencies**

Part of the ambitious long-term vision Facebook plans to achieve with the introduction of Libra is to incentivize the use of a single, world spread currency for all the transactions taking over the paper currencies thanks to the help of its decentralized blockchain system. Consequences of this vision would be the diffusion of a super-currency, conceived in the Freudian sense of the prefix, that will be capable of flattening the differences in power of the economies of the countries as currency changes will be eliminated from the market. clear benefits could be drawn from less developed countries giving new opportunities of development to backward economies.

From a short-term perspective, as previously mentioned, the belief that moving money around globally should be as easy and cost-effective as sending a text message or sharing a post, regardless of the user's geographical location or economic availability.

Many experts hypothesize that Libra could help the world become more familiar with Bitcoin and digital currencies, following Bitcoin footsteps and taking over the role of the forerunner towards the revolution of the financial system.

As many other experts, on the other end, hypothesize Libra could represent the disruption of cryptocurrencies more than their redemption.

It should be taken in consideration that the main entity behind Libra will be Facebook. The social media giant that, with all the numerous privacy-related scandals of which it has been the protagonist over the past years, even though indirectly, is the most emblematic antithesis to everything bitcoin morally represents. In other words, Libra could mine the most fundamentals premises of Bitcoin and the other digital currencies: decentralization, freedom of control from big governments, big banks and big companies, diffusing misconceptions regarding cryptocurrencies. Temtum CEO, Richard Dennis explained in an interview with Forbes that Libra's founding members are some of the world's largest companies that will exercise control over it and are

inevitably expecting a profit from joining this venture. Users therefore will be stacked in a hybrid system undergoing the influence and control both by, companies like Facebook or Uber, on one side, and by the existing financial structures via VISA, Mastercard and PayPal on the other.

The fact that Libra could end up settling to be a slight variation from the traditional financial system and not have much impact on Bitcoin's way of being perceived, as the world's first and most popular cryptocurrency's key value proposition is as an apolitical medium of exchange is also true that those non-negative effect on Bitcoin's price in the "crypto" market could not necessary result in a positive outcome, as Bitcoins and cryptocurrencies in general will continue to be considered by governments and users more as a store of value or commodity than a proper usable currency.

If it turns out to be true the hypothesis that Libra will not affect Bitcoin price, other variables will necessarily be taken into consideration as for example is reported by Chamil W. Senarathne PhD. in his paper entitled: "Possible Impact of Facebook's Libra on Volatility of Bitcoin: Evidence from Initial Coin Offer Funding Data"

Senarathne states that numerous are the general socio-economic advantages of Libra over Bitcoins and cryptocurrencies. As a stable global currency and financial infrastructure Libra will empower economic opportunities and promoting more commercial exchanges across the world without even considering that it will helps all the unbanked individuals by giving them access to basic financial services.

From cryptocurrency investors' perspective, Senarathne hypothesize that Libra is likely end up being another means to achieve portfolio diversification, but more than that, his research resulted in the evidence of profound negative long-term impact of Libra on the volatility of Bitcoin and that will increase currency portfolio diversification benefits along with general stability in the overall cryptocurrency market.

### **The market potential of Libra**

Facebook vision is to empower billions of people in emerging economies who very often have no access to banking or other financial services. This aim will be pursued by

developing an ecosystem around Libra coins that will enable worldwide monetary transactions in a digital currency that has the advantages of being stable and carrying close to zero marginal costs for transactions.

One of the main Libra goals therefore is to promote financial inclusion worldwide, with specific attention to less industrialized countries, through the provision of easier access to the basic financial services. Facebook forecasts that Libra's pool of users will initially amount to 1.7 billion people worldwide, emerging and developing countries included, considering the fact that two-thirds of these people already have mobile phones and have access to the internet, basic requirements for a user to participate to the Libra network and carry out transactions.

Second aim is to offer users in countries with unstable currencies, where the US dollar and Euro are used as parallel currencies, an alternative, Libra not only as a means of payment but also a rather stable store of value protected against inflation and depreciation risks.

Libra potential would seem more limited in the industrial countries due to the following factors:

- transactions are already rather fast. There is much competition from established payment service providers like for example PayPal.
- there is considerable uncertainty about exchange rate fluctuations relatively to national currencies.
- distrust of data abuse by the members of the Libra Association.

Nevertheless, Libra could also have applications in this setting because fees for cross-border payments, both via cash and bank transfers average on 7% and mobile cross-border payments average on 4.9% of the transaction amount. Banks and alternative financial services providers (eg.: Western Union, MoneyGram) have already been subjected to severe criticisms for the high transactions fees and exchange rates along with long transaction durations.

Facebook and the Libra Association are planning to address these difficulties by offering transfers at significantly lower prices, in order to win the competition and gain a significant market share in cross-border payments.

### **Issues with Libra**

Libra has several basic challenges, like what would happen if a fraudulent transaction occurred on the Libra network?

This network was originally to be supported by Libra Association who would act as the network's nodes. Facebook's Libra blockchain starts as permissioned (centralized) relying on the governance of the Libra Association as a central authority but aims to transition into a permission-free decentralized network [6]

Last October, Libra Association lost a quarter of its members before it launched, including US payment giants Mastercard and Visa.

That was then. The first to ditch Libra was Paypal, which withdrew on October 4th. Then, over the course of a few hours on October 11th, Visa, Mastercard, Stripe and Mercado Pago all bailed on the project, with eBay tagging along for good measure. That meant every major US payment processor has exited the association. (The final remaining payment processor, PayU, has not responded to multiple requests for comment.) This is an alarming turnaround for the Facebook-backed project

This group of companies had special reasons to get cold feet. With exception of eBay, they are all payment processors, which means they have specific regulatory requirements dealing with fraud, money laundering and sanctions enforcement.

In brief, as the Senate of the United States has affirmed: "Facebook appears to want the benefits of engaging in financial activities without the responsibility of being regulated as a financial services company."

Libra aroused increasing opposition from all sides; central banks, regulators, law makers, and tax agencies as John Taskinsoy stated. [14]

The implication was clear: if Libra made things too easy for terrorists and money launderers, Visa, Mastercard and the others might end up taking the blame.

Governments were starting to realize that Libra might make it hard to meet those requirements and payment processors, in specific, would end up on the hook.

Right after the announcement Libra's launch, central banks have called for a review of Libra and the US lawmakers have asked Facebook to scrap its Libra cryptocurrency

To support that, last December, EU finance ministers agreed that private digital currencies like Facebook's Libra should not be allowed in the European Union until the risks they could pose are clearly addressed.

Libra cryptocurrency has evoked great perplexities from consumer protection groups, this is in most part due to Facebook's troubled past with data disclosure scandals (i.e. Cambridge Analytica). Facebook should guarantee to protect consumers from companies with previous privacy abuse and exploitation of users' data.

Those adversities constitute a central problem for Libra and the same regulatory tangle that discouraged the initial group of processors is likely to discourage newcomers too.

Moreover, anyone who would step into the Libra Association would have the difficult task to convince governments around the world to clear the way for Libra at a time when public trust in Facebook has never been lower.

This will not probably constitute the end for Libra, but the project faces a hard path in the next future.

The Facebook and Libra Association ability to grant its users privacy protection and the level of interference Libra will have with monetary policy actions in fiat currencies by the Federal Reserve or the European Central Bank, are factors that will play a central role in Libra launch.



## **CHAPTER II - MATERIALS AND METHODS**

### **How the research has been conducted**

The study has been conducted by formulating two questionnaires, the first addressed to companies of different sizes and operating in the major businesses and the second addressed to private individuals, of different age and with different levels of education, with the aim of collecting the widest range of possible results.

Each of the questionnaires has been submitted to 200 subjects, within 6 months from October 2019 to March 2020 in Italian or English depending on the interlocutors.

The two questionnaires are organized mainly in the form of multiple-choice questions and are divided in sections according to the focus of the related questions.

Both questionnaires have been made to achieve, in first instance, data over the level of familiarity of the subjects with social networks, whether for personal use or for marketing purposes. Subsequently, the questions have been mainly focused on the level of acquaintance with the concept of cryptocurrencies in general and Bitcoin. In each questionnaire a short introduction to Libra and its functioning has been followed by questions focused on this coin, specifically on investigating the propensity of the interviewees to its future use, taking in consideration its potential risks.

### **Presentation of the questionnaire addressed the companies**

The questionnaire addressed to companies is structured in three sections. The first section of the survey included questions aimed to collect data concerning the legal form, the composition and territorial distribution of each company to categorize them.

The companies were asked to specify their legal identity, whether it was Sole Proprietorship, Limited Liability Company, Private/Public Limited Company, Social

Cooperative and Non-profit Company. They were also surveyed about the number of employees distinguishing between 0 and 10 in case of micro companies, between 10 and 49 in case of small companies, between 50 and 249 in case of medium sized companies and over 249 for large enterprises according to UE Community standards. Another three questions concerned the activity carried out by the companies: what business they operated in, whether at a local, national or international level, the type of output (product or service) and how they relate to customers, whether through direct sales or through indirect means. This first section was aimed to collect information that can lead to identify behavioral analogies and common tendencies among companies of similar patterns, to formulate a statistical forecast of Libra potential in the business environment.

The second section of the questionnaire had the purpose to assess the sampled companies propension towards social media marketing. Companies were asked about:

- their level of presence on social media for marketing purposes rated on a scale from 1 to 10.
- possession of a corporate Facebook or Instagram page.
- The type of management of the corporate social pages, whether it was internalized or outsourced.

The data of this second section of the questionnaire would be useful to obtain a perspective on the company's general inclination towards experimenting innovative means to run their business and to adopt them in the different business areas.

The last section of the survey starts with a question concerning the use of Paypal and cryptocurrencies (Bitcoin) as form of payment already admitted in exchange for their product and services. Subsequently, there have been formulated questions specifically regarding Libra. In more detail, it was investigated:

- If the consequences and opportunities of the launch of Libra for the company had already internally considered.

- What was companies' propensity in the adoption between Libra, Paypal and Bitcoin as payment methods from a security point of view.

Which of the following risks the company was most afraid of incurring, in relation to the possible Libra adoption and use.

- i) Misuse of company information by Facebook and the Libra Association despite confidentiality commitments.
- ii) Misuse of customer information by Facebook and the Libra Association despite confidentiality commitments.
- iii) Risk of being indirectly damaged by possible information leaks and hacker attacks to which Facebook and the Libra Association could be exposed.
- iv) Risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions
- v) Risk of fraud against the company, due to a disintermediation of traditional banking players

The purpose of this section is to determine the level of awareness regarding cryptocurrencies in general and more specifically Libra's imminent launch along with the propension to its adoption, in the business permits, and the risks feared by the companies about the use of this new digital currency.

### **Presentation of questionnaire addressed to the individuals**

The questionnaire addressed to private individuals follows the same thematic structure of the one addressed to the companies.

The first section contained epidemiological questions concerning the age, gender and education level of the interviewees. Based on the age range (<18 years old, from 19 to 35 years, from 36 to 60 years and over 60 years), the responders were divided in four groups. The purpose of those question was not only to establish the variety of the sample

but also to assess the influence of the gender, average age, and education level on the results of the last two sections of this questionnaire.

The second section, included questions aimed to identify the frequency of use of Social medias by the interviewees, the possession of a Facebook account as far as the degree of care reserved to the privacy policies associated to contents or apps diffused on The Facebook platform. In this section was also surveyed if the respondents have encountered any privacy problem on Facebook, at the time of this study and their level of acquaintance with the Privacy scandals involving Facebook in the past years.

The last section of the questionnaire was intended to investigate the respondents' familiarity with the use of cryptocurrencies (Bitcoin) and with concept of Libra, including the risks associated to latter. For this purpose, the interviewees were asked to indicate if they ever had the possibility to use any cryptocurrency in transaction and if they knew that Facebook was planning to release its digital currency named Libra. On a basis of the brief introduction to Libra included, the last questions focused more on Libra. Interviewees had been asked which one was the most feared risk of libra among the following:

- Incorrect use of your data by Facebook and the Libra Association despite the signed confidentiality commitments
- Risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions.
- Risk of lesser own protection, as a customer, in transactions, compared to the most common payment systems and greater sensitivity in case of scams.
- Risk of being indirectly damaged by computer violations to which Facebook and the Libra Association could be exposed to.

Interviewees were asked whether they considered positively or negatively, in terms of personal privacy, the fact that Facebook continues its expansion in the world of data by extending, through Libra, its reach to various aspects of the life of its users. In consideration of the aspects listed below:

- The size of Facebook's network means Libra could be immediately and systemically important
- Fears around widespread adoption of Libra have been shared by leaders around the globe as Libra could become a "sovereign currency" that could compete with state currencies.
- Libra would operate in a regulatory "Void" so it could be restricted to be a private cryptocurrency.
- Cryptocurrencies are frequently targeted by hackers: in the first eight months of 2018, according to a report from Ciphertrace, hackers stole nearly \$1 billion from cryptocurrency exchanges. [15]

The subjects were interviewed to express whether they would have still been inclined to the use Libra.

In conclusion, the last question presented the interviewees with 4 possible circumstances in which Libra could be used:

1. Online shopping
2. Use for daily purchases (alternative to ATM or cash)
3. Sending money to relatives and friends
4. Alternative to prepaid cards
5. Form of investment

Respondents were asked to choose the option they most likely would use Libra for.

## Questionnaire templates

<b>Libra evaluation questionnaire submitted to the companies – English version</b>
<p><b><i>Introduction to Libra</i></b></p> <p><i>Libra is designed to "bring together the attributes of the world's best currencies: stability, low inflation, wide global acceptance, and fungibility." As a full-featured money, it should not only serve as a means of payment but also as a store of value and a unit of account.</i></p> <p><i>Libra's users will be able to set up a Libra wallet in which people can store the cryptocurrency, by verifying their identities online with a government document.</i></p> <p><i>This wallet will be accessible through Messenger, WhatsApp, and a dedicated app called Calibra, downloadable through the major app stores.</i></p> <p><i>Every time a user will buy a Libra coin using ordinary currencies, that very same coin will be deposited in his Libra wallet and the corresponding money in dollars or euros will be deposited into a bank account where it will sit untouched preventing Libra from being too susceptible to market fluctuations as is the case with Bitcoin.</i></p> <p><i>Libra should be exchanged free of charge and transferred and accepted easily and in a user-friendly way as a means of payment by large merchants. Additionally, Libra payments could also be processed outside traditional banks' opening hours.</i></p> <p><i>Facebook hopes to make this process open to people almost anywhere in the world allowing its users make money transfers all around the world and, in a near future, to spend it too with the same flexibility with the exception of the countries where the social network is restricted, such as China and Iran.</i></p>
<p><b>1. Indicate type of company:</b></p>
<ul style="list-style-type: none"> <li>• Sole proprietorship / freelance</li> </ul>
<ul style="list-style-type: none"> <li>• Limited liability company</li> </ul>
<ul style="list-style-type: none"> <li>• Stock company</li> </ul>
<ul style="list-style-type: none"> <li>• Limited partnership company</li> </ul>
<ul style="list-style-type: none"> <li>• Copartnership</li> </ul>
<ul style="list-style-type: none"> <li>• Cooperative</li> </ul>
<ul style="list-style-type: none"> <li>• Consortium</li> </ul>
<ul style="list-style-type: none"> <li>• Association or other type of voluntary organization</li> </ul>
<ul style="list-style-type: none"> <li>• Public entity</li> </ul>
<p><b>2. Indicate the number of employees:</b></p>
<ul style="list-style-type: none"> <li>• less than 10 employees</li> </ul>
<ul style="list-style-type: none"> <li>• from 10 to 49 employees</li> </ul>
<ul style="list-style-type: none"> <li>• from 50 to 249 employees</li> </ul>
<ul style="list-style-type: none"> <li>• over 249 employees</li> </ul>
<p><b>3. Indicate market localization of the company:</b></p>
<ul style="list-style-type: none"> <li>• Local</li> </ul>
<ul style="list-style-type: none"> <li>• National</li> </ul>

<ul style="list-style-type: none"> <li>• Multinational</li> </ul>
<b>4. Indicate the main type of Customers who purchase your products / services (indicate items concerned):</b>
<ul style="list-style-type: none"> <li>• Companies (legal persons)</li> </ul>
<ul style="list-style-type: none"> <li>• Individuals / natural persons</li> </ul>
<ul style="list-style-type: none"> <li>• Freelancers</li> </ul>
<ul style="list-style-type: none"> <li>• Public entities</li> </ul>
<ul style="list-style-type: none"> <li>• Individuals in the social health sector</li> </ul>
<ul style="list-style-type: none"> <li>• Individuals in the education sector or similar.</li> </ul>
<b>5. Indicate the type of market in which the company operates:</b>
<ul style="list-style-type: none"> <li>• Automotive</li> </ul>
<ul style="list-style-type: none"> <li>• Libraries and Bookstores,</li> </ul>
<ul style="list-style-type: none"> <li>• Buildings</li> </ul>
<ul style="list-style-type: none"> <li>• Fashion</li> </ul>
<ul style="list-style-type: none"> <li>• Food &amp; Beverage,</li> </ul>
<ul style="list-style-type: none"> <li>• Industry &amp; Manufacturing,</li> </ul>
<ul style="list-style-type: none"> <li>• Public administration,</li> </ul>
<ul style="list-style-type: none"> <li>• Retail</li> </ul>
<ul style="list-style-type: none"> <li>• Health</li> </ul>
<ul style="list-style-type: none"> <li>• IT</li> </ul>
<ul style="list-style-type: none"> <li>• Transportation</li> </ul>
<ul style="list-style-type: none"> <li>• Tourism</li> </ul>
<b>6. Indicate whether the company operates mainly through direct or indirect contact (online store etc.) with customers:</b>
<ul style="list-style-type: none"> <li>• Direct contact</li> </ul>
<ul style="list-style-type: none"> <li>• Indirect contact</li> </ul>
<b>7. Indicate the type of output that the company sells:</b>
<ul style="list-style-type: none"> <li>• Product</li> </ul>
<ul style="list-style-type: none"> <li>• Service</li> </ul>
<b>8. Quantify the use of social networks for advertising purposes by the company on a scale of 1 to 10:</b>
<ul style="list-style-type: none"> <li>• 1</li> </ul>
<ul style="list-style-type: none"> <li>• 2</li> </ul>
<ul style="list-style-type: none"> <li>• 3</li> </ul>
<ul style="list-style-type: none"> <li>• 4</li> </ul>
<ul style="list-style-type: none"> <li>• 5</li> </ul>

<ul style="list-style-type: none"> <li>• 6</li> </ul>
<ul style="list-style-type: none"> <li>• 7</li> </ul>
<ul style="list-style-type: none"> <li>• 8</li> </ul>
<ul style="list-style-type: none"> <li>• 9</li> </ul>
<ul style="list-style-type: none"> <li>• 10</li> </ul>
<b>9. Indicate if the company has a dedicated Facebook page:</b>
<ul style="list-style-type: none"> <li>• Yes</li> </ul>
<ul style="list-style-type: none"> <li>• No</li> </ul>
<b>10. Indicate whether the management of social pages for advertising purposes is internalized or outsourced:</b>
<ul style="list-style-type: none"> <li>• Outsourced</li> </ul>
<ul style="list-style-type: none"> <li>• Internalized</li> </ul>
<b>11. Indicate if PayPal and Bitcoin are among the currently accepted payment types?</b>
<ul style="list-style-type: none"> <li>• PayPal</li> </ul>
<ul style="list-style-type: none"> <li>• Bitcoin</li> </ul>
<ul style="list-style-type: none"> <li>• Both of them</li> </ul>
<ul style="list-style-type: none"> <li>• None of the two</li> </ul>
<b>12. Indicate whether the consequences and opportunities that the launch of Libra may entail for the company are already being discussed internally, including any propensity of the company to adopt it as a payment option to offer to customers</b>
<ul style="list-style-type: none"> <li>• Yes</li> </ul>
<ul style="list-style-type: none"> <li>• No</li> </ul>
<b>13. Considering the security issue, choose from the following systems or currencies, based on your propensity to adopt for receiving payments from customers:</b>
<ul style="list-style-type: none"> <li>• PayPal</li> </ul>
<ul style="list-style-type: none"> <li>• Bitcoin</li> </ul>
<ul style="list-style-type: none"> <li>• Libra</li> </ul>
<b>14. Indicate among the following risks the company is most afraid of incurring in relation to the possible adoption and use of Libra.</b>
<ul style="list-style-type: none"> <li>• Misuse of company information by Facebook and the Libra Association despite confidentiality commitments</li> </ul>
<ul style="list-style-type: none"> <li>• Misuse of customer information by Facebook and the Libra Association despite confidentiality commitments</li> </ul>
<ul style="list-style-type: none"> <li>• Risk of being indirectly damaged by possible information leaks and hacker attacks to which Facebook and the Libra Association could be exposed</li> </ul>



- |   |
|---|
| <ul style="list-style-type: none"><li>• Risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions</li></ul> |
| <ul style="list-style-type: none"><li>• Risk of fraud against the company, due to a disintermediation of traditional banking players</li></ul>  |

## Libra evaluation questionnaire submitted to the companies – Italian version

### **Introduction to Libra**

Facebook intende lanciare una nuova criptovaluta globale chiamata Libra che potrebbe liberare il denaro dall' esclusivo controllo governativo e liberalizzare le transazioni monetarie in tutto il mondo. Libra è progettata per "riunire gli attributi delle migliori valute del mondo: stabilità, bassa inflazione, ampia accettazione globale e fungibilità". In quanto moneta, non dovrebbe servire solo come mezzo di pagamento, ma anche come riserva di valore e unità di conto.

Gli utenti di Libra potranno creare un portafoglio Libra in cui le persone possono depositare la criptovaluta, verificando la propria identità online con un documento governativo. Questo portafoglio sarà accessibile tramite servizi Facebook come Messenger, WhatsApp oltre ad un'app dedicata chiamata Calibra, scaricabile tramite i principali app store.

Ogni volta che un utente acquisterà una moneta Libra utilizzando valute ordinarie, quella stessa moneta verrà depositata nel suo portafoglio Libra e il corrispondente valore in valute convenzionali verrà depositato su un conto bancario dove rimarrà intoccato impedendo a Libra di essere eccessivamente suscettibile alle fluttuazioni del prezzo di mercato come invece avviene per i Bitcoin.

Libra, stando a quanto annunciato, dovrebbe essere scambiata gratuitamente, trasferita facilmente e accettata in modo user-friendly come mezzo di pagamento dai grandi operatori del mercato. Inoltre, i pagamenti Libra avrebbero il vantaggio di poter essere elaborati anche al di fuori degli orari di apertura delle banche tradizionali.

Facebook spera di rendere questo progetto operativo quasi ovunque nel mondo consentendo agli utenti di Libra di effettuare trasferimenti di denaro in tutto il mondo e, in un prossimo futuro, di spenderlo anche con la stessa flessibilità, ad eccezione dei paesi in cui l'utilizzo del social network è proibito, come nel caso di Cina e Iran

### **1. Indicare tipologia di azienda:**

- Ditta individuale / libero professionista
- S.r.l.
- S.p.a
- S.a.s.
- S.n.c.
- Cooperativa
- Consorzio
- Associazione o altro tipo di ente volontaristico
- Ente Pubblico

### **2. Indicare numero dipendenti:**

- meno di 10 dipendenti
- da 10 a 49 dipendenti
- da 50 a 249 dipendenti
- oltre 249 dipendenti

### **3. Indicare la localizzazione del mercato dell'azienda:**

- Locale
- Nazionale
- Multinazionale

<b>4. Indicare la principale tipologia di Clienti che acquistano i Vs. prodotti/servizi (indicare voci interessate):</b>
• Aziende (persone giuridiche);
• Privati/persone fisiche;
• Liberi professionisti;
• Enti Pubblici;
• Individui nel settore socio sanitario;;
• individui nel settore dell'istruzione o similare.
<b>5. Indicare la tipologia di mercato in cui l'azienda opera:</b>
• Automotive
• Biblioteche e Librerie,
• Costruzioni
• Fashion
• Food & Beverage,
• Industry & Manufacturing,
• Pubblica Amministrazione,
• Retail
• Sanità
• IT
• Trasporti
• Turismo
<b>6. Indicare se l'azienda opera prevalentemente tramite contatto diretto oppure indiretto (online store etc.) con i clienti:</b>
• Diretto
• Indiretto
<b>7. Indicare la tipologia di output che l'azienda vende:</b>
• Prodotto
• Servizio
<b>8. Quantificare utilizzo dei social network a scopo pubblicitario da parte dell'azienda in una scala da 1 a 10:</b>
• 1
• 2
• 3
• 4
• 5
• 6

• 7
• 8
• 9
• 10
<b>9. Indicare se l'azienda è in possesso di una pagina Facebook dedicata:</b>
• Si
• No
<b>10. Indicare se la gestione pagine social a scopo pubblicitario è internizzata o esternalizzata:</b>
• Esternalizzata
• Internalizzata
<b>11. Indicare se tra le tipologie di pagamento attualmente accettate è presente PayPal e Bitcoin?</b>
• PayPal
• Bitcoin
• Entrambe
• Nessuna delle due.
<b>12. Indicare se vengono già discusse in azienda le conseguenze e le opportunità che il lancio di Libra potrà comportare per l'azienda , inclusa l'eventuale propensione dell'azienda alla sua adozione come opzione di pagamento da offrire alla clientela</b>
• Si
• No
<b>13. Considerando il tema sicurezza, scegliere tra i seguenti sistemi o valute in base alla propria propensione all'adozione per la ricezione di pagamenti da client:</b>
• PayPal
• Bitcoin
• Libra
<b>14. Indicare tra i seguenti rischi l'azienda teme di maggiormente di incorrere relativamente alla eventuale adozione e utilizzo di Libra.</b>
• Uso improprio delle informazioni dell'azienda da parte di Facebook e della Libra Association nonostante gli impegni di riservatezza
• Uso improprio delle informazione dei clienti da parte di Facebook e della Libra Association nonostante gli impegni di riservatezza
• Rischio di subire danni indiretti relativi a eventuali leaks di informazioni e attacchi hacker a cui Facebook e la Libra Association potrebbero essere esposti
• Rischio di incorrere in sanzioni relative alla difficoltà di regolamentazione da parte degli enti governativi e alla minore trasparenza delle transazioni
• Rischio di frode ai danni dell'azienda, dovuti ad una disintermediazione dei player bancari tradizionali

## Libra evaluation questionnaire submitted to the individuals – English version

### **Introduction to Libra**

*Facebook intends to launch a new global cryptocurrency called Libra that could free money from its "government chains" and liberalize monetary transactions around the world.*

*Libra is designed to "bring together the attributes of the world's best currencies: stability, low inflation, wide global acceptance, and fungibility." As a full-featured money, it should not only serve as a means of payment but also as a store of value and a unit of account.*

*Libra's users will be able to set up a Libra wallet in which people can store the cryptocurrency, by verifying their identities online with a government document.*

*This wallet will be accessible through Messenger, WhatsApp, and a dedicated app called Calibra, downloadable through the major app stores.*

*Every time a user will buy a Libra coin using ordinary currencies, that very same coin will be deposited in his Libra wallet and the corresponding money in dollars or euros will be deposited into a bank account where it will sit untouched preventing Libra from being too susceptible to market fluctuations as is the case with Bitcoin.*

*Libra should be exchanged free of charge and transferred and accepted easily and in a user-friendly way as a means of payment by large merchants. Additionally, Libra payments could also be processed outside traditional banks' opening hours.*

*Facebook hopes to make this process open to people almost anywhere in the world allowing its users make money transfers all around the world and, in a near future, to spend it too with the same flexibility with the exception of the countries where the social network is restricted, such as China and Iran.*

### **1. Specify your gender**

- Male
- Female

### **2. Indicate the age range of belonging**

- Minor
- 18 - 35
- 36 - 60
- Over 60

### **3. Indicate your level of education**

- High school education diploma
- Three-year degree
- Master's degree

### **4. On average how often you use social networks on a scale of 1 to 10 per day:**

- 1
- 2
- 3
- 4
- 5
- 6

• 7
• 8
• 9
• 10
<b>5. Do you have a Facebook account or page?</b>
• Yes
• No
<b>6. Do you usually read the related privacy policy when using a Facebook app or tool?</b>
• Never
• Sometimes
• Always
<b>7. Have you ever directly encountered privacy problems in using Facebook (eg: publication of posts by your Facebook profile against your will or without your knowledge)?</b>
• Yes
• No
<b>8. Are you aware of the scandal involving Facebook and Cambridge Analytica?</b>
• Yes
• Yes but I have not deepened the topic
• No
<b>9. Have you ever had the opportunity to use cryptocurrencies such as Bitcoin?</b>
• Yes
• No
<b>10. Are you aware that Facebook is launching its own virtual currency, Libra?</b>
• Yes
• No
<b>11. In light of this introduction to Libra, what threat to your privacy would you fear most from Facebook's use of your data as part of the use of Libra?</b>
• Incorrect use of your data by Facebook and the Libra Association despite the signed confidentiality commitments
• Risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions
• Risk of lesser own protection, as a customer, in transactions, compared to the most common payment systems and greater sensitivity in case of scams.
• Risk of being indirectly damaged by computer violations to which Facebook and the Libra Association could be exposed to

<p><b>12. Do you consider positively or negatively, in terms of personal privacy, the fact that Facebook continues its expansion in the world of data by extending, through Libra, its reach to various aspects of the lives of its users?</b></p>
<ul style="list-style-type: none"> <li>• Positively</li> </ul>
<ul style="list-style-type: none"> <li>• Negatively</li> </ul>
<p><b>13. In consideration of these aspects for and against the Libra coin:</b></p> <ul style="list-style-type: none"> <li>➤ The size of Facebook’s network means it could be immediately and systemically important.</li> <li>➤ Fears around widespread adoption of Libra have been shared by leaders around the globe as Libra could become a “sovereign currency” that could compete with state currencies.</li> <li>➤ Libra would operate in a regulatory “Void” so it could be restricted to be a private cryptocurrency.</li> <li>➤ Cryptocurrencies are frequently targeted by hackers. In the first eight months of 2018, according to a report of CipherTrace, hackers stole nearly \$1 billion from cryptocurrency exchanges.</li> </ul> <p><b>Indicate your willingness to experiment with Libra:</b></p>
<ul style="list-style-type: none"> <li>• Yes</li> </ul>
<ul style="list-style-type: none"> <li>• Probably yes</li> </ul>
<ul style="list-style-type: none"> <li>• No</li> </ul>
<p><b>14. For which type of transactions would you be more inclined to use Libra:</b></p>
<ul style="list-style-type: none"> <li>• Online shopping</li> </ul>
<ul style="list-style-type: none"> <li>• Use for daily purchases (alternative to ATM or cash)</li> </ul>
<ul style="list-style-type: none"> <li>• Sending money to relatives and friends</li> </ul>
<ul style="list-style-type: none"> <li>• Alternative to prepaid cards</li> </ul>
<ul style="list-style-type: none"> <li>• Form of investment</li> </ul>

## Libra evaluation questionnaire submitted to the individuals – Italian version

### *Introduzione a Libra*

*Facebook intende lanciare una nuova criptovaluta globale chiamata Libra che potrebbe liberare il denaro dall' esclusivo controllo governativo e liberalizzare le transazioni monetarie in tutto il mondo.*

*Libra è progettata per "riunire gli attributi delle migliori valute del mondo: stabilità, bassa inflazione, ampia accettazione globale e fungibilità". In quanto moneta, non dovrebbe servire solo come mezzo di pagamento, ma anche come riserva di valore e unità di conto.*

*Gli utenti di Libra potranno creare un portafoglio Libra in cui le persone possono depositare la criptovaluta, verificando la propria identità online con un documento governativo.*

*Questo portafoglio sarà accessibile tramite servizi Facebook come Messenger, WhatsApp oltre ad un'app dedicata chiamata Calibra, scaricabile tramite i principali app store.*

*Ogni volta che un utente acquisterà una moneta Libra utilizzando valute ordinarie, quella stessa moneta verrà depositata nel suo portafoglio Libra e il corrispondente valore in valute convenzionali verrà depositato su un conto bancario dove rimarrà intoccato impedendo a Libra di essere eccessivamente suscettibile alle fluttuazioni del prezzo di mercato come invece avviene per i Bitcoin.*

*Libra, stando a quanto annunciato, dovrebbe essere scambiata gratuitamente, trasferita facilmente e accettata in modo user-friendly come mezzo di pagamento dai grandi operatori del mercato.*

*Inoltre, i pagamenti Libra avrebbero il vantaggio di poter essere elaborati anche al di fuori degli orari di apertura delle banche tradizionali.*

*Facebook spera di rendere questo progetto operativo quasi ovunque nel mondo consentendo agli utenti di Libra di effettuare trasferimenti di denaro in tutto il mondo e, in un prossimo futuro, di spenderlo anche con la stessa flessibilità, ad eccezione dei paesi in cui l'utilizzo del social network è proibito, come nel caso di Cina e Iran.*

### **1. Specifica il tuo sesso:**

- Maschio
- Femmina

### **2. Indica il range di età di appartenenza:**

- Minorenne
- 18 - 35
- 36 - 60
- Over 60

### **3. Indica il tuo livello di istruzione:**

- Diploma di istruzione liceale
- Laurea triennale
- Laurea Magistrale

### **4. In media, con che frequenza giornaliera utilizzi i social network in una scala da 1 a 10?**

- 1
- 2
- 3
- 4
- 5



• 6
• 7
• 8
• 9
• 10
<b>5. Sei in possesso di un account o pagina Facebook?</b>
• Si
• No
<b>6. Solitamente leggi la relativa normativa privacy quando si utilizza una app o tool di Facebook?</b>
• Mai
• Avolte
• Sempre
<b>7. Hai mai direttamente riscontrato problemi di privacy nell'utilizzo di Facebook (es: pubblicazione di post da parte del tuo profilo Facebook contro la propria volontà o a propria insaputa)?</b>
• Si
• No
<b>8. Sei a conoscenza del caso scandalo concernente Facebook e Cambridge Analytica?</b>
• Si
• Si ma non ho approfondito l'argomento
• No
<b>9. Hai mai avuto modo di utilizzare cripto-valute quali il Bitcoin?</b>
• Si
• No
<b>10. Sei a conoscenza del fatto che Facebook sta lanciando la sua moneta virtuale, Libra?</b>
• Si
• No
<b>11. Alla luce di questa introduzione a Libra, quale minaccia per la tua privacy temeresti maggiormente dall'utilizzo da parte di Facebook dei tuoi dati nell'ambito della fruizione di Libra?</b>
• Uso scorretto delle proprie informazioni da parte di Facebook e della Libra Association nonostante gli impegni di riservatezza sottoscritti
• Rischio di incorrere in sanzioni relative alla difficoltà di regolamentazione da parte degli enti governativi e alla minore trasparenza delle transazioni

<ul style="list-style-type: none"> <li>• Rischio di minore tutela propria, come cliente, nelle transazioni, rispetto ai più comuni sistemi di pagamento e maggiore sensibilità in caso di truffe.</li> </ul>
<ul style="list-style-type: none"> <li>• Rischio di essere indirettamente danneggiati da violazioni informatiche cui potrebbero essere esposte Facebook e la Libra Association</li> </ul>
<p><b>12. Consideri positivamente o negativamente, in termini di privacy personale, il fatto che Facebook continui la sua espansione nel mondo dei dati estendendo, tramite di Libra, la sua portata a vari aspetti della vita dei suoi utenti?</b></p>
<ul style="list-style-type: none"> <li>• Positivamente</li> </ul>
<ul style="list-style-type: none"> <li>• Negativamente</li> </ul>
<p><b>13. In considerazione di questi aspetti a favore e contro la moneta Libra:</b></p> <ul style="list-style-type: none"> <li>➤ La dimensione della rete di Facebook significa che Libra potrebbe essere immediatamente e sistemicamente importante</li> <li>➤ I timori per l'adozione diffusa di Libra sono stati condivisi dai leader di tutto il mondo poiché essa potrebbe diventare una "valuta sovrana" in grado di competere con le valute statali.</li> <li>➤ Libra opererebbe in un "Vuoto" e pertanto potrebbe essere relegata a rimanere una criptovaluta privata</li> <li>➤ Le criptovalute sono spesso prese di mira dagli hacker. Nei primi otto mesi del 2018, secondo un rapporto di Ciphertrace, gli hacker hanno rubato quasi 1 miliardo di dollari dagli scambi di criptovaluta</li> </ul> <p><b>Indica la tua disponibilità alla sperimentazione di Libra:</b></p>
<ul style="list-style-type: none"> <li>• Sì</li> </ul>
<ul style="list-style-type: none"> <li>• Probabilmente sì</li> </ul>
<ul style="list-style-type: none"> <li>• No</li> </ul>
<p><b>14. Per quale tipologia di transazioni saresti maggiormente incline all'utilizzo di Libra?</b></p>
<ul style="list-style-type: none"> <li>• Shopping online</li> </ul>
<ul style="list-style-type: none"> <li>• Utilizzo per acquisti quotidiani (alternativamente a bancomat e contanti)</li> </ul>
<ul style="list-style-type: none"> <li>• Per invio di denaro a parenti e amici</li> </ul>
<ul style="list-style-type: none"> <li>• Come alternativa a carte prepagate</li> </ul>
<ul style="list-style-type: none"> <li>• Forma di investimento (analogamente al Bitcoin)</li> </ul>

## CHAPTER III – RESULTS

### **Data obtained from the questionnaires submitted to the companies.**

One hundred twenty-five out of the 200 contacted companies, thoroughly answered the submitted questionnaire.

From the results collected, these companies belonged to different types: 47 (37.6%) sole proprietorships or freelancers, 13 (10.4%) limited liability companies (S.r.l.), 16 (12.8%) Stock companies (S.p.a), 21 (16.8%) Limited partnership companies (S.a.s.), 5 (4%) Copartnerships (S.n.c.), 4 (3.2%) Cooperatives, 7 (5.6%) Consortiums, 10 (8%) Associations or other type of voluntary organizations, 2 (1.6%) were public entities.

The different types of the surveyed companies implied a different number of employees ranging from 1 to over 249: 66 companies (52.8%) had less than 10 employees, 29 companies (23.2%) had from 10 to 49 employees, 26 companies (20.8%) had from 50 to 249 employees and finally, 4 companies (3.2%) had more than 249 employees.

Concerning the main type of customers served by the interviewed firms, 25 companies (20%) traded mainly with other legal entities, 37 (29.6%) dealt with individuals, 22 (17.6%) dealt with freelancers, 14 (11.2%) with public authorities, 16 (12.8%) with subjects in the social health sector, 11 (8.8%) with subjects in the education sector or similar.

In order to get a better profile of the sampled companies, they were asked to indicate which was the main market served. Results are shown in table 3.1.

**Table 3.1 Main market served by the sampled companies**

<b>Main Market</b>	<b>Number of companies</b>	<b>%</b>
Automotive	14	11.2%
Libraries and Bookstores	6	4.8%
Construction	10	8.0%
Fashion	8	6.4%
Food & Beverage	11	8.8%
Industry & Manufacturing	9	7.2%
Public administration	10	8.0%
Retail	18	14.4%
Health	17	13.6%
IT	10	8.0%
Transport	4	3.2%
Tourism	8	6.4%

Another question was whether their output was a physical product or a service. Out of the 125 companies in the sample, 93 (74.4%) were offering a physical product while the remaining 32 (25.6%) were service companies (Tab.3.2).

**Tab. 3.2: Main output of the companies (product or service)**

<b>Main Output</b>	<b>Number of companies</b>	<b>%</b>
Product	93	74.4%
Service	32	25.6%

As far as the modality of contact with the customers, 79 (63.2%) companies operate through direct channels while 46 (36.8%) mainly operate indirectly through (e.g. online stores).

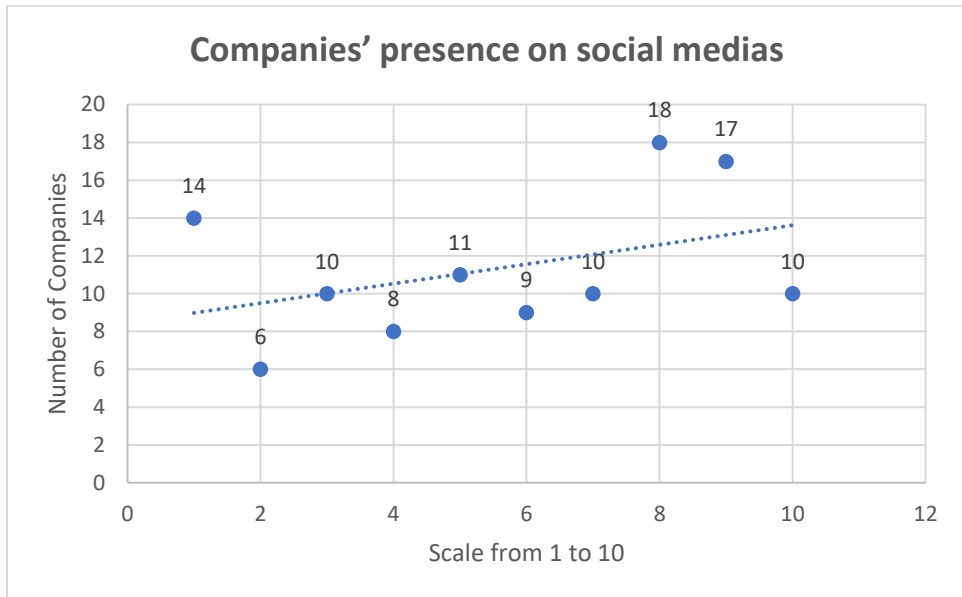
Regarding the question about the presence of the companies on social medias for marketing purposes graded on a scale from 1 to 10, the answers are reported in tab.3.3.

**Tab.3.3 Companies' degree of presence on social medias**

<b>Degree of presence from 1 to 10</b>	1	2	3	4	5	6	7	8	9	10
<b>Number of companies</b>	17	4	12	13	15	12	5	7	17	23
<b>%</b>	9.6%	10.4%	12.0%	9.6%	4.0%	5.6%	13.6%	18.4%	9.6%	10.4%

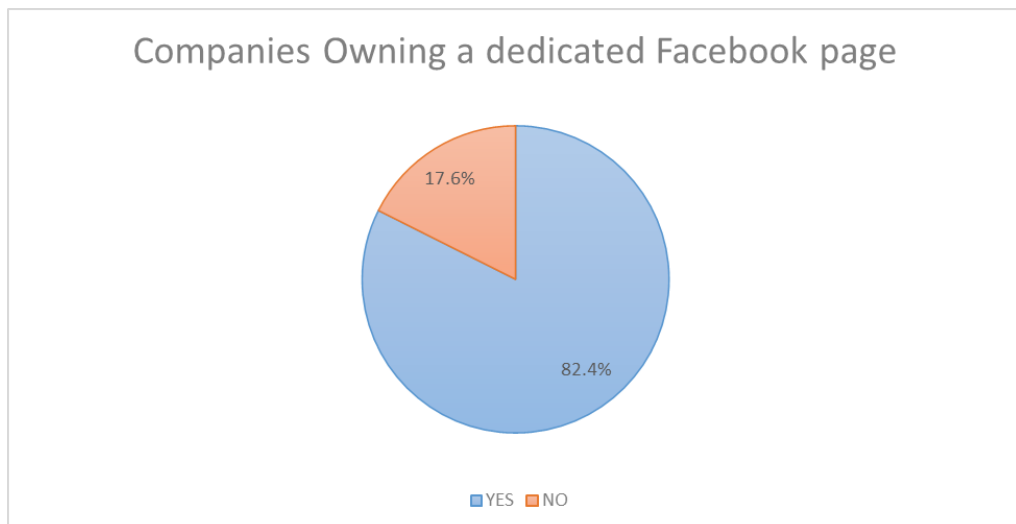
The results expressed in from of standard deviation report a positive tendency for companies towards the use of social networks ad a marketing solution.

**Figure 3.1 Companies' degree of presence on social medias**



On this line, a vast majority of the companies (82.4%) owns a Facebook page for advertising purposes.

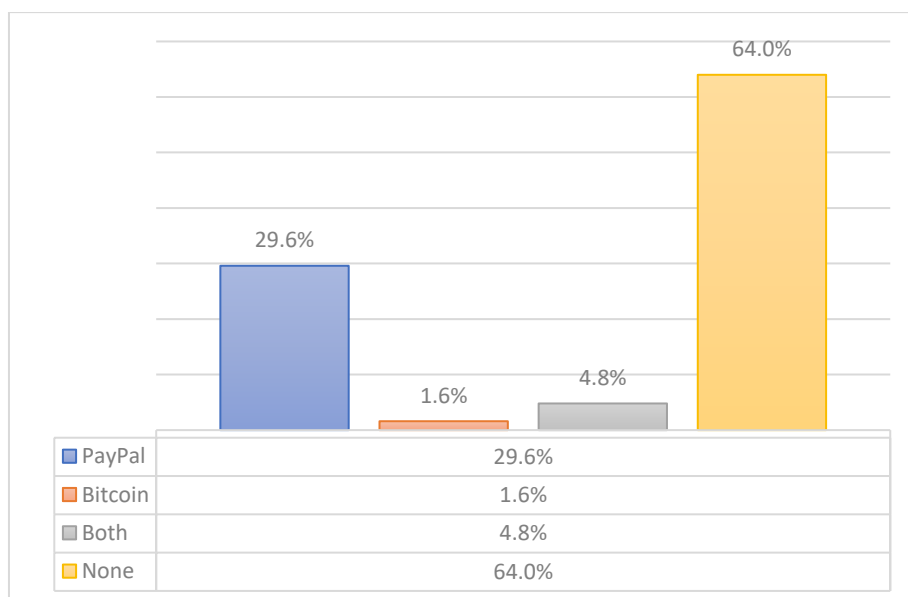
**Figure 3.2 Facebook pages diffusion among the companies**



A further question addressed concerned the internalized or externalized management of social pages for marketing purposes, 102 (81.6%) companies had this function internalized while 23 (18.4%) entrusted this function to third party companies.

The sampled firms were also asked whether they accepted Pay-pal transfers and/or Bitcoin payments by their clients or neither: the affirmative answers were 37 (29.6%) for PayPal and 8 (6.4%) for Bitcoin while 80 didn't accepted either of the two payment options.

**Fig. 3.3 Use of PayPal and Bitcoin by the sampled companies**



Notwithstanding, 51 out of 125 surveyed firms (40.8%) were actively considering the actual potential and the related opportunities that Libra could have on the company.

If we consider the use of Pay-pal Bitcoin and Libra in terms of security, the results reported Pay-pal preferred in 103 cases (82.4%), Bitcoin in 4 (3.2%) and Libra in 18 cases (14.4%).

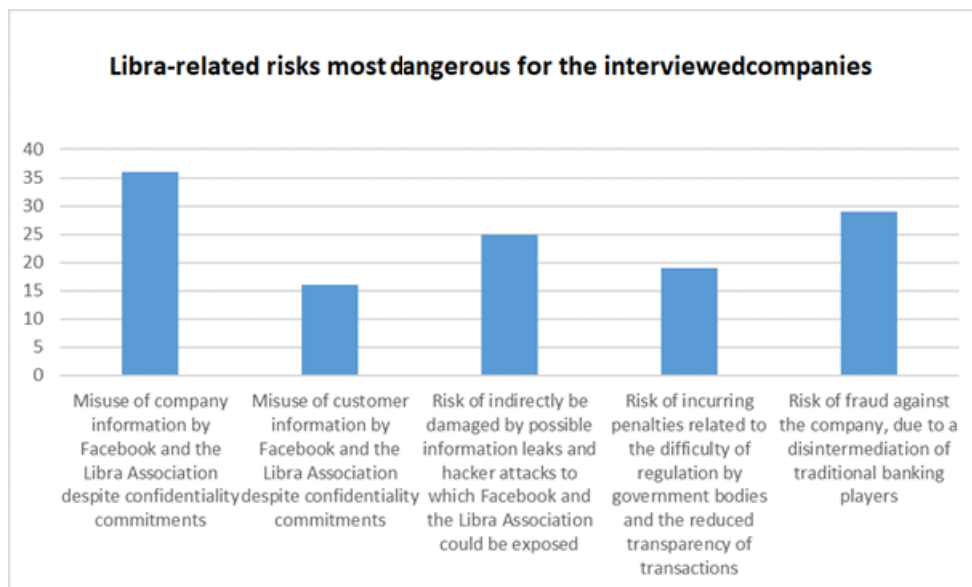
In table 3.4 and figure 3.4 are reported the answers about the threat related to Libra's adoption considered most risky by the companies out of the proposed ones (at the conditions of the Libra Association).

**Tab 3.4 Risks for the companies relatively to the use of Libra coin**

<b>Libra-related risks for the companies interviewed</b>	<b>N° of companies</b>	<b>%</b>
Misuse of company information by Facebook and the Libra Association despite confidentiality commitments	36	28.80%
Misuse of customer information by Facebook and the Libra Association despite confidentiality commitments	16	12.80%
Risk of being indirectly damaged by possible information leaks and hacker attacks to which Facebook and the Libra Association could be exposed	25	20.00%
Risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions	19	15.20%
Risk of fraud against the company, due to a disintermediation of traditional banking players	29	23.20%



**Figure 3.4 Most dangerous risks related to the use of Libra for the companies**



**Data obtained from the questionnaires submitted to the individuals**

Another questionnaire was sent the 200 individuals of whom 147 were successfully reached.

To obtain a high statistically significant sample, the surveyed individuals belonged to different, genders, age groups and different levels of education. The sample was composed as follows: 79 (54%) were males and 68 (46%) were females.

Thirty-five (24%) were minors (under 18 years old), 47 (32%) were aged from 18 to 35 years, 39 (27%) were from 36 to 60 and the remaining 26 (18%) were over 60 years old.

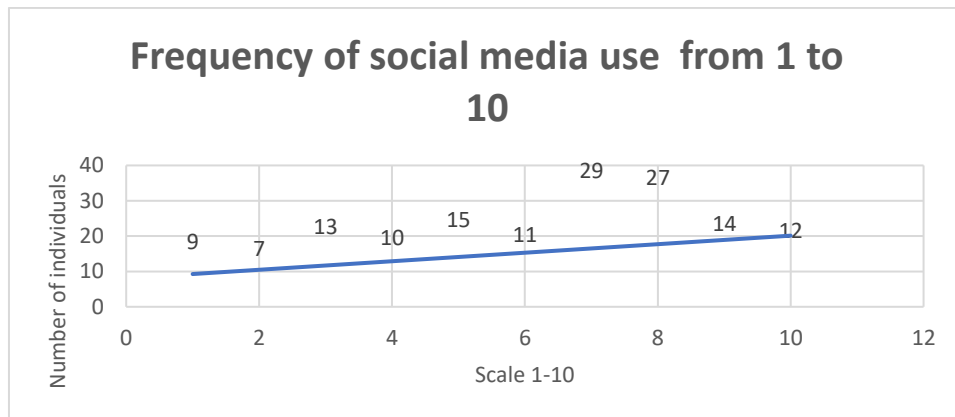
Concerning the level of education: 39 (27%) respondents had a high school diploma, 47 (32%) had a Bachelors’ degree and 61 (41%) had a master's degree.

In order to investigate their familiarity with social media, interviewees were asked to indicate how much time they spend on social networks daily, on an increasing scale from 1 to 10, whether they have a Facebook page, and if they pay proper attention to the privacy policies attached to Facebook tools and apps. Answers are reported in the table 3.5 and figures below.

**Table 3.5 Percentage of daily time spent on social media by the interviewees sized from 1 to 10**

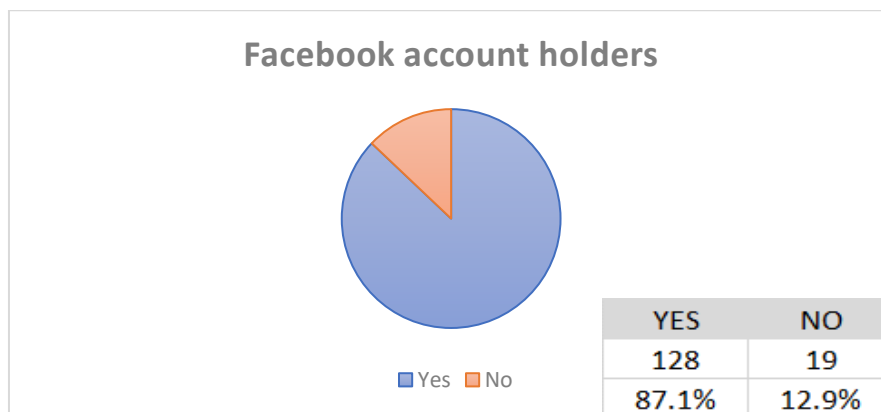
Scale of time spent	1	2	3	4	5	6	7	8	9	10
Number of individuals	9	7	13	10	15	11	29	27	14	12
%	6.1%	4.8%	8.8%	6.8%	10.2%	7.5%	19.7%	18.4%	9.5%	8.2%

**Figure 3.5 Distribution of social media use by the individuals**



The data show that a very high percentage of respondents (87.1%) use Facebook (figure 3.6)

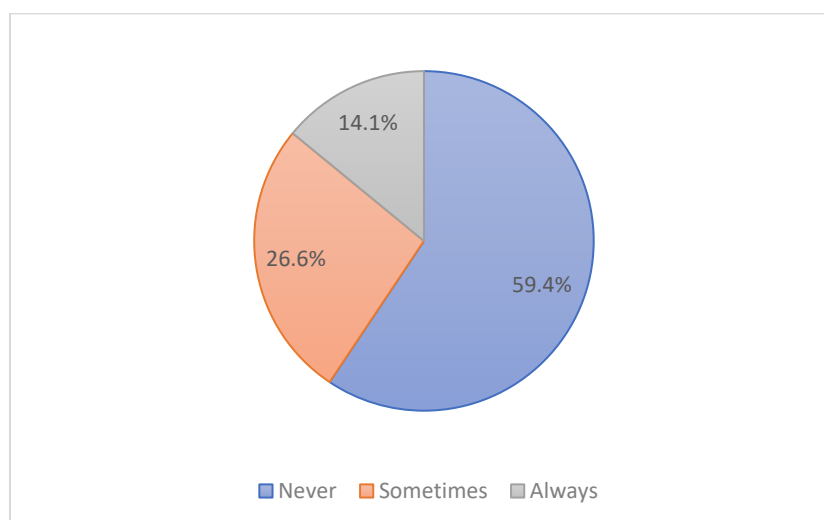
**Figure 3.6 Individuals having a Facebook page**



**Table 3.6 Level of attention paid to privacy policies Facebook tools and apps**

<b>Level of attention paid to privacy policies Facebook tools and apps</b>	<b>N° of individuals</b>	<b>%</b>
<b>Never</b>	76	59.4%
<b>Sometimes</b>	34	26.6%
<b>Always</b>	18	14.1%

**Figure 3.7 Level of attention paid to privacy policies Facebook tools and apps expressed in percentage terms**



Among the 128 Facebook users interviewed, 61 (48%) encountered privacy problems using Facebook like the publication of content in their Facebook profile without their knowledge or consent.

When questioned whether they were aware of the Cambridge Analytica scandal concerning the abuse of Facebook users' data, 104 individuals out of the 147 responders

answered affirmatively; among which, 83 people only heard of the case without a deeper knowledge of the subject.

From the questionnaire data results that only 28 individuals (19%) out of 147 had a direct experience with cryptocurrencies such as Bitcoin.

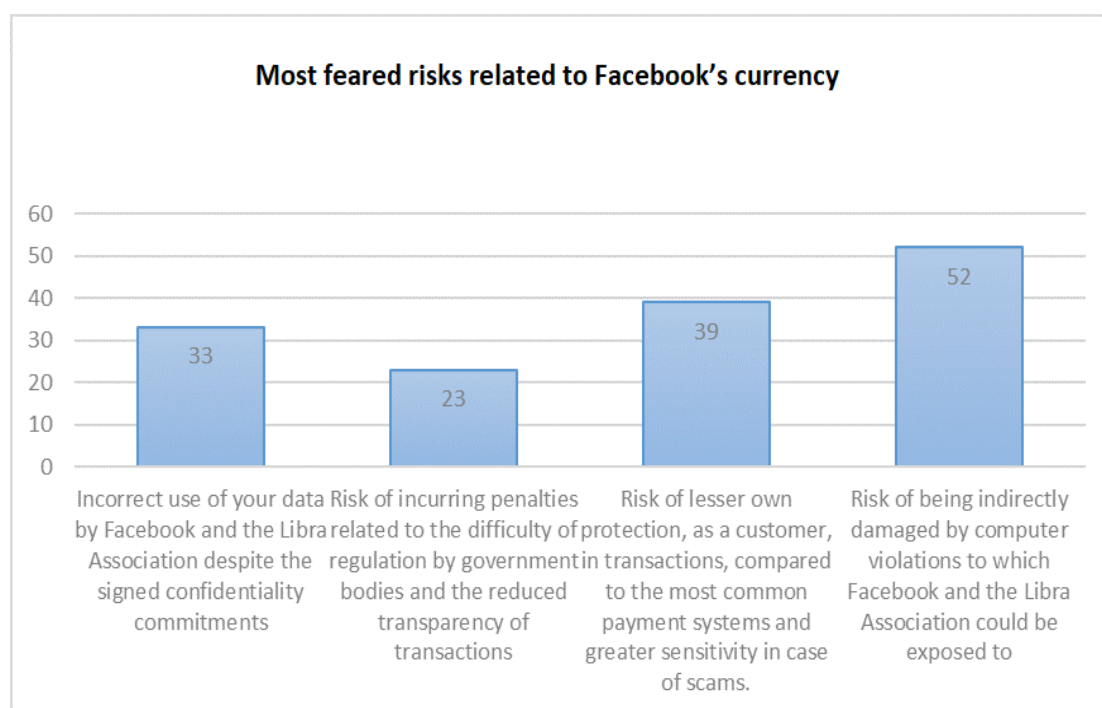
On the other hand, users who, at the time of the questionnaire, already knew what Libra was, were 131 (89.1%) out of 147.

At this point the interviewees were presented with a brief introduction to Libra and how it is supposed to work in order to ask them which risk, among the proposed options, they would fear the most by using Facebook's cryptocurrency. Results collected are reported in Table 3.7 and figure 3.8.

**Table 3.7 Privacy risks most feared by potential Libra users interviewed**

<b>Most feared risks related to Facebook's currency</b>	<b>N° of individuals</b>	<b>%</b>
Incorrect use of your data by Facebook and the Libra Association despite the signed confidentiality commitments	33	22.4%
Risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions	23	15.6%
Risk of lesser own protection, as a customer, in transactions, compared to the most common payment systems and greater sensitivity in case of scams.	39	26.5%
Risk of being indirectly damaged by computer violations to which Facebook and the Libra Association could be exposed to	52	35.4%

**Figure 3.8 Most feared risk driving from Libra use for the individuals**



To a further question on how the interviewees perceived the announcement of the imminent launch of Libra, in terms of personal privacy, and the fact that Facebook continues its expansion into the world of data by extending its reach to various aspects of user's life, this perception was negative in 126 case (85.7%).

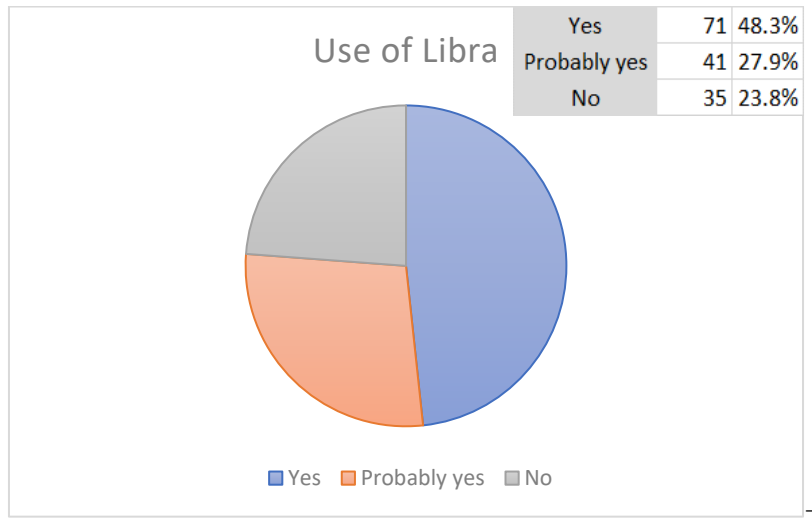
The surveyed were then asked to express a favorable or contrary opinion about the following arguments concerning Libra:

- The size of Facebook's network means it could be immediately and systemically important
- Fears around widespread adoption of Libra have been shared by leaders around the globe as Libra could become a "sovereign currency" that could compete with state currencies.
- Libra would operate in a regulatory "Void" so it could be restricted to be a private cryptocurrency

- Cryptocurrencies are frequently targeted by hackers. In the first eight months of 2018, according to a report of CipherTrace, hackers stole nearly \$1 billion from cryptocurrency exchanges [15]

Finally, they were asked whether they would still be inclined to use Libra and 71 people answered affirmatively, 41 answered “probably yes” and 35 people answered negatively.

**Figure 3.9 Propensity to the potential use of Libra**



In table 3.8 are reported the main uses of Libra considerate by the sampled individuals

**Table 3.8 Libra’s uses interviewees are most propense to**

Main proposed uses	Number of individuals	%
Online shopping	37	25.2%
Use for daily purchases (alternative to ATM or cash)	24	16.3%
Sending money to relatives and friends	26	17.7%
Alternative to prepaid cards	29	19.7%
Form of investment	31	21.1%

## CHAPTER IV - DISCUSSION

### 4.1 Analysis of the data and inherent implications

#### About the companies

The data collected from majority of the sampled companies report a positive tendency to the use of social networks as a marketing solution (Figure 3.1). Only 17% of the interviewed companies do not own social pages or, despite having them, do not rely on them as an effective marketing solution.

On this line, vast majority of the questioned companies owns a Facebook page for advertising purposes to testify their familiarity with online environments and platforms

This positive trend towards social media use for marketing, in particular, the diffusion of company Facebook pages among the sample, could be translated, also into a propensity to adopt digital systems in different business areas, including electronic payments such as PayPal.

The familiarity with social medias of the companies in this sample is related to the fact that 30% of them declared to accept PayPal payments

This percentage rate concerning PayPal seems inconsistent with the data from Enlyft and ISTAT databases, [16] reporting only the 0.1% of the Italian companies using PayPal as a payment system. The possible explanation may be that the data from the questionnaire are deeply influenced by the fact that interviewed companies had a specific reference market more than others and that they were selling a physical product more than a service.

The scarce diffusion of PayPal use among Italian companies, however, is linked to the data collected in the questionnaire concerning the adoption of Bitcoin. In fact, only 6% of the sampled firms accepts payments in this cryptocurrency.

The low propensity to adopt Bitcoin could prove to be a significant advantage for Libra that would therefore face a less competitive market.

When asked about Libra in terms of possible propensity to adopt it considering the consequences and opportunities related to Libra including its possible adoption as a payment option for their customers, the sampled firms answered affirmatively up to 40% of cases.

Such percentage is significantly higher compared to the one of actual diffusion of PayPal and Bitcoin.

Reasons are to be sought in the ambitious vision behind Libra project aiming, firstly, to “foster financial inclusion by providing better access to financial services and capital, especially in less developed countries” but also to enable “huge efficiency gains in payments in developed economies, which would trigger additional economic growth globally” as stated by Prof. Dr. Volker Brühl, Managing Director of the Center for Financial Studies in the article “Libra – A Differentiated View on Facebook’s Virtual Currency Project”.**[17]**

When interviewees were asked about the safety guarantees, PayPal is still considered as the safest option compared to Libra and Bitcoin.

Despite Libra has the potential to improve Financial Inclusion and Global Financial Stability, it certainly suffers from Facebook's troubled past with data-disclosure scandals (i.e.: Cambridge Analytica scandal) in addition to endogenous safety and financial problems.

Firms reluctance to consider Libra as a viable payment currency mainly depends on their feared risk of fraud due to the disintermediation of traditional banking players in the Libra payment operations. Another fear is represented by the potential misuse of users’ information by Facebook and the Libra Association, violating the confidentiality commitments.

Those concerns can be understood when considered that, up to date, Facebook has not yet declared how it is planning to address numerous issues, such as, to what extents, Calibra, service, would offer fraud protection and insurance reimbursements and, how the Libra Association will manage to face regulatory scrutiny. **[18]**



Solutions in this matter are mandatory for Libra in order not to end like the Bitcoin, currently little-used in payments or commerce because of its extreme volatility and because it remains still largely unregulated. Not having provided answers to these questions justifies the failed launch of Libra, planned for this spring.

Notwithstanding, Facebook does not give up on Libra challenge and it is trying to circumvent some of the problems mentioned by progressively redesigning the whole Libra project. As said by Christian Catalini, head economist at Calibra: "We're retaining the construct of a multi-currency Libra, but it's fundamentally changed, streamlined and simplified relative to the original one". [19]

A similar solution while on one hand, would allow Libra to take off, on the other, it could make Facebook currency less attractive for business users.

#### **About the individuals:**

Results collected from the questionnaire addressed to individuals show a significant use of social media. More than 50% of the interviewees declared an assiduous average daily use of social networks (from 7 to 10 on the proposed scale). In the study group, the younger the age of the respondents, the more frequent is the use of these media.

Facebook platform proved to be the most frequently used since almost 90% of the interviewees have at least one active Facebook profile. This evidence is consistent with the data concerning the ranking of Global social networks reporting Facebook as the world most used platform with over 2.49 billion active users (February 2020).

Despite the average person spends more than 3 hours per day surfing social media pages, it is generally unusual to pay due attention to privacy policies submitted whether by social platforms themselves with particular reference to Facebook or by third party social media app developers. To confirm this, 86% of the asked people with a Facebook account, never or only sometimes reads the policies submitted them.

Reason for that is probably related to users' poor information on Facebook's troubled past with data-disclosure scandals. This is in contrast with the significative percentage of cases of privacy violations experienced by sampled individuals. They reported issues

like the publication of content of posts for advertising purposes without specific consent. Regarding Facebook platform, 70% of sampled users was familiar with the Cambridge Analytica scandal. Despite this, only 14% of them actually delved into the topic to find what are the threats and consequences of this incongruous use. Such risks go far beyond the publication of an unauthorized marketing post, like, in example, third party establishment and sale of huge archives of users data, comprehending information on the place where they live, their interests, photographs, public status updates and posts. [21]

This might be one of the main Libra concerns, since the data protection regulators, based in the UK, US, Canada, Australia, Burkina Faso, Albania and the EU, call on the Libra Association to explain how personal data will be used “to allow users to provide specific and informed consent”. The regulators are seeking to find out if the partnership plans to use data for profiling purposes.

To corroborate this, Oscar Williams in his article “ICO urges Facebook to explain how it will protect Libra coin data” stated that there is a warning about Facebook’s power as a platform as it means that, if Libra coin goes live, it may instantly become the custodian of millions of people’s personal information. This combination of vast reserves of personal information with financial information and cryptocurrency amplifies on of the privacy concerns. [22]

Using Libra means trusting Facebook and it is hard to sell in 2020. Indeed, the problem of trusting affects all cryptocurrencies. Satoshi Nakamoto in a first public announcement of its Bitcoin system wrote: “The root problem with all cryptocurrencies is all the trust that is required to make them work”

Ten years ago, with Bitcoin, people were given the ability to digitally transact value without the need for a government to manage the financial system. Bitcoin introduction, therefore, marked the beginning of the separation of money and state but a change of such a magnitude takes time.

This is confirmed by my survey data since only 19% percent of the sample had ever conducted a Bitcoin transaction.

Moreover, another limit of Bitcoin is the need of consistent internet access to use them, and that the cost of using it in terms of phone data and miner fees often outweighs any benefits of using the currency. This is where Facebook Libra has a distinct advantage.

In this regard, Facebook has right away promoted that, while many of Libra technical aspect are close to Bitcoin, on the other hand, this currency drastically breaks from the crypto model in important ways. For many people around the world, Facebook is the only free way they can access the internet and, subsequently, any non-cash-based financial system.

If Libra was launched, this stable coin would be pegged to a basket of fiat currencies including the USD and the Euro, meaning that it would fluctuate less than traditional crypto, removing much of the currency risk that can be a deterrent to adoption.

Additionally, Libra users could be able to transact in Libra across the suite of Facebook's social platforms, including Messenger, WhatsApp, and Instagram.

This is one of the points emerging from Facebook's advertising campaign for the intentional launch of Libra.

The effectiveness of this publicity is evident also in the results collected as 89.1% of the interviewees had already knew Libra coin.

Despite users are aware of Libra, this doesn't relate to the fact that they actually know how it will work. This is a crucial factor because Libra's success will depend largely on its users' understanding of how it works; "Consumers who can adequately understand and formulate the exchange rate, much like with foreign currencies, are likely to keep spending with cryptocurrency in check. Consumers will need to know how currency exchange works to understand that when they cash out Libra, it could be worth more or less than when they first purchased Libra, depending on how its value has fluctuated", as said Ben Smith, founder of Cove Financial Planning in Milwaukee, Wis. [23].

It comes back to the question of trust. As for the companies, sampled users do not identify a specific threat over the others deriving from Libra potential use even though the risk of hacker violations involving money and personal data, is certainly the most diffused one.

To support this data, there is a recent case of platform violation against Facebook user data. Last February 27, Facebook filed a federal lawsuit in California court against OneAudience, a New Jersey-based data analytics company that improperly accessed and collected user data from Facebook and other social media companies by paying app developers to install a malicious Software Development Kit (SDK) in their apps.

Episodes like this do not see Facebook as directly responsible but certainly suggest that Facebook struggles to guarantee its users while extending its reach into the world of data to their bank account information and even their money. This drawback is perceived by 85.7% of the individuals in this study.

Despite the numerous scandals affecting Facebook and the inherently negative perception by the interviewees, in the case Libra would be launched, 48.3% of the sample declared to be willing to try it and 27.9% would probably do so. On-line shopping is the prevalent use that respondents would reserve to Libra followed by as a form of investment.

This may be explained as Libra is perceived as a simple and stable global payment system with greater efficiency (little or no transaction costs), decentralization and huge accessibility even for low income and unbanked people. This suggests that Libra is considered less like a cryptocurrency and more as a private money.

#### **4.2 Limits of the study**

The results reported herein, as with majority of the studies, should be considered in the light of some limitations. The sampling of the interviewees could be affected by the limited geographical distribution of both the sampled companies and individuals. This is because the geographical setting of the interviewees is an element of great cultural and economic influence in determining their propensity towards the adoption of innovations like Libra and their ability to evaluate the potential related potential risks. Another limitation concerns the sample volume. The sample volume although being heterogeneous was numerically limited due to the availability of the respondents to join this research. This could have influenced the applicability of the model on a large scale<sup>1</sup>. Finally, the need to choose questions for the surveys that were relatively generic,

understandable and that, above all, fostered the respondents to join the study without any risk of privacy violation.

#### **4.3 Concluding Remarks: Is Libra a “dead racehorse” for Facebook?**

This study confirms the great diffusion of social medias and particularly, of Facebook, which are increasingly used for commercial aims too and no longer only for personal and entertainment purposes. This technology has given people tools to connect and communicate. But while people can send each other text videos and photos in many cases they cannot easily move value between one another.

With a pre-existing community on Facebook of over 2.38 billion monthly active users Facebook, Libra will be embedded in Facebook apps like Messenger and WhatsApp which means Facebook products will be the primary way for people experience it.

Despite its vast potential, Facebook has been forced to postpone Libra’s planned launch date of 2020 because it has garnered a severe scrutiny from central banks regulators, law makers and customer protection groups.

According to David Marcus’ hearing Before the United States Senate Committee on Banking, Housing, and Urban Affairs stated, the Libra Association is working with policy makers and regulators to ensure that Libra will comply with all applicable legal and regulatory requirements ensuring its compliance with anti-money-laundering and combating terrorism financing. [9]

To strengthen this skepticism, in a 2018 survey by personal-finance website, MagnifyMoney.com, 91% of respondents said they would not trust Facebook to handle their payments and as it stands. Only 21% have reported using messenger payments [24].

Libra Association is committed to work with regulators as they explore the application of relevant laws to distributed ledger technology. Libra transfers would be guaranteed by its Blockchain and would happen in similar way as for existing blockchains.

According to Facebook intentions, users would be granted privacy protection from the fact that Calibra will comply with the Bank Secrecy Act and will incorporate KYC and

AML/CFT methodologies used around the world, including those focused on customer identification and verification, and risk-based customer due diligence, while developing and applying technologies such as advanced machine learning to enhance transaction monitoring, and suspicious activity reporting. Calibra effort will be commensurate with its risk profile based on several factors, such as its features, customer profiles, geographies, and transaction volumes.

However, these are instruments more aimed to protect Facebook and Governments that Libra users, when violations of users' own privacy are one of the main reasons that would discourage the use of Libra.

Potential solution on this regards would be the use of Interactive Cooperation Framework API (API is a computing interface which defines interactions between multiple software intermediaries).

The ICF (API) is designed to be integrated with financial software applications to actively protect crypto assets from malicious threats. It enables crypto service providers to query the TRDB as well as its whitelists and blacklists — in real time.

Before completing a transaction, the ICF (API) enables a financial application to query Sentinel Protocol's Threat Reputation Database (TRDB) and check whether a specific crypto wallet address, URL, domain, or Telegram ID is safe or not. Within milliseconds, the TRDB sends a response. Depending on the type of response, a pending transaction can be immediately rejected and terminated, an alert or warning could be launched, or the transaction could be allowed in case the alert level is low.

Facebook has also to face quite a few resistances coming from central banks, perplexed by the difficulty of a supranational currency like Libra, that would move in an area that is still largely deregulated.

The launch of Libra would offer people a choice. Nowadays, people are forced to use their country's fiat currency, even when there is a massive disadvantage in it. The number of people taking advantage of bitcoin will certainly grow over time, but in a shorter term, Libra would offer a wider audience a refuge from inflation and its devastating consequences like in many middle and low-income countries where even a token promoted by Facebook is far a better option than a country's fiat currency.

Despite its potential benefits, Facebook's intention not to launch Libra, before getting the absolute go-ahead from regulators, is not appropriate. Facebook should not consider halting Libra's development any further if so, it would risk of "beating a dead racehorse".

To launch Libra, Facebook should not attempt to satisfy all the concerns or demands brought by central banks, regulators, law makers, and tax authorities worldwide because this is both impracticable and implausible task to accomplish. A decade has passed since Bitcoin's debut in January 2009, and still many countries worldwide do not have any regulation dealing with cryptocurrencies.

What seems of primary importance for Facebook is the hot issue of the privacy protection related to the use of Libra. The study data suggest that there is little to no attention by social media users in reading privacy policies when they consent to the use of their personal data. However, this cannot constitute a reason for Facebook not to guarantee the adequate protection of more sensitive data such as the banking information of its users that would derive from the use of Libra.

Protecting consumers and ensuring people's privacy should be one of the Libra Association's top priorities. The regulators warn that Facebook power as a platform means that once the Libra coin were to become reality it might "instantly become the custodian of millions of people personal information. This combination of large reserve of personal data with financial information is a crucial concern.

In a letter signed by seven of the world's most powerful privacy regulators, Facebook has been urged to disclosure its efforts to protect users' data. This letter states: "many of us in the regulatory community have had to address previous episodes of Facebook handling of people information has not met the expectations of regulators or their own users.

As it stands, any process of data collection, storage and use can easily lead to the leakage of personal information.

At present, many companies rely on the fact that data are processed anonymously, that are encrypted as soon as collected and only then are handled. However, is a matter of

fact that the protection of privacy cannot be effectively achieved just through data encryption.

Additionally, the risk of information leakage is worsened by the lack of self-protection awareness among users, as confirmed by my results indicating that majority of the interviewees paid scarce to no attention when signing privacy policies.

Strengthening supervision of data information is extremely important is necessary to reinforce data management systems to anonymously protect social media information ensuring that personal data security is not misused.

In sake of privacy protection, the Libra Association will mainly rely on the effectiveness of its blockchain because the transactions would include only the sender and receiver's public addresses, the transaction amount, and the timestamp. No other information will be visible. Libra Association would not separately hold any personal data on people who use the blockchain, no matter how it otherwise could be collected, and would not run any infrastructure. As a result, the Association could not monetize data on the blockchain.

Swiss Federal Data Protection and Information Commissioner (FDPIC) will be the Libra Association's main data and privacy regulator.

As a further effort last January, Mark Zuckerberg declared that one of Facebook main goals for the next decade will be to build much stronger privacy protections for everyone on the platform.

To do so, he announced "Off-Facebook Activity tool" to allow users to see a summary of that information and clear it from their account if they want to, in order to get a new level of transparency and control.

Moreover, Facebook has released the "Login Notifications". to help users keep track of their activity concerning "Facebook Login", the function that allows Facebook users to sign-in to other apps and services account like games and streaming platforms, using their social account. These notifications alert the user when their account is used to access to third-party apps and to take action whenever the login is unauthorized.



Whatever Libra's fate may be, whether it will be launched or will be abandoned, Facebook's project has nevertheless led to the necessity of rethinking the financial ecosystem. The meaning of this revolution is represented by the first lines of Libra's white paper citing that the advent of the Internet and mobile broadband has made available to billions of people the possibility to access information and services that were once "exclusive". With 85% of people living in cell-connected areas, the introduction of a digital currency like Libra would have the potential to transform massively the way to transact by making trade and financial services accessible even through the cheapest smartphones on the market in each part of the world. Technology companies and financial institutions should work together to resolve all concerns raised for Libra. This could lead to a substantial transformation of the current financial ecosystem giving the opportunity to 1.7 billion people who do not yet have access to basic financial services. In a current reality where "people with less money pay more for financial services" this would also be an opportunity to make the cost of these services fairer for banks too.

## REFERENCES

- [1] Till Antonio Mahler, “’98 | Wei Dai — Who dat?”, www.medium.com, Oct 27, 2018, <https://medium.com/blockwhat/98-wei-dai-who-dat-f93c4e4bcfc9>
- [2] loki.network, “CENTRALIZED VS DECENTRALIZED NETWORKS”, loki.network, <https://loki.network/2019/12/05/centralized-vs-decentralized-networks/>
- [3] Louay Chebib, The History of Encryption, Chapter 5 / Lesson 2, www.study.com
- [4] Damien Cosset, “Blockchain: What is Mining?”, dev.to, Jan 05, 2018 <https://dev.to/damcosset/blockchain-what-is-mining-2eod>,
- [5] John Edwards, “Bitcoin Price History”, www.investopedia.com, Apr 11, 2020 <https://www.investopedia.com/articles/forex/121815/bitcoins-price-history.asp> ,
- [6] Libra Association, Introduction to Libra. White paper, from the Libra Association members, libra.org, August 12, 2019 <https://libra.org/en-US/white-paper/>
- [7] Libra.org, “Introducing Libra: a simple global currency and financial infrastructure that can empower billions of people”, June 23, 2019 [https://libra.org/en-US/wp-content/uploads/sites/23/2019/06/IntroducingLibra\\_en\\_US.pdf](https://libra.org/en-US/wp-content/uploads/sites/23/2019/06/IntroducingLibra_en_US.pdf)
- [8] Christian Catalini et al., The Libra Reserve, 15.08.2019
- [9] Senate Committee on Banking, Housing and Urban Affairs: Hearing Before the United States Senate Committee on Banking, Housing, and Urban Affairs - Testimony of David Marcus,  
<https://www.banking.senate.gov/imo/media/doc/MarcusTestimony:16-19.pdf>,  
August 12, 2019

- [10] Jameson Lopp: “How Will Facebook's Libra "Blockchain" Really Work?”, onezero.medium.com, August 18, 2019 <https://onezero.medium.com/thoughts-on-libra-blockchain-49b8f6c26372>
- [11] Bill Maurer, Daniel Tischer “Facebook’s Libra: it’s not the ‘crypto’ that’s the issue, it’s the organisation behind it”, theconversation.com, August 6, 2019 <https://theconversation.com/facebooks-libra-its-not-the-crypto-thats-the-issue-its-the-organisation-behind-it-121223>
- [12] Panos Mourdoukoutas, “Libra Could Make Or Break Bitcoin”, /www.forbes.com, Jun 22, 2019 <https://www.forbes.com/sites/panosmourdoukoutas/2019/06/22/libra-could-make-or-break-bitcoin/#2d2b0b6e27aa>
- [13] Chamil W. Senarathne, “Possible impact of Facebook’s Libra on volatility of Bitcoin: Evidence from initial coin offer funding data”, Sciendo, October 30, 2019
- [14] Taskinsoy, John, “Is Facebook’s Libra Project Already a Miscarriage?” In SSRN Electronic Journal, August, 2019
- [14] European Commission, “What is an SME? | Internal Market, Industry, Entrepreneurship and SMEs” ec.europa.eu [https://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition\\_en](https://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en)
- [15] Gertrude Chavez-Dreyfuss, “Cryptocurrency theft hits nearly \$1 billion in first nine months: report”, [www.reuters.com](http://www.reuters.com), October 10, 2018 <https://www.reuters.com/article/us-crypto-currency-crime/cryptocurrency-theft-hits-nearly-1-billion-in-first-nine-months-report-idUSKCN1MK1J2>
- [16] Enlyft.com, “Companies using PayPal” <https://enlyft.com/tech/products/paypal>
- [17] Prof. Dr. Volker Brühl, “Libra – A Differentiated View on Facebook’s Virtual Currency Project”, www.intereconomics.eu, 2020

<https://www.intereconomics.eu/contents/year/2020/number/1/article/libra-a-differentiated-view-on-facebook-s-virtual-currency-project.html>

[18] Matthew De Silva, “Facebook is beating a dead horse with Libra”, finance.yahoo.com, October 24, 2019 <https://finance.yahoo.com/news/facebook-beating-dead-horse-libra-080057346.html>

[19] Brenna Hughes Neghaiwi, Tom Wilson, Reuters, “Facebook's Libra cryptocurrency gets revamp in response to backlash”, www.reuters.com, April 16, 2020 <https://www.reuters.com/article/us-facebook-cryptocurrency/facebooks-libra-cryptocurrency-gets-revamp-in-response-to-backlash-idUSKCN21Y277>

[20] www.statista.com “Most popular social networks worldwide as of April 2020, ranked by number of active users”, <https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/>

[21] Emanuele Menietti, “Il caso Cambridge Analytica, spiegato bene”, Il Post, March 19, 2018

[22] Oscar Williams “ICO urges Facebook to explain how it will protect Libra coin data” Tech.newstateman.com, August 5, 2019

[23] Jacob Passy, “Why Facebook’s Libra coin could become a big pain in your wallet” www.marketwatch.com, Oct. 24, 2019 <https://www.marketwatch.com/story/facebooks-libra-coin-could-become-a-big-pain-in-the-wallet-for-consumers-2019-06-19>,

[24] Brittney Laryea, “Survey: People Are More Concerned About Equifax Data Breach Than Facebook Scandal” www.magnifymoney.com, April 2, 2018 [https://www.magnifymoney.com/blog/featured/survey-people-concerned-equifax-data-breach-facebook-scandal1183653132/?mod=article\\_inline](https://www.magnifymoney.com/blog/featured/survey-people-concerned-equifax-data-breach-facebook-scandal1183653132/?mod=article_inline)

## **ABSTRACT**

Technological progress promoted numerous upheavals in recent decades. Smart devices, social-networks, virtual assistants, augmented reality are just few of the numerous innovations. Internet has revolutionized commerce. Growth in online sales has been the driver of the evolution of payment systems. Examples range from Pay-pal launched in 1999 as the first reliable money transfer system, to Apple Pay, introduced in 2014 with the aim of replacing the magnetic stripe card payment process.

The introduction of innovative payment and currency transmission systems represented one of the most salient opportunities led to the creation of virtual currencies, also known as cryptocurrencies.

In this matter, the social-media giant, Facebook announced the launch a new global cryptocurrency called Libra aiming to redesign the concept surrounding money by freeing it form exclusive governmental influence and cheapening monetary transactions around the world.

Libra will be purchasable with fiat currencies that will also back it to limit its volatility. It will be usable through a digital wallet, Calibra, integrated in Facebook apps like Whatsapp and Messenger. It will rely on a specific blockchain technology to validate money transactions between users. The Libra Association, a conglomerate of several tech multinationals, will be the administrative core of this digital currency.

Libra could represent the most recent and innovative result of technological evolution of payment transactions. However, right from its announcement, this project has been at the center of some serious criticisms and rejection, forcing Facebook to postpone the launch until now.

### **Aim of the study**

This thesis analyze, whether Libra can reach the target markets, its main benefits and downsides, its consequences for national monetary policies, financial stability and regulation and, most importantly, what are the risks of a private global currency for the user's privacy and how they will be protected.

After a general overview of cryptocurrencies and particularly of the Bitcoin, Libra has been presented in its key project elements, its Libra Blockchain, its way of executing transactions, its governance along with its market potential and applications.

The aim of this study was to assess whether Libra, if it will ever be launched, would be worth and to what extent and in which way its users, both companies and individuals, would be more prone to spend it. It has been also evaluated the users' level of awareness about the risks related to the use of Facebook and Libra relating to fraud and money laundering.

The elements acquired could be included as part of the concerns that have so far kept Facebook from launching Libra and could eventually lead this project to a dead end. The potential applications of advanced machine learning to enhance Libra transaction monitoring, and suspicious activity reporting has also been considered.

Finally, it has been assessed the level of awareness of Facebook's disclosure scandals and of its privacy issues by its current users as they could have repercussions on the possible use of Libra, according to their propension to face the associated risks of violations or data abuse.

Secondary end points were to estimate how the use of social media is widespread with particular attention to Facebook by both companies and customers and how companies and individuals are likely to use Libra.

## **Materials and methods**

The study has been conducted through two multiple choice questionnaires one addressed to companies of different sizes and operating in the major businesses and the other addressed to individuals, of different age and with different levels of education, aiming to collect the widest range of possible results.

Each of the questionnaires has been submitted to 200 subjects, within 6 months from October 2019 to March 2020 in Italian or English depending on the interlocutors.

Both questionnaires have been made to achieve, in first instance, data over the level of familiarity with social networks, whether for personal use or for marketing purposes.

Subsequently, the questions have been focused on the level of acquaintance with the concept of cryptocurrencies in general and Bitcoin. In each questionnaire a short introduction to Libra and its functioning has been followed by questions about this coin to investigate the propensity of the interviewees to its future use considered its potential risks.

### ***Questionnaire addressed the companies***

The questionnaire to the companies firstly aimed to collect data concerning the legal form, the composition and territorial distribution of each company in order to categorize them and gain data for a statistical forecast of Libra potential in the business environment

The second section of the questionnaire had the purpose to assess the companies propension towards marketing through social media in order to assess their general propensity towards experimenting innovative means to run their business

The last section of this survey aimed to know if the companies already use innovative means of payment such as Paypal and cryptocurrencies (Bitcoin). Subsequently, they have been specifically questioned about Libra to investigate:

- If they already considered the consequences and opportunities of the launch of Libra for the company.
- What was companies' propensity in the adoption between Libra, PayPal and Bitcoin as payment methods from a security point of view
- Which of the following risks the company was most afraid of incurring, in relation to the possible adoption and use of Libra:
  1. Misuse of company and their customer information by Facebook and the Libra Association despite confidentiality commitments.
  2. Risk of being indirectly damaged by possible information leaks and hacker attacks to which Facebook and the Libra Association could be exposed.
  3. Risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transaction
  4. Risk of fraud against the company, due to a disintermediation of traditional banking players

This section aimed to determine the level of awareness of cryptocurrencies in general and more specifically Libra's imminent launch along with the propension to its

adoption, within the business permits, and the risks feared by the companies about the use of this new cryptocurrency.

### **Questionnaire addressed to the individuals**

The first section contained questions concerning age, gender and education level of the interviewees to establish variety in the sample and assess the influence of those factors on the results of the latter sections of the questionnaire.

The second section included questions aimed to identify the frequency of use of Social medias by the interviewees, if they had a Facebook account and the level of care they reserved to the privacy policies related to its use. It was also surveyed if any privacy problem on Facebook had ever been encountered and the level of acquaintance with the past Privacy scandals involving Facebook.

The last part of the questionnaire was intended to investigate the respondents' familiarity with the use of cryptocurrencies (Bitcoin) and with concept of Libra, including the risks associated to the latter. Thus, the interviewees were asked to indicate if they had ever used any cryptocurrency in transaction and if they knew that Facebook was planning to release its digital currency named Libra. After a brief presentation of Libra, the last questions focused on the most feared risks of this virtual coin among the following:

- Incorrect use of your data by Facebook and the Libra Association despite the signed confidentiality commitments
- Risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions.
- Risk of lack of personal protection in transactions, compared to the most common payment systems and greater sensitivity in case of scams.
- Risk of being indirectly damaged by computer violations to which Facebook and the Libra Association could be exposed to.

Interviewees were asked whether they considered positively or negatively the fact that Facebook continues its expansion in the world of data extending, through Libra, to



various aspects of the users' life. The respondents were also questioned on the following aspects related to Libra:

The size of Facebook's network means Libra could be immediately and systemically important

The globally fears on a widespread adoption of Libra which could become a "sovereign currency" that could compete with state currencies.

- The operating way of Libra in a regulatory "Void" so it could be restricted to be a private cryptocurrency.
- The risk of stolen that Libra might share with Cryptocurrencies which are frequently targeted by hackers (in the first eight months of 2018, hackers stole nearly \$1 billion from cryptocurrency exchanges).

Finally, the subjects were interviewed on whether they would have been still inclined to the use Libra and about the options they most likely would use Libra for among: Online shopping, Use for daily purchases (alternative to ATM or cash), Sending money to relatives and friends, Alternative to prepaid cards, Form of investment.

## **Results**

### ***Companies results***

One hundred twenty-five out of the 200 contacted companies, thoroughly answered the submitted questionnaire. Forty-seven (37.6%) were sole proprietorships or freelancers, 13 (10.4%) limited liability companies (S.r.l.), 16 (12.8%) Stock companies (S.p.a), 21 (16.8%) Limited partnership companies (S.a.s.), 5 (4%) Copartnerships (S.n.c.), 4 (3.2%) Cooperatives, 7 (5.6%) Consortiums, 10 (8%) Associations or other type of voluntary organizations, 2 (1.6%) were public entities.

The surveyed companies operate in almost the complete market spectrum, offering for the 74.4% a physical product as output.

In the sample, 63.2% of companies operate through direct contact with clients while the 36.8% operate indirectly (e.g. online stores). The presence of the companies on social medias for marketing purposes mainly ranged from 5 to 10 in a scale from 1 (no presence) to 10 (very high presence). This means that majority of the sampled companies has a positive tendency to use social networks as a marketing solution and most of them own a Facebook page for advertising purposes.

This positive trend towards social media and Facebook use for marketing does not translate into a propensity to adopt innovative payment solutions. In fact, PayPal and Bitcoin were accepted only by 30% and 6% of respondents, respectively.

Notwithstanding, 51 out of 125 surveyed firms (40.8%) were actively considering the potential and related opportunities that Libra could have on the company.

Conversely, asking the interviewees with respect to the safety guarantees, PayPal is still considered as the most reliable and safe option before Libra and Bitcoin.

Libra has the potential to improve financial inclusion and global financial stability but it certainly suffers from Facebook's troubled past with data-disclosure scandals (i.e.: Cambridge Analytica) along with endogenous safety and financial problems.

Sampled Firms asked to the main deterrent and risk to Libra adoption, chose:

- in 28.8% of the cases, the misuse of company information by Facebook and the Libra Association despite confidentiality commitments
- In 12.8% of the cases, the potential misuse of customers information by Facebook and the Libra Association, violating the confidentiality commitments.
- in 20% of the cases, a risk of being indirectly damaged by possible information leaks and hacker attacks to which Libra could be exposed to.
- In 15.2% of the cases, the risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions
- In 23.2% of the cases, the risk of fraud against the company, due to a disintermediation of traditional banking players.

### ***Individuals results***

Another questionnaire successfully reached 147 out of 200 individuals, (54% males and 46% females). Thirty-five (24%) of respondents were minors (under 18 years old), 47 (32%) between 18 to 35 years, 39 (27%) between 36 to 60 years and the remaining 26 (18%) were over 60 years.

Concerning the level of education: 39 (27%) respondents had a high school diploma, 47 (32%) had a Bachelors' degree and 61 (41%) had a master's degree.

First, interviewees were asked to indicate how much time they spend on social networks daily, on an increasing scale from 1 (no time) to 10 (lot of time). Answers are reported in the following table

Scale of time spent	1	2	3	4	5	6	7	8	9	10
Number of individuals	9	7	13	10	15	11	29	27	14	12
%	6.1%	4.8%	8.8%	6.8%	10.2%	7.5%	19.7%	18.4%	9.5%	8.2%

Majority of respondents (87.1%) declared to possess a Facebook account.

Subsequently, the interviewees were asked whether they read privacy policies of Facebook tools and apps before giving their consent: 76 individuals (59.4%) answered negatively, 26.6% declared to do that only in some circumstances and 14.1% reported to always do so.

This low level of care in submitting privacy policies contrasts with the fact that half of the sample (48%) experienced privacy issues using Facebook (eg.: publication of content in their Facebook profile without their knowledge or consent).

Individuals were then asked if they were aware of the Cambridge Analytica scandal on the abuse of Facebook users' data, 104 individuals out of the 147 responders answered affirmatively; among which, 83 people only heard of the case without a deeper knowledge of the subject.

Worth to be mentioned is that, at the time of the questionnaire, 131 (89.1%) out of 147 users already heard of Libra announcement.

In the table below are reported the answers about the threat and deterrent to Libra adoption considered most risky by the individuals out of the proposed ones.

- 22.4% of them indicated the risk of incorrect use of personal data by Facebook and the Libra Association despite the signed confidentiality commitments
- 15.6%, the risk of incurring penalties related to the difficulty of regulation by government bodies and the reduced transparency of transactions
- 26.5% of them indicated the risk of lesser own protection, as a customer, in transactions, compared to the most common payment systems and greater sensitivity in case of scams.
- In 35.4% of cases, Risk of being indirectly damaged by computer violations to which Facebook and the Libra Association could be exposed to

Furthermore, the announcement of the imminent launch of Libra, in terms of personal privacy, and the fact that Facebook continues its expansion into the world of data by extending its reach to various aspects of user's life is perceived negatively by 126 interviewees (85.7%).

The surveyed were then asked to express a favorable or contrary opinion about the following arguments concerning Libra:

- The size of Facebook's network means it could be immediately and systemically important
- Fears around widespread adoption of Libra have been shared by leaders around the globe as Libra could become a "sovereign currency" that could compete with state currencies.
- Libra would operate in a regulatory "Void" so it could be restricted to be a private cryptocurrency
- Cryptocurrencies are frequently targeted by hackers. In the first eight months of 2018, hackers stole nearly \$1 billion from cryptocurrency exchanges

Subsequently, they were asked whether they would still be inclined to use Libra and 71 people answered affirmatively, 41 answered “probably yes” and 35 people answered negatively.

To conclude, individuals were asked to indicate the principal uses they would reserve Libra and have chosen:

- Online shopping, in 25.2% of cases
- For daily purchases (alternative to ATM or cash), in 16.3% of cases
- Sending money to relatives or friends, in 17.7% of cases
- Alternative to prepaid cards, in 19.7% of cases
- Form of investment, in 21.1% of cases

## **Discussion**

The data collected from majority of the sampled companies report a positive tendency to use social networks as a marketing solution. Only 17% of the sample do not own social pages, suggesting a general familiarity with online environments and platforms

This tendency does not translate into a propensity to adopt electronic payment systems like PayPal or cryptocurrencies, instead a fair diffidence towards Bitcoin is showed. The scarce propensity to use innovative financial solution may be influenced by the market of reference and type of output; this could be a significant advantage for Libra as it would face less competition.

The adoption of Libra as a payment option to offer to customers is a viable option for 40% of the sampled companies considering both its risks and advantages. Reasons of such propensity, lie under the ambitious vision behind Libra project aiming to “foster financial inclusion by providing better access to financial services and capital, especially in less developed countries” and to enable “huge efficiency gains in payments in developed economies, which would trigger additional economic growth globally” as stated by Prof. Dr. Volker Brühl, in the article “Libra – A Differentiated View on Facebook’s Virtual Currency Project”.

When companies were asked about the safety guarantees, PayPal is still considered as the safest option compared to Libra and Bitcoin. Libra in this context suffers from Facebook's data-disclosure scandals and endogenous safety and financial problems.

Concerning Libra, the sampled firms mainly fear the frauds caused by the disintermediation of traditional banking players in Libra transactions along with the potential misuse of users' information by Facebook and the Libra Association, violating the confidentiality commitments.

In this regard, Facebook has not yet declared how it will address many issues like to what extents Libra wallet, would offer fraud protection and insurance reimbursements and, how the Libra Association will face regulatory scrutiny.

As far as the results from individuals, up to 50% of the sample declared an assiduous average daily use of social networks revealing mainly among the younger responders. Facebook platform is the most widespread as 90% of the sample have one active Facebook profile. Consistently, Facebook is the world most used platform counting 2.49 billion active users (February 2020)

Notwithstanding, this study showed a general poor attention for privacy policies of Facebook and of its social media app developers. This can be explained by the low awareness of Facebook's troubled past with data-disclosure scandals though most of the sampled individuals experienced privacy violations like publication of posts for advertising purposes without specific consent.

Out of 70% of the sampled users was aware of Cambridge Analytica scandal, only 14% of them proved to be truly aware of the threats and consequences of data misuse, far more serious than the simple publication of an unauthorized marketing post.

This impacts on Libra, since the data protection regulators call on the Libra Association to explain how personal data will be treated. Using Libra means trusting Facebook and it is hard to sell in 2020.

Indeed, the problem of trusting affects all cryptocurrencies.

Bitcoin gave people the ability to digitally transact value without the need for a government intermediation marking the beginning of the separation of money and state.

A change of such a magnitude takes time and trust. Satoshi Nakamoto in a first Bitcoin announcement wrote: “The root problem with all cryptocurrencies is all the trust that is required to make them work”.

In this study only 19% percent of the sample had ever conducted a Bitcoin transaction.

Another limit of Bitcoin is the need of consistent internet access with inherent costs of phone data and mining fees that exceed its benefits.

In this regard, Facebook Libra has a distinct advantage as, even though many of its technical aspect are close to Bitcoin, it drastically breaks from the crypto model in important ways. First, for many people Facebook is the only free way to access the internet and any non-cash-based financial system. Second, If Libra will be launched, this stable coin would be pegged to a basket of fiat currencies guaranteeing its stability unlike traditional cryptos and removing the currency risk important deterrent to its adoption.

Additionally, people could use Libra through all Facebook’s social platforms, including Messenger, WhatsApp, and Instagram as emphasized in a very effective Libra advertising campaign. Effectiveness of those announcements results in this study too as 89.1% of the sample already heard of Libra when interviewed.

Despite users were aware of Libra, it does not mean they knew its actual functioning. This is a crucial point as stated by Ben Smith, founder of Cove Financial Planning: “Consumers who can adequately understand and formulate the exchange rate, much like with foreign currencies, are likely to keep spending with cryptocurrency in check. Consumers will need to know how currency exchange works to understand that when they cash out Libra, it could be worth more or less than when they first purchased Libra, depending on how its value has fluctuated”,

It comes back to the matter of trust. Both companies and individuals do not prominently identify a specific threat deriving from Libra potential use although the risk of hacker violations involving money and personal data, is the most feared. This is supported by the report of a new case of platform violation against Facebook user data by the data analytics company, OneAudience that illegally accessed and collected user data from the social media.

Although Facebook is not directly responsible of such episodes, it suggests that the social media giant struggles to protect its users meanwhile extending its reach into the world of data to their banking data and money. This lack of control is perceived by 85.7% of the individuals in this study.

Despite the numerous scandals affecting Facebook and the inherent negative perception by the interviewees, if Libra would be launched, 48.3% of the sample would certainly try it and 27.9% probably would do the same. On-line shopping would be the main Libra use by respondents. This is because Libra now is perceived both as an easily accessible, stable, decentralized currency with little or no transaction costs even for low income and unbanked people. In other words, Libra is mostly perceived as a private currency rather than a cryptocurrency.

## **Conclusions**

Facebook, like other social medias, is used not only for communication purposes but also for commercial aims and Libra, if integrated in Facebook social apps like Messenger and WhatsApp, would finally allow users to easily move value between one another too.

Despite its high potential, Facebook has been forced to postpone Libra's launch due to the severe scrutiny from central banks regulators, law makers and customer protection groups.

To confirm those concerns, in a 2018 survey by a personal-finance website, 91% of respondents said they would not trust Facebook to handle their payments.

Thoughtful solutions about the risks for the users related to Libra's adoption are mandatory for Libra avoid being relegated to a form of investment like the Bitcoin instead of becoming a currency usable worldwide.

Facebook intention is not to give up on Libra challenge but to circumvent the aforementioned problems, by progressively redesigning the whole Libra project, streamlining and simplifying it relatively to the original idea.



Thus, Libra Association is working with regulators to explore the application of relevant laws to distributed ledger technology. Libra transfers would be guaranteed by its Blockchain and would happen in similar way as for existing blockchains.

According to Facebook intentions, users would be granted privacy protection from the fact that Calibra will comply with the Bank Secrecy Act and will incorporate KYC and AML/CFT methodologies, including those focused on customer identification and verification, and risk-based customer due diligence, applying technologies such as advanced machine learning to enhance transaction monitoring, and suspicious activity reporting. Calibra efforts will be commensurate with its risk profile based on several factors, such as Calibra product features, customer profiles, geographies, and transaction volumes.

However, these are instruments more aimed to protect Facebook and Governments than Libra users, when violations of users' own privacy are one of the main reasons that would discourage the use of Libra.

Potential solution on this regards would be the use of Interactive Cooperation Framework API, a computing interface defining interactions between multiple software intermediaries. It is designed to be integrated with financial software applications to actively protect crypto assets from malicious threats. It enables crypto service providers to query the TRDB as well as its whitelists and blacklists, in real time.

Before completing a transaction, the ICF (API) enables a financial application to query Sentinel Protocol's Threat Reputation Database (TRDB) and check whether a specific crypto wallet address, URL, domain, or Telegram ID is safe or not. Within milliseconds, the TRDB sends a response and a pending transaction can be immediately rejected and terminated or could be allowed depending on the alert or warning from the response.

Facebook has also to face resistance by central banks, about a supranational currency like Libra operating in an area that is still largely deregulated.

In fact, Libra would be the alternative for people now forced to use their country's fiat currency, even when there is a massive disadvantage in it, offering a refuge from inflation and its consequences specially in middle and low-income countries.

Despite its potential, Facebook's intention not to launch Libra, before getting the absolute go-ahead from regulators, seems not appropriate and should not consider halting Libra's development any further. If so, Facebook would risk of "beating a dead racehorse". In fact, many countries worldwide still do not have any regulation dealing with Bitcoin, a decade after its launch.

Facebook should not attempt to satisfy all the concerns or demands by central banks, regulators, law makers, and tax authorities as it would be an impracticable task to accomplish. Instead, it should primarily focus on Libra users' privacy protection. Even though there is little to no attention by social media users to data privacy policies, it cannot constitute a reason for Facebook not to guarantee the adequate protection of even more sensitive information such as banking data.

As it stands, any process of data collection, storage and use can easily lead to the leakage of personal information.

At present, many companies rely on the fact that data are processed anonymously, that are encrypted as soon as collected and only then are handled. However, is a matter of fact that the protection of privacy cannot be effectively achieved just through data encryption.

The risk of information leakage is worsened by the lack of awareness of self-protection among users.

Strengthening supervision of data information is extremely important. First, it is necessary to reinforce the supervision and management of data and to anonymously protect social media data to ensure that personal information security is not misused.

For privacy protection, the Libra Association will mainly rely on the effectiveness of its blockchain because the transactions would include only the sender and receiver's public addresses, the transaction amount, and the timestamp. No other information will be visible. Libra Association would not separately hold any personal data on people who use the blockchain, no matter how it could be collected, and would not run any infrastructure. As a result, the Association could not monetize data on the blockchain.

Swiss Federal Data Protection and Information Commissioner (FDPIC) will be the Libra reference data and privacy regulator.

As a further effort Facebook declared that one of its main goals for the next decade will be to build much stronger privacy protections for every user. To do so, he announced “Off-Facebook Activity tool” to allow users to see a summary of their information and clear it from their account if they want to in order to get a new level of transparency and control.

Moreover, Facebook released the “Login Notifications” to help users keep track of their activity. This will allow Facebook users to sign-in to other apps and services account like games and streaming platforms, using their account. These notifications alert the user when their account is used to access to third-party apps.

Whatever will be launched or will be abandoned, Libra has nevertheless led to the necessity of rethinking the financial ecosystem. The meaning of this revolution is represented by the first lines of Libra’s white paper citing that the advent of the Internet and mobile broadband has made available to billions of people the possibility to access information and services, once "exclusive". With 85% of people living in cellphone-connected areas, the introduction of a digital currency like Libra would potentially transform the global economy, making trade and financial services accessible even through the cheapest smartphone on the market and from every part of the world. Tech companies and financial institutions should work together to resolve all concerns raised for Libra. This could lead to a substantial transformation of the current financial ecosystem giving 1.7 billion people access to basic financial services they do not yet have access to. In a current reality where "people with less money pay more for financial services" this would also be an opportunity to make the cost of these services fairer for banks too.