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Analysis of the M&A transactions in the Blockchain and Crypto-assets industry, with a final focus on the possibility of financing an M&A deal with

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Introduction

Digital technologies have fundamentally transformed the landscape of various industries, particularly the financial sector. One of the most revolutionary advancements within this field is the development of cryptocurrencies, which have taken the world by storm in the past decade. These decentralized digital currencies operate on a technology known as blockchain, which provides a secure, transparent, and efficient method of recording transactions.

This thesis aims to explore the intersection of cryptocurrencies and M&A transactions. It investigates the potential for cryptocurrencies to act as a means of financing in such transactions, despite their inherent volatility and the regulatory ambiguities surrounding them. This work is divided into three main sections.

The first part of this thesis provides a deep-dive analysis of the world of cryptocurrencies. It delves into the underlying technology, the operational dynamics, and the transformative potential of these digital assets. The discussion includes exploring the regulatory environment, the inherent volatility, and the opportunities and challenges cryptocurrencies present within the broader financial ecosystem.

The second part focuses on the intersection of M&A and the cryptocurrency and blockchain industry. It evaluates the dynamics of M&A within this rapidly evolving sector and the key strategic considerations in such deals. This section further investigates the implications of these M&A transactions, their influence on market structure, and their impact on the convergence of traditional finance and digital currencies.

In the third part, the thesis analyzes the potential of cryptocurrencies to serve as innovative tools for financing M&A transactions, scrutinizing the feasibility of employing cryptocurrencies as financing tools in M&A transactions. This includes an analysis of the potential advantages and challenges involved from the perspective of regulatory compliance, valuation, cybersecurity risks, and mainstream adoption. Conluding, the last part highlights the role of Initial Coin Offerings (ICOs) and Security Token Offerings (STOs) as emerging fundraising mechanisms. The exploration in this section covers the advantages, challenges, and regulatory considerations of these tokenization-based capital-raising methods.

Chapter 1 – The Cryptocurrency World

1.1 Rise of Cryptocurrencies: Challenges and Benefits

In recent years, a revolutionary social phenomenon has given rise to a new digital monetary ecosystem governed by the users who belong to its network. This system, characterized by a cryptographic approach and the lack of central authorities and financial institutions called upon to supervise the network's users, has given birth to a different form of money with an entirely innovative digital format. Their name are cryptocurrencies and Bitcoin is the main one, first heard of in 1998 by Wei Dai on the Cypherpunks mailing list and subsequently created in 2009 by Satoshi Nakamoto.

Within the Web and the spread of the online world, there have been numerous changes aimed at forming a currency of a non-ordinary type. However, it has never been able to cope with problems that can be traced back to the origins of digital information technology, which is subjected to difficulties on a daily basis. Every standard that the world has created to safeguard works from non-legal copying has been systematically annulled over the years, and alarmism is even more intense when referring to a currency marked by the double-spending problem. The latter refers to the approach by which it is possible to double the same virtual currencies and use them twice. A probable approach that could be used to deal with this problem would be to refer to a single central authority. However, this option is not considered the best in the IT sector, as it has weaknesses, and in the event of an attack on the network, a total break in the chain would occur. It is essential also to remember that in a reality where laws become an imposition of one central body, even this might not follow appropriate behavior.

In 2009, after years of research, industry studies and analysis, a point of no return was reached through the decisive changes brought by Bitcoin and the protocol behind him. All the weaknesses of the virtual currency have been overcome thanks to BlockChain, a database that uses peer-to-peer technology, which any person can extrapolate from the Internet, becoming a kind of network node.

In simple terms, BlockChain can be defined as a sort of account book in which all the transactions made in Bitcoin, from 2009 to the present day, are recorded; transactions made possible by the approval of 50% + 1 of the nodes. This system does not require credit institutions to implement transactions and can be applied in the totality of contexts within which a relationship between multiple individuals, or groups, is indispensable. It can guarantee the timely exchange of securities and shares, replace a notarial deed, and ensure the goodness of the votes, overturning the definition of a polling station, as each operation is controlled by a network of nodes that guarantee its accuracy and ensure

its anonymity. For those reasons, credit institutions and other investors have started to fund startups aimed at the composition of Blockchain and its services. The result is to create something that can be defined as a kind of digital gold. In a way reminiscent of the business that revolves around precious metals, Bitcoin is a universe for implementing network operations.

According to GranviewResearch report "*Blockchain Technology Market Size Report, 2022-2030*"[1], the global market size of blockchain technology was estimated to be worth USD 5.92 billion in 2021 and is projected to experience a significant compound annual growth rate of 85.9% between 2022 to 2030. The growth of this market can be attributed to multiple factors, including the rise of venture capital funding in blockchain technology companies, as well as the legalization of cryptocurrency in certain countries. One example is Circle Internet Financial Ltd. a blockchain technology provider that raised USD 440 million in funding from strategic and institutional investors to support organizational development and market expansion. Additionally, the legalization of cryptocurrency in countries such as Ukraine and El Salvador are anticipated to generate new opportunities for market expansion in the future.

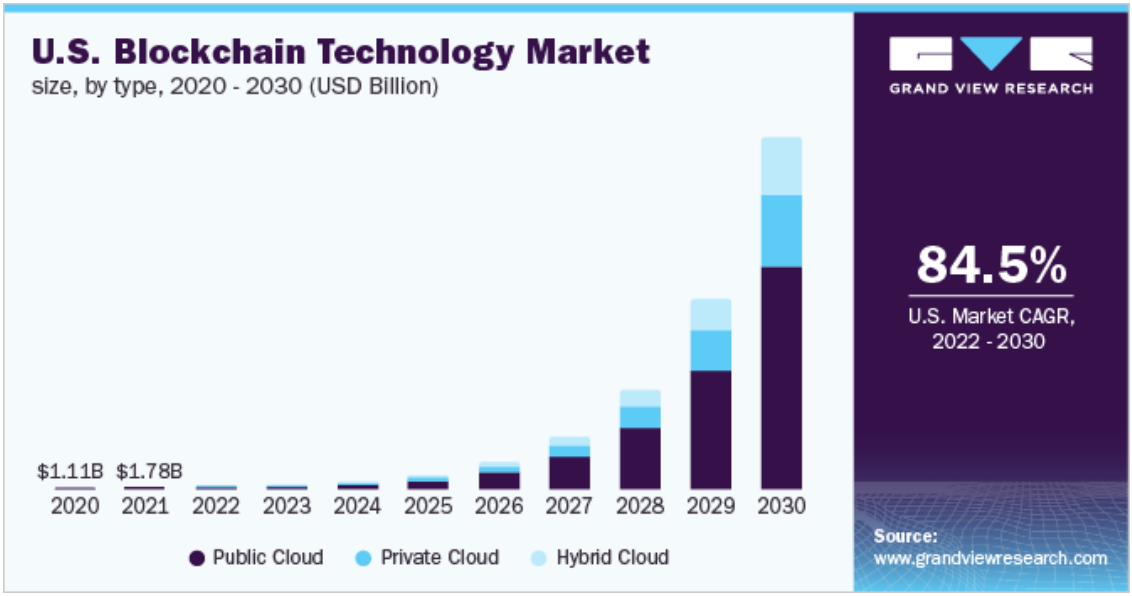

Figure 1 (source: *Blockchain Technology Market Size Report, 2022-2030*)

[1] Blockchain Technology Market Size, Share & Trends Analysis Report By Type (Private Cloud, Public Cloud), By Application (Digital Identity, Payments), By Enterprise Size, By Component, By End Use, And Segment Forecasts, 2023 - 2030

According to GlobalData, a leading data and analytics company, Venture capital (VC) investments in the blockchain sector increased significantly from $2.1 billion in 2020 to $14.8 billion in 2021 as companies and investors are eager to develop IT solutions based on blockchain technology despite lack of regulatory framework. The study also revealed that North America led in VC investments in 2021 with $6.8 billion, followed by Latin America with $3.4 billion, Europe with $3 billion, Asia-Pacific with $1.6 billion and the Middle East with $0.44 billion.

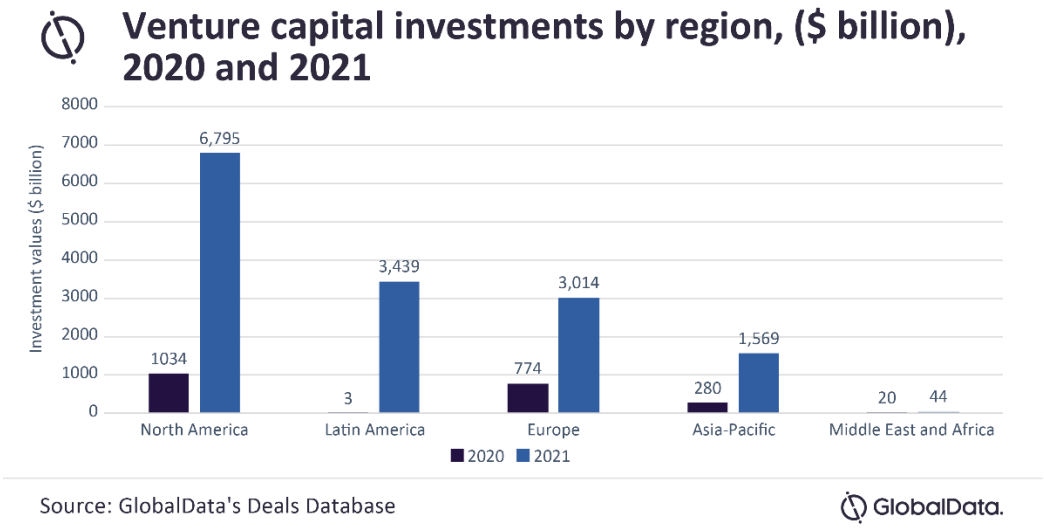

Figure 2 (source: *GlobalData's Deals Database*)

1.2 The principles of Bitcoin

Bitcoin is a virtual currency developed in 2009 and created by one or more hackers under Satoshi Nakamoto's pseudonym. It was born from the realization that online commerce still relies heavily on financial institutions acting as third parties on a fiduciary basis to process payments electronically. The system works acceptably but suffers from inherent weaknesses in a scheme that is essentially based on trust.

Therefore, what is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two counterparties to negotiate directly with each other without the need for a third-party trustee. Transactions that cannot be revoked would protect sellers from fraud, and escrow mechanisms could easily be implemented to protect buyers. A solution to the problem could be, as in the case of bitcoins, to use a distributed peer-to-peer timestamping server system to generate computational proof of the chronological order of transactions. All this is in support of an electronic currency. This will be better explained later.

Unlike other currencies, Bitcoin does not have to rely on a central bank that distributes new money but is based on two principles: a network of participants, defined often as "nodes" or "peers", and strong cryptography to validate and secure transactions. The peer-to-peer network, sometimes referred to as a p2p network, is one of the critical parts of Bitcoins and Blockchain and is a considerable improvement in how we store our data. The network can be defined as a group of interconnected devices exchanging information. These devices can be connected locally via a cable or wirelessly via the Internet.

Traditionally, the most used type of network is centralized client-server model, often managed by individual entities such as a company. This server will manage all activity and requests on the network and store all the information. However, the model has severe problems since all private data can be stolen by "hacking" a server, leaving the user with almost no control over how their information is controlled.

Blockchain networks differ from traditional client-server models because there is no central storage point or controlling party. Instead, all information on the network is constantly recorded and transferred between participants who store multiple identical copies of the information on the network. Therefore, a peer-to-peer network is a distributed network that stores and transfers data without a central authority, making information on a network much less vulnerable to being hacked, exploited, or lost. For that reason, p2p networks and Blockchain technology are seen as significant improvements on traditional centralized models and are the future of data storage and ownership.

1.3 Legal definition of cryptocurrency

Establishing a universal definition of cryptocurrency is particularly difficult due to the novelty, constant change, and rapid evolution that characterizes this new market and the confusion surrounding this topic. In addition, the definitions may be subject to updating as the cryptocurrency ecosystem continues to transform.

Since the birth of Bitcoin in 2009, major European and international institutions have carried out in-depth analyses of cryptocurrencies, touching on the subject from different points of view and consistently trying to give a definition based on the characteristics and functionalities of this innovation.

The *European Central Bank (ECB)*, in its 2012 report entitled *"Virtual Currency Schemes"*[2], classified cryptocurrencies as a subset of virtual currencies, defining them as a form of unregulated digital currency, issued and controlled usually by those who developed it and used and accepted by members of a specific virtual community. According to the study, virtual currencies, in general, can be divided into three types based on their interaction with traditional currencies and the real economy:

- ***Closed virtual currencies:*** these can only be used within a closed virtual system, such as online games, without the possibility of being exchanged with traditional currencies.
- ***One-way virtual currencies:*** these currencies can be purchased with traditional currencies, thanks to a conversion rate, and can then be used to purchase digital goods and services.
- ***Bidirectional virtual currencies:*** there is a conversion rate for both buying and selling, making these currencies linked to the real economy. The virtual currency can subsequently be used to purchase digital and tangible goods and services.

Cryptocurrencies, such as Bitcoin, are virtual currencies of the latter type, as they can be converted into legal tender and vice versa.

In 2015, due to developments and increased understanding of the topic under analysis, the *ECB* proposed a further definition of virtual currencies, updating the one previously given. According to the report entitled *"Virtual Currency Schemes - a further analysis"*[3], virtual currencies are defined as digital representations of value, not issued by a central bank, credit institution or e-money institution,

[2] https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf
[3] https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf

which can be used as an alternative to currency in certain circumstances. Within this paper, cryptocurrencies have been defined as decentralized two-way virtual currencies.

In 2016, in the report published by the *IMF* Staff Team entitled *"Virtual Currencies and Beyond: Initial Considerations"*[4], the International Monetary Fund (IMF) also classified cryptocurrencies as a subset of digital currencies. According to the IMF, digital currencies are digital representations of value issued by private developers and denominated in their own unit of account. This concept covers a broader range of currencies, from informal debt contracts, also called IOUs (as airline miles), to virtual currencies backed by existing, tangible assets such as gold or national currencies and cryptocurrencies such as bitcoin. In a further report of December 2019 named *"regulation of crypto assets"* the term 'crypto asset' is used to refer to any digital asset that uses cryptography for security and is a coin or token of a distributed ledger or blockchain, including asset-backed tokens.

In May 2019 the ECB published another report named "*Crypto-Assets: Implications for financial stability, monetary policy, and payments and market infrastructures*"[5] in which further discusses the concept of crypto-assets, pointing that there was still no international agreement on how they should be defined. The ECB attempts to provide a characterization of crypto-assets defining them as an asset recorded in digital form that is not a financial claim or liability, does not embody a proprietary right against an entity and it is considered valuable by its users for investment and/or means of exchange. The controls of supply and the agreement over validity of transfers in crypto-assets are not enforced by an accountable party but are induced by the use of cryptographic tools. These assets are enabled by distributed ledger technology (DLT) and while they may share similarities with virtual currencies or digital currencies, they are distinct in that they are not protected by any institution and their volatility hinders their use as a store of value, means of payment, or unit of account.

Concluding, as already said, it is important to note that the understanding and definition of crypto assets is not universally agreed upon. Those report notes the distinction between 'coins' and 'tokens', however, the terms may be used interchangeably.

[4] https://www.imf.org/external/pubs/ft/sdn/2016/sdn1603.pdf
[5] https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op223~3ce14e986c.en.pdf

1.4 Blockchain, the technology behind

The previous pages already pointed out the main characteristics and benefits introduced with the Blockchain system. However, it is essential to understand precisely how the underlying technology works, as it has become increasingly important not only for cryptocurrencies but also for other applications. Blockchain, as already mentioned, is a distributed database shared among the nodes of a computer network. Like a database, it stores information electronically in a digital format. It is best known for its essential role in cryptocurrency systems, such as Bitcoin, maintaining a secure, decentralized record of transactions. Blockchain innovation ensures the fidelity and security of a data record and generates trust without the need for a third party.

A critical difference between a typical database and a blockchain is how the data is structured. A blockchain collects information into groups, known as blocks, containing sets of information. Blocks have specific storage capacities and, when filled, are closed and linked to the previously filled block, forming a data chain known as a blockchain. All the new information that follows that newly added block is compiled into a newly formed block that will be added to the chain when filled.

The goal of the Blockchain is to allow digital information to be recorded and distributed but not changed. In this way, the records of all transactions cannot be altered, erased, or deleted. For this reason, Blockchains are also known as distributed ledger technology (DLT).

First proposed as a research project in 1991, the blockchain concept preceded its first widespread application in use: Bitcoin, in 2009. In the following years, the use of Blockchain exploded by creating various cryptocurrencies, decentralized finance applications (DeFi), non-fungible tokens (NFT) and smart contracts. It must be clear that Bitcoin and Blockchain are not synonymous: the former is a cryptocurrency, and the latter is a distributed processing technology.

A blockchain allows the data contained in that database to be distributed among different network nodes in different locations. Not only does this create redundancy, but it also maintains the data's fidelity. If someone tried to alter a record in one instance of the database, the other nodes would not be altered, so a malicious or careless operator would be prevented from destroying the data. If a user tampered with the Bitcoin transaction log, all other nodes would cross-reference and quickly identify the node with the wrong information. This system helps to establish an exact and transparent order of events. In this way, no single node within the network can alter its information.

For this reason, information and history are irreversible. Such a record could be a list of transactions. However, it is also possible for a blockchain to hold various other information, such as legal contracts, status identifications, or the inventory of a company's products.

For example, virtual wallets, where users deposit their cryptocurrencies, have been hacked in the past, and users have lost everything. While the hacker may be completely anonymous, the Bitcoins they have mined are easily traceable. If the Bitcoins stolen by some of these hackers were moved or spent somewhere, it would be known. Of course, the records stored on Bitcoin's Blockchain are encrypted. This means that only a record owner can decrypt it to reveal their identity using public and private key pairs. As a result, blockchain users can remain anonymous while maintaining transparency.

Blockchain technology achieves decentralized security and trust in several ways. To begin with, new blocks are always stored linearly and chronologically. Suppose a hacker, who also runs a node on a blockchain network, wants to alter one Blockchain and steal cryptocurrency from everyone else. If they were to alter their single copy, it would no longer align with everyone else's. When everyone else crosses their copies with each other, they would see this one copy stand out, and that hacker's version of the chain would be discarded as illegitimate. Succeeding in such an attack would require the hacker to simultaneously control and alter 51% or more of the Blockchain copies so that his new duplicate becomes the majority and, thus, the agreed-upon chain.

1.4.a Timestamping servers: avoiding fraudulent behaviors

A traditional solution to avoid fraudulent behaviors would be to introduce a central trust authority that controls all transactions. After each transaction, the money must be returned to the central authority, which issues a new coin, and in this way, it is assumed that only coins issued directly by the authority have not been spent twice.

The problem with the above solution is that the fate of the whole monetary system depends on the company managing the central authority, and every transaction must go through it, just like a bank. Therefore, a scheme must be devised so that the beneficiary knows that the previous owners have not signed any transaction prior to the one concerning him. For this purpose, the first transaction is the one that counts, and we are interested in subsequent attempts at double-spending. The only way to confirm the absence of a transaction is to be aware of all transactions. In the central authority model, the authority was aware of all transactions and decided which one happened first. To have the same result in a system without authority all the transactions must be announced publicly, and we need a system through which participants agree on a single point in time when transactions take place. The beneficiary needs proof that most nodes agree this was the first one received at the time of each transaction. The solution proposed in the bitcoin scheme starts with a timestamp server. A timestamping server acts by hashing a block of objects so that they are timestamped and then publishes the hash. The timestamp proves that the data must have existed on that date since it ended up in the hash. Remember that "hashing" is the process of converting an input of any length into a text string of fixed size using a mathematical function. This means that any text can be converted into an array (complex data structure) of numbers and letters using an algorithm regardless of its length. The message to be hashed is called the input, the algorithm for doing so is called the hash function, and the output is called the hash value.
Many formulas can be used to hash a message. However, a cryptographic hash function needs certain qualities to be considered valuable. Each hash value or output must be unique, meaning that it should be impossible to produce the same hash values by entering different inputs. Furthermore, the same message should always produce the same hash value. The hashing speed is also an essential factor. The hash function should be fast to produce hash values. It is challenging, if not impossible, to determine the input based on the hash value. In the Blockchain, hashes are used to represent the current state of a Blockchain and to ensure its immutability. Each transaction contains specific information, such as the amount sent, the sending and receiving address, and the time stamp. All this information is combined in the formula to produce a hash called the Transaction ID, a hash value that

can be used to identify and confirm that the transaction has taken place. The first block in the Blockchain, known as the genesis block, contains transactions that, when combined, produce a unique hash. When the second block is created, the genesis block's hash is added to all new transactions in the new block. This process is repeated to all new blocks added to a blockchain, always taking the previous hashes to generate the newer ones, creating an unbreakable dependency. This makes the blockchain network secure, unchangeable and transparent (Image 3).

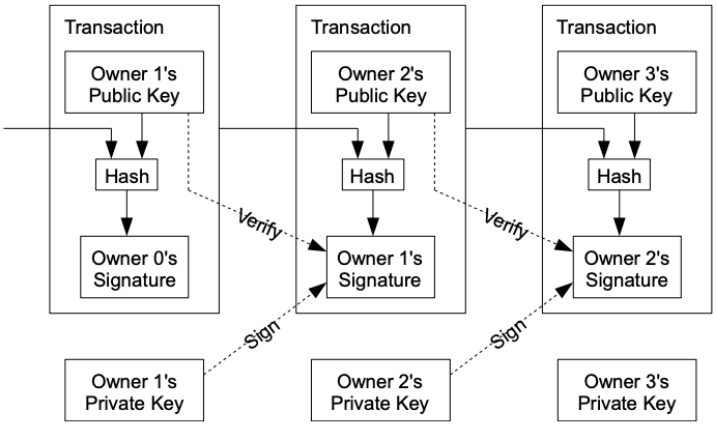

Figure 3[6]

Blockchain first entered the mainstream in 2008, when a whitepaper released by developers working under the pseudonym Satoshi Nakamoto developed this model. From there, it expanded, and in 2009, Blockchain was turned into a public ledger for the first time for bitcoin transactions. Now, Blockchain is used in industries worldwide for various purposes beyond cryptocurrency, from making online transactions more straightforward and more secure or to make the transportation of goods more streamlined.

[6] Source: Bitcoin: A Peer-to-Peer Electronic Cash System (Satoshi Nakamoto)

1.5 The Crypto-Asset market

The cryptocurrency market, the meaning of which should be extended to the more general concept of crypto-assets, has developed enormously, demonstrating exponential growth in the last years. Its size can be summed up in the total market capitalization, which, as seen in the figure, reached its highest value on November 10, 2021, at around $ 2,734 trillion (Figure 4).

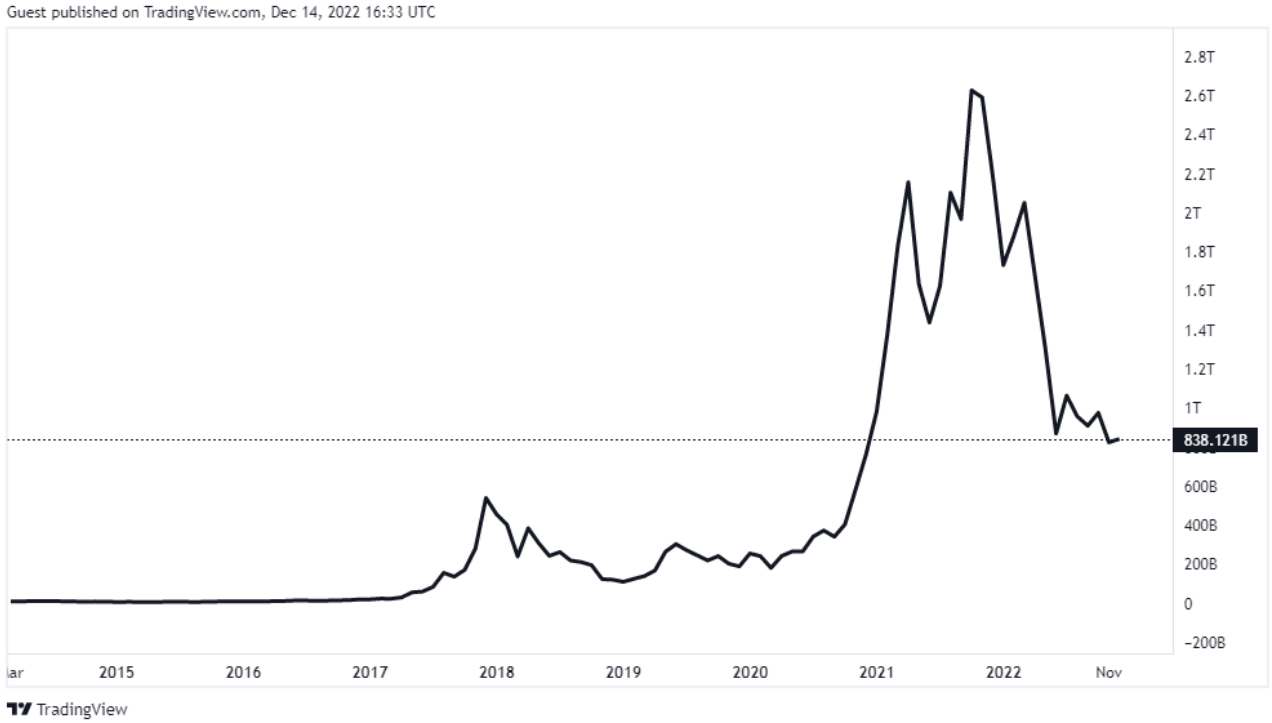

Figure 4 (source: *Tradingview)*

Although, cryptocurrencies are known to be very volatile assets and from the beginning of 2022 their market faced an unprecedented bearish sentiment linked to numerous factors, including the global economic downturn, the war in Ukraine, inflationary fears, and higher interest rates, which make it more expensive for businesses to borrow money. These issues have also impacted the cryptocurrency market, leading to a slump in November 2022 following the collapse of FTX, a major crypto exchange that handled around $1 billion in daily transactions. This collapse has had a ripple effect on other crypto exchanges, contributing to the market's overall volatility.

In June 2022, bitcoin saw a significant drop in value, falling below $20,000 for the first time since 2020. This was partly due to the decision of Celsius Network, a major US cryptocurrency lending

company, to freeze withdrawals and transfers due to extreme market conditions. This move also contributed to the overall slump in the cryptocurrency market.

Other factors that have contributed to the volatility of bitcoin and other cryptocurrencies include China's ongoing crackdown on crypto, speculation that crypto operations may come to a halt in Russia, and sudden and severe sell-offs of major cryptocurrencies that have triggered panic and further sell-offs among investors.

One of the principal reasons for the volatility of Bitcoin is that it has no underlying asset, unlike traditional investments such as company shares. This means that the movements in its price are based purely on speculation among investors about whether it will rise or fall in the future. As a result, there can be significant fluctuations in the price, even over the course of a single day. At present, high inflation and a cost-of-living crisis are causing many people to reduce their investment risk by selling their cryptocurrency.

Despite the several negative events in the cryptocurrency industry, there have also been positive developments that have influenced the value of bitcoin and provided some stability to the price. In March 2021, Morgan Stanley became the first major US bank to offer its wealthier clients access to bitcoin investment options[7], albeit with a limit of no more than 2.5% of an investor's net worth. In June of the same year, Elon Musk announced that Tesla would likely accept bitcoin payments again once a majority of its energy usage was derived from renewable sources. Amazon's posting of a job opening for a "digital currency and blockchain product lead" in July 2021 sparked speculation that the company may soon accept bitcoin as payment. Additionally, last September, El Salvador made bitcoin a legal tender.

There have also been other developments that have had a more mixed effect on cryptocurrencies. For example, the US Federal Reserve has considered launching its own central bank digital currency (CBDC). In March of this year, President Joe Biden signed an executive order aimed at coordinating the US government's actions on the regulation of digital assets. While some cryptocurrency supporters believe regulation is a negative thing, others feel that this executive order could help with the development of digital assets, including the CBDC, to ensure proper consumer protections are in place.

[7]https://www.cnbc.com/2021/03/17/bitcoin-morgan-stanley-is-the-first-big-us-bank-to-offer-wealthy-clients-access-to-bitcoin-funds.html

The crypto market may experience a resurgence in popularity at some point in the future. However, it is difficult to predict when this might occur due to the volatility and speculative nature of the cryptocurrency. It could take months, or even years, before bitcoin sees a resurgence. Nevertheless, it is essential to note that it is challenging to predict the future of bitcoin due to its unpredictable nature.

Bitcoin (BTC) is the first cryptocurrency referring to price and market capitalization, but it is not the only one in the current global landscape (Figure 5). The last few years have seen an increasing growth in the cryptocurrency's numbers. Alternative Coins (*AltCoin*) are commonly used name to identify all the alternatives to bitcoin, some of which originated from a split in the Bitcoin protocol. The main one, in order of market cap. are: Ethereum, Tether, USD Coin, BNB, XR, Binance USD and Dodgecoin.

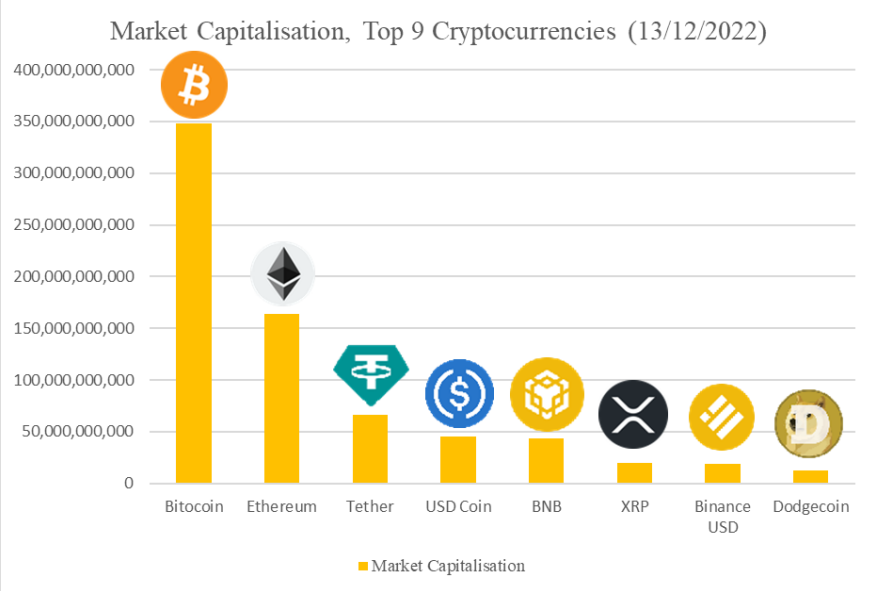

Figure 5 [8]

Very similar to bitcoin is Ethereum which is second in terms of price value and market capitalization. It is a decentralized platform that manages smart contracts. These applications run on a customized blockchain, allowing developers to create markets, store records of debts or promises, move funds and many other things. Ethereum is also a network for exchanging monetary value.

[8] Source: CoinMarketCap.com

The unit of account of the system is Ether (*ETH*). It is traded as a cryptocurrency and used to pay transaction fees and computing services on the network. Every activity in the system involves paying a fee, called a gas. In 2016 Ethereum underwent a split, through which Ethereum Classic was born.

The total market for virtual currencies has entered a period of exponential growth. Nowadays more than 20,000 different cryptocurrencies are traded publicly, based on the *CoinMarketCap.com* data. While some of them have total market valuations in the hundreds of billions of dollars, others are obscure and essentially worthless.

Interestingly, a clear and precise model seems to have emerged regarding the spread of virtual currencies, which could foresee the evolution based on what is the standard model in a similar way to what happens for other human phenomena such as religions, languages, and wars.

The principle would be that a population has no clear and definite consensus on a specific cryptocurrency. Establishing the best currency is complex because different virtual currencies are helpful for different purposes and uses. For this reason, the virtual currency market is one of the most unpredictable and exciting. For example, some researchers have pointed out the technical limitations that bitcoins sometimes have, and this has inspired the emergence of new cryptocurrencies such as Ethereum, which for a while seriously challenged the primacy of bitcoins. The influence of alternatives on the cryptocurrency market remains to be assessed but will undoubtedly be there. While the growth of alternatives to bitcoin is beginning to be substantial, it is clear that this currency could suffer some backlash in terms of value.

The cryptocurrency market is composed of several actors and instruments, listed below, which allow the sector to function and develop[9]:

- *Users*: are those who, once they have obtained a given cryptocurrency, use it to purchase real or virtual goods or services from those who accept cryptocurrency payments, make peer-to-peer payments, or hold it in their wallets for investment purposes, i.e. speculatively. Users can purchase cryptocurrencies through an exchange platform, paying in fiat currency or with other cryptocurrencies. Alternatively, users can purchase them through a trading platform with a P2P exchange, or by mining if the cryptocurrency under consideration is based on a consensus proof-of-work mechanism, by accepting cryptocurrency units as payment for goods or services offered, or as a gift or donation from other users. Finally, by participating in a free initial offer or mass sale organized by the cryptocurrency provider.

- *Miners*: as explained above, participate in the validation of transactions on cryptocurrency blockchains that rely on a consensus proof-of-work mechanism by solving a cryptographic puzzle. The miners, who sometimes group themselves into 'mining pools in order to pool the computational power of their hardware to make it more performant, are in charge of ensuring the authenticity and regularity of each transaction. The first among them who manages to validate the block in question receives newly minted units of cryptocurrency as a reward through a new automatic and decentralized issuance.

- *Exchange platforms*: online platforms that allow users to exchange fiat currencies into cryptocurrencies and vice versa, applying a certain fee. Some exchanges only allow conversion between different cryptocurrencies, while others allow both modes of exchange. Some are pure, only providing the service for which they were created, while others also act as trading platforms and often as custodial wallets. Examples of exchange platforms are Binance, Coinbase, Bitfinex, Kraken, Bitpanda, Flamingo, and Conio. Different national laws currently regulate exchange platforms on which cryptocurrencies are bought and sold, so there is specific legal protection for users in case of litigation or failure. In the absence of disclosure requirements and transparency rules, exchange platforms are also exposed to high operational and security risks: unlike authorized intermediaries, they are not required to provide any service quality guarantees, nor do they have to comply with capital requirements or internal control and risk management procedures, resulting in a high probability of fraud and exposure

[9] "Who's Who on the Blockchain? Mapping the Key Players in the Cryptocurrency Ecosystem", Chainanalysis

to cyber-crime. Exchanges play a crucial role in the industry, and account for a large percentage of all funds sent through cryptocurrency services. In recent years, there has been a significant increase in the amount of funds being received by exchanges, with over $1 trillion in cryptocurrency value being received since April 2020. This represents a large percentage of all digital currency received by services.

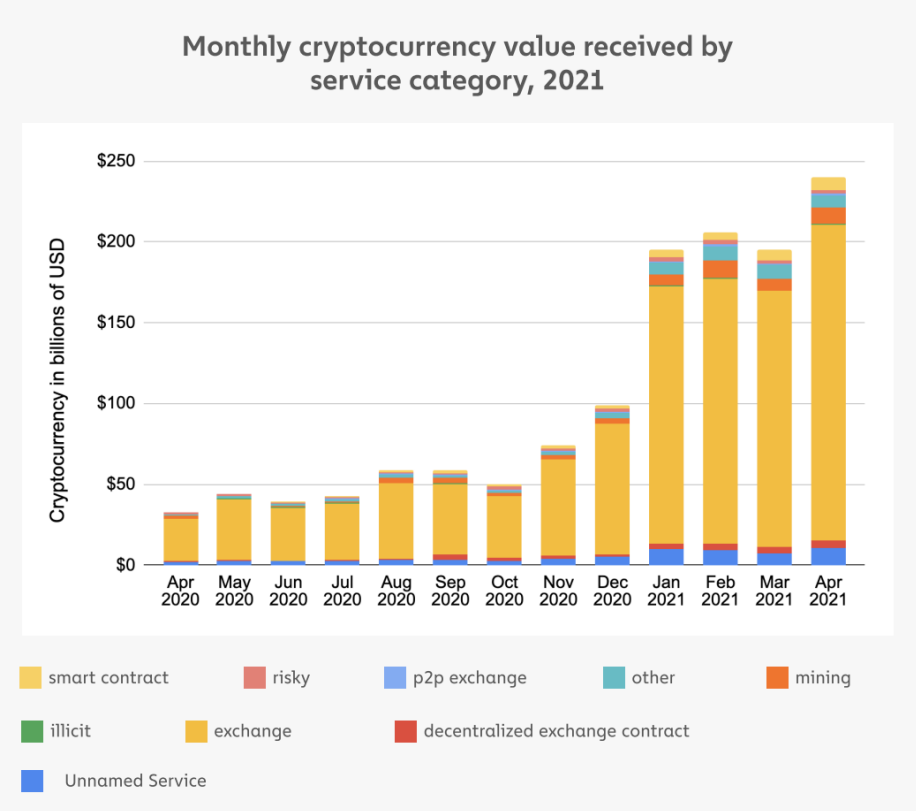

Figure 6 (Source: Chainanalysis "Key players in crypto report2")

- *Trading platforms*: there are P2P exchanges, also known as decentralized exchanges, such as LocalBitcoins, whose platforms are not managed by an entity or company that oversees and processes all transactions but solely by software, which merely connects a buyer with a seller, allowing him or her to conduct an online cryptocurrency trade. There are also trading platforms, such as eToro, which started as stock trading platforms and are now expanding their services to the cryptocurrency market.

- *Wallets*: are digital wallets for holding, storing and transferring cryptocurrencies. More specifically, they are software that stores the public and private keys that enable them to manage the cryptocurrencies they hold and interact with the blockchain network. A wallet provider translates the history of cryptocurrency transactions made by a user into an easily readable format, which closely resembles a standard bank account. The wallet is used to generate a public address corresponding to the wallet itself, which serves to identify the person making or receiving the transaction publicly. The address is a reduced version of the public key to make it easier to share. Wallets can be divided into two categories: hot wallets and cold wallets. Hot wallets are connected to the Internet and can be custodial or non-custodial (Hosted). In the case of custodial wallets, it is the wallet provider that holds the private key on behalf of the wallet owner. In contrast, in the case of non-custodial wallets (unhosted), only the wallet owner has access to its private key. The wallets provided by exchange platforms are usually hot wallets. The latter, which are divided into hardware and paper wallets, are not connected to the Internet and are both non-custodial wallets. They must, however, be connected to the Internet every time a transaction is desired. (The absence of a clear legal framework means that users' interests cannot be effectively protected legally and contractually, and they may therefore be exposed to large financial losses, for example, in the event of fraudulent conduct, bankruptcy or cessation of business of the exchange platforms where the wallets are held). As a result, cold wallets are considered a safer solution for storing cryptocurrencies, while hot wallets are more practical for those who carry out transactions daily.

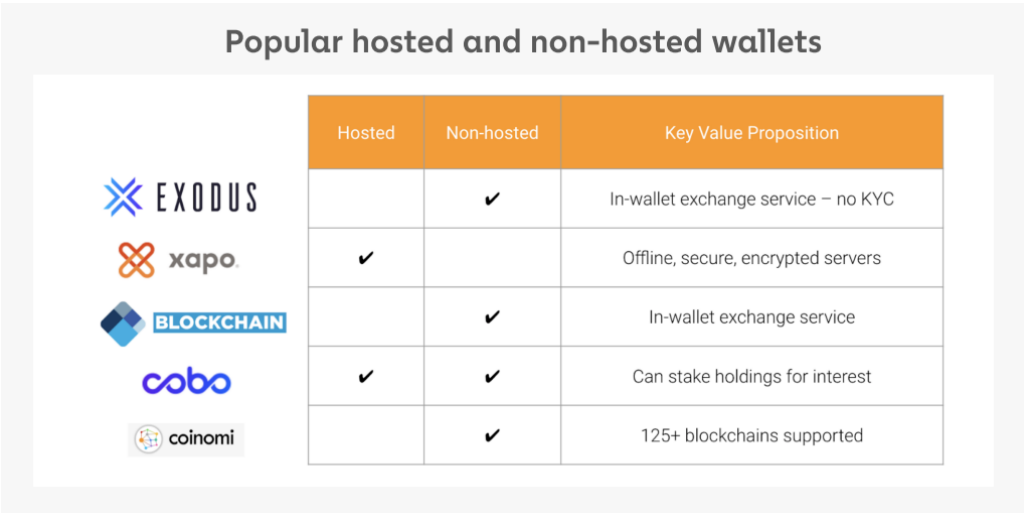

Figure 7 (Source: Chainanalysis "Key players in crypto report2")

Lastly, it is important to mention the new mechanism of ICO, which stands for Initial Coin Offering and is a mechanism to raise funds needed to finance a blockchain-based business project to increase capital, attract resources, or create and distribute a new cryptocurrency. The ICO process is similar to IPOs (Initial Public Offerings) and equity crowdfunding. However, unlike the latter, the ICO involves the issuance of digital tokens instead of traditional financial instruments, such as shares. The tokens are offered to investors who buy them with legal tender or cryptocurrency. The first phase of an ICO is to devise a business model and explore how blockchain technology can be used. In the second stage, the entrepreneur launching the ICO may request early feedback from investors. Next, the new project develops and publishes a white paper outlining the features and functionality of the new cryptocurrency, including information on the return on investment made by those who funded the project. Finally, the project is implemented through the use of the Blockchain involving investors. The ICO phenomenon has taken on considerable proportions, with a massive proliferation of this financing technique between 2017 and 2018, when over $11 billion was raised through ICOs, due to the ongoing search for alternative means of financing to traditional ones and investment vehicles capable of guaranteeing significant returns in a short period. However, the lack of specific regulation for such operations and the possibility of anyone launching an ICO has allowed numerous frauds to occur.

Chapter II: M&A in the crypto market

2.1 M&A market overview

Despite the economic and social uncertainties that characterized 2020 with the advent of the global Covid-19 pandemic, finance has continued to move with investments in innovative technologies, particularly growing exponentially to become the trend of early 2021 and the future in the post-pandemic world economy. Recent years have seen the emergence of new phenomena that have driven the upswing in investment activity. In particular, the boom in listings through SPACs and the resurgence of M&As supported by record valuations favoring innovative technology sectors. The US market witnessed unprecedented IPO activity, including traditional IPOs and the launch of special purpose acquisition companies (SPACs), which reversed a long negative trend for public company listings. After listing through SPACs, companies will necessarily pursue mergers and acquisitions, fueling the M&A market even more.

Technology deal activity has reached record levels in the M&A landscape, representing one of the most resilient sectors during the COVID-19 blockades[10], with public company valuations rising. Mergers and acquisitions will likely continue to grow in the innovative technology sector. Technology companies and startups will utilize this moment of interest and capital inflow to list themselves through SPACs. Companies have adapted to the new digital communication tools and reinvented their business models to prepare for the new era of the digital economy. Moreover, the pandemic has accelerated the technological transition process and allowed companies to pay more attention to the future of digitization.

Chapter I already pointed out that one of the main technological innovations capable of revolutionizing the financial system, and probably the entire economy, is cryptocurrencies and the ecosystem of underlying technologies, including Blockchain, tokens and decentralized finance. In the last few years, the sector has experienced a strong expansion of investments and a steady increase in M&A activity. The shift in perception towards cryptocurrencies can be attributed to various factors that fueled interest in the crypto sector. The most relevant are the increased adoption by mainstream financial institutions, the improved regulatory clarity, the maturation of the crypto market, the potential of blockchain technology, and the high return on investment. In addition, industry players such as exchange platforms are also reinvesting within the market to acquire and expand their market share. Some projects in the cryptocurrency space have already been acquired or are being acquired

[10] https://mergers.whitecase.com/highlights/technology-ma-remains-resilient-in-the-face-of-covid-19-crisis

by larger groups directly from the industry itself. M&A activity will accelerate over time as more projects mature that could demonstrate important synergies with the big players in the industry. At this point, market consolidation through M&A could be the next step in strengthening the remaining players. In addition, the involvement of large external companies and institutions has made it possible for investors to hold exposure to the market in a more regulated and secure manner. Compared to the initial public aversion to this asset class, many companies, in general, have changed their views on this issue and are now interested in the potential profitability of cryptocurrencies and their underlying blockchain technology. More data and analysis of pertinent market trends will be presented in the subsequent sections of this second chapter.

As the cryptocurrency industry enters a new moment in its history, it faces several challenges for further expansion through integration with traditional market infrastructures and maintaining a sustained pace of innovation and concrete adoption. To achieve these goals, industry participants may need to invest more time and resources in compliance and restructuring the industry, making continuous improvements and new solutions. The cryptocurrency space is now more than ten years old and increasingly dynamic and mature, with stable models of decentralized organizations and an abundance of new projects raising funds and investments worldwide. On one hand, mergers and acquisitions allow the industry to make the ultimate maturation. On the other hand, they create opportunities for crypto companies to converge externally with other industries that want to integrate innovative Blockchain and token technologies to broaden their adoption and diffusion.

Recent investments by large financial firms such as Goldman Sachs and JP Morgan, and acquisitions of blockchain-related technology companies by Big Tech, such as Facebook with Chainspace have signaled strong interest in the cryptocurrency space. As blockchain technology solutions are being applied in an increasing range of sectors such as financial markets, healthcare, identity, privacy, manufacturing and logistics, the attention paid by academics and business professionals to this technology is steadily growing.

Governments are also gaining interest in this sector, developing their own applications for cryptocurrencies. They are called "*government cryptocurrencies*" and the term, which is not formally adopted, is used to refer to the one issued by a country as a legal tender. The first was launched in 2018 by Venezuela and is called the *Petro.* They claim that it is backed by the country's reserves of oil, gold, and diamonds and that each unit of the currency is pegged to the value of one barrel of Venezuelan oil. According to Petro's official website, it can be used to make purchases at businesses and institutions within the country that accept it and can also be exchanged for other cryptocurrencies

or fiat currency. However, many foreign observers have criticized the Petro as a scheme to bypass international sanctions and retailers have reportedly refused to accept it as a form of payment.

Another form of government-backed cryptocurrency is when a country recognizes an existing digital currency, such as Bitcoin or Ethereum, as legal tender. This is the case in El Salvador, which became the first country in the world to pass a "Bitcoin Law" in June 2021, allowing the use of Bitcoin alongside the US dollar, which has been the official currency of El Salvador since 2001. This is similar to a country adopting the currency of another country as legal tender, also known as dollarization. However, unlike other dollarized economies, El Salvador does not consider Bitcoin a legal liability to its central bank and it does not commit to any fixed exchange rate between Bitcoin and US dollars. This means that holders of Bitcoin may experience fluctuations in value.

2.2 The Rise of SPACs

One of the new investment trends in the Tech industry are the Special Purpose Acquisition Companies (SPACs)[11]. They are publicly traded corporations established for the purpose of acquiring one or multiple businesses and have been present in the market since the 1990s but have seen a rise in popularity only in the last couple of years. Typically, the target company is identified after the initial public offering (IPO), and the funds from the IPO are held in a trust until an acquisition occurs. If the acquisition is not completed within a specific period, the SPAC is dissolved, and the funds are returned to the investors.

The process of SPACs involves two phases: the IPO phase and the SPAC combination phase (or the "de-SPAC" phase). The IPO phase has similarities with a typical IPO process, but the disclosures required for a SPAC IPO are more limited as the SPAC does not have any material historical operations or assets to disclose. Typically, SPAC IPOs sell units, each composed of one share of Class A common stock and a fraction of a warrant. The sponsors and founders of the SPAC receive Class B common stock and additional warrants through a private placement.

In the next figure the diagram illustrates an example of the typical economics of SPAC funding:

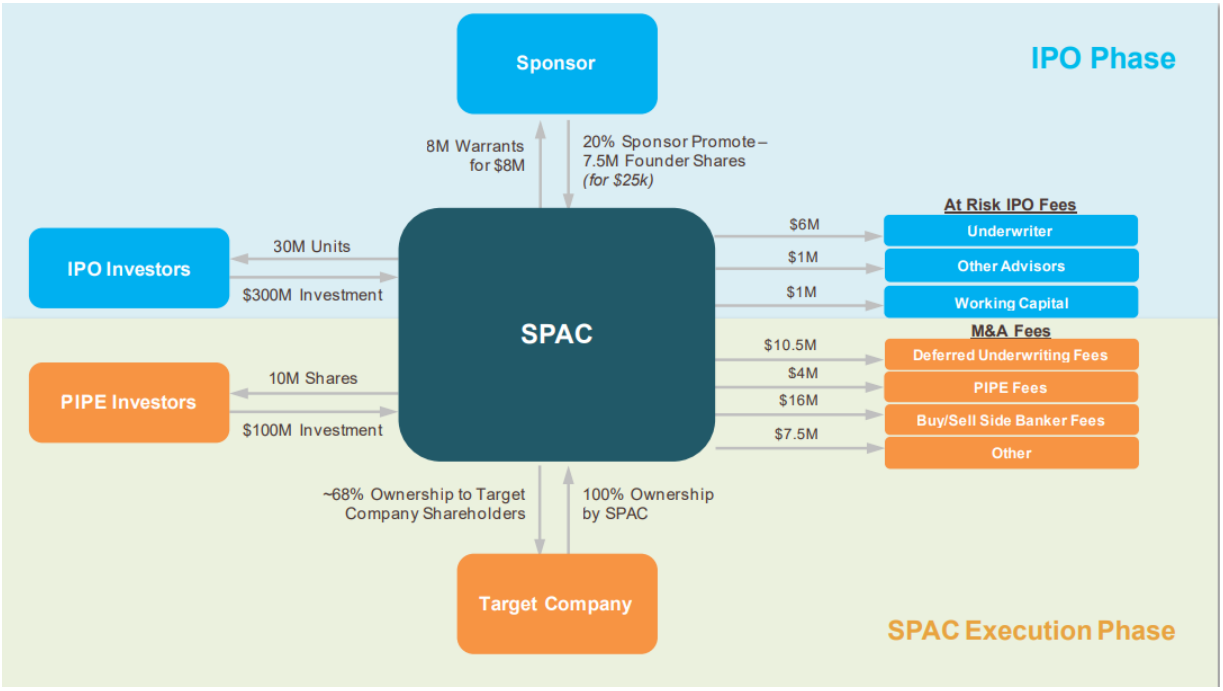

Figure 8 *(Source: Kslaw "The Rise of Crypto SPACs")*

[11] https://www.kslaw.com/attachments/000/009/652/original/The_Rise_of_Crypto_SPACs.pdf?1651761401

After an initial public offering (IPO), the next step in a special purpose acquisition company (SPAC) process is to identify and acquire a target company. The acquisition, or "de-SPAC" phase, is similar in many ways to a typical public merger and acquisition process. The process of executing a SPAC typically takes around 3-6 months from start to finish, and includes the following steps:

-Preparation phase: This includes drafting and signing a letter of intent (LOI) with the SPAC sponsor, as well as appointing advisers and establishing a timetable for the transaction. Additionally, this phase involves resolving capital structure issues and evaluating potential accounting issues, as well as evaluating the composition of the Board of Directors.

-Negotiation phase: During this phase, the definitive transaction agreement and any other material agreements are negotiated. Additionally, the S-4/proxy statement for the acquisition is drafted, and financial statements and due diligence are prepared.

-Marketing phase: In this phase, investors are engaged through management presentations and the private investment in public equity (PIPE) transaction is marketed.

-Closing phase: This phase includes finalizing the transaction agreement and PIPE, filing for Hart-Scott-Rodino (HSR) approval if required, filing the S-4/proxy statement for the acquisition, and responding to comments from the Securities and Exchange Commission (SEC) as needed. Additionally, a vote among SPAC shareholders to approve the acquisition is held, key institutional shareholders are met with and the transaction is closed.

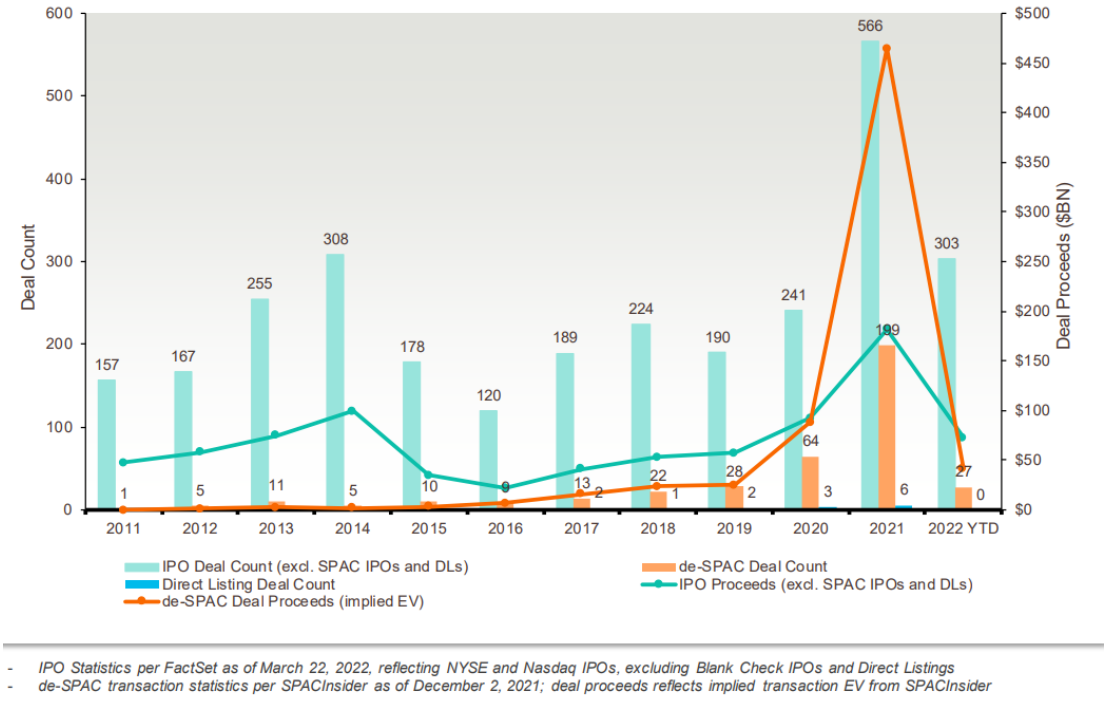

Figure 9 (Source: Kslaw "The Rise of Crypto SPACs")

This year, several well-known companies in the cryptocurrency industry, such as Bakkt, and CompoSecure, have either gone public or are planning to do so through special purpose acquisition companies. This approach is attractive for cryptocurrency companies as it is typically faster, simpler, and more cost-effective than traditional methods. Many companies in the industry are taking note of the lengthy IPO process for Coinbase and opting for a SPAC instead. Additionally, cryptocurrency companies are seen as a potential opportunity for SPAC investors.

The majority of completed Special Purpose Acquisition Companies across various industries are based in the United States, and this trend is also true for crypto-related SPACs. As of April 2022, several SPACs have completed acquisitions of crypto-focused target companies. The main ones are included in the following table:

Date of Acquisition	**SPAC Entity**	**Target Entity**	**Exchange And Ticker**
April 29, 2022	TradeUP Global Corporation	SAITECH Limited	NASDAQ: SAI
January 20, 2022	Power & Digital Infrastructure Acquisition Corp.	Core Scientific Holding Co. (now Core Scientific, Inc.)	NASDAQ: CORZ
December 27, 2021	Roman DBDR Tech Acquisition Corp.	CompoSecure Holdings, Inc.	NASDAQ: CMPO
October 18, 2021	VPC Impact Acquisition Holdings	Bakkt Holdings, LLC (now Bakkt Holdings, Inc.)	NYSE: BKKT
August 27, 2021	Good Works Acquisition Corp.	Cipher Mining Inc.	NASDAQ: CIFR
May 25, 2021	Capricorn Business Acquisition Inc.	Canada Computational Unlimited Corp.	TSXV: SATO
October 1, 2020	8i Enterprises Acquisition Corp.	Diginex Limited (now Eqonex Limited)	NASDAQ: EQOS

Table 1 (*Source: Kslaw "The Rise of Crypto SPACs")*

2.3 Investing in crypto and blockchain – valuation problems

Investing in the crypto assets space presents many challenges for actors outside the market, particularly for companies in non-technology sectors. The due diligence process for technology and innovative target companies implies new valuation methods and integration processes as they adopt new and different business models from traditional ones. This is especially true for companies in the cryptocurrency and blockchain market that use a completely new corporate structure and technologies. Some basic principles are the same, but there are still significant differences that need to be considered, leading to a new version and concept of M&A.

Usually, for company valuation, the DCF (Discounted Cash Flow) method is one of the preferred, together with multiples, because it allows a better understanding of business dynamics. For the valuation of companies using the DCF method, it is necessary to determine an appropriate discount rate to be applied to forecast the company's future cash flows. A DCF analysis is complex for the emerging business model of cryptocurrency companies as it is currently complex to make adequate projections since the forecasts of the future cash flows of these companies are still too limited and uncertain. In general, companies are also valued based on various other comparable parameters and multiples with similar competitors. This method may be inadequate where it is challenging to identify multiples and assess their actual comparability or where there are enough comparable companies in the same industry. Due to their different management and revenue generation models, many of the characteristics and multiples of traditional companies used in their valuation are not found in crypto companies.

Moreover, the nature of some tokens may not allow for the use of discounted cash flow methods or traditional applications of the market valuation approach. The valuation of a crypto asset depends fundamentally on its nature. The critical distinction is whether the asset in question grants its holder the right to a future cash flow, as in the case of an equity token, or to other services or resources, such as a utility token. There is still no universal accounting method to determine the value of a cryptocurrency company, but several factors can help estimate it for business decisions.

An essential contribution in this respect is the paper by *EY: "The Valuation of Crypto-Asset"*[12], which provides an overview of possible valuation alternatives for the most widely used and popular token types, such as security tokens, utility tokens and cryptocurrencies. There are mainly three valuation methods: Market Approach. Income Approach and QTM (Quantum Theory of Money).

[12] *https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/emeia-financial-services/ey-the-valuation-of-crypto-assets.pdf*

Income approach

The Income Approach is commonly used for income-generating assets such as rental properties, businesses, or investment portfolios. When applying the income approach to security tokens, the focus is on evaluating the potential future cash flows or income streams associated with the asset. This requires estimating the expected revenue or earnings generated by the token over a certain period and have to consider the liquidity and the stage of development of the token.

The most suitable approach to evaluate the fundamental value of a security token is through the income approach, which focuses on the cash flows generated for the token holder. This method is particularly beneficial for making investment decisions in markets where prices are influenced by inefficiencies, sentiment, and speculation. However, it might not align with the requirements of financial reporting and tax valuation standards, which typically emphasize market-based measures.

Regarding forecasting, traditional start-ups often exhibit unwarranted optimism in their projections, leading to a high failure rate. Despite this, many enthusiastic supporters of crypto-assets remain optimistic. Hence, it is advisable to conduct a thorough analysis of the targeted market's size and the potential market share that a project could capture. Evaluations of scenarios and corresponding probabilities should consider an accurate understanding of the market's progression.

Discount rates play a critical role in the income approach, but estimating them for early-stage ventures is highly subjective. Utilizing the widely accepted Capital Asset Pricing Model becomes challenging due to the absence of observable market data, such as betas from comparable quoted companies. Additionally, it requires making assumptions about large alpha risk premia. One solution is to estimate the discount rate based on venture capital (VC) investors' hurdle rates, obtained from survey data or published returns. The range of discount rates derived from VC investors' hurdle rates can serve as a starting point, with qualitative factors then considered to assess the project's risk profile compared to a typical VC investment, potentially increasing or decreasing the rate accordingly.

Market approach

The market approach to valuation involves determining the value of a token or asset by comparing it to similar assets that have been recently sold or are actively traded in the market, considering factors like liquidity and the stage of development of the token. This approach relies on the principle of supply and demand and considers the prices at which comparable tokens or assets are transacted.

Relevant scenarios range from that of a utility token at the point of launch, with no liquidity and no directly observable price, to that of a token with continuously updated prices in a direct trading pair against a fiat currency.

Provided that a token exhibits sufficient liquidity in a direct trading pair against a fiat currency, it is reasonable to adopt a quoted price as the market value for that token. Such treatment should also be consistent with the accounting fair value hierarchy. The recent volatility in token and cryptocurrency prices does, however, illustrate that market value may differ from fundamental value. Where a token cannot reliably be exchanged directly for fiat currency, or where liquidity is low, it is rational the adopt a discount for lack of liquidity. Adopting a valuation multiple is challenging, as financial metrics such as revenues or earnings are typically not sufficiently comparable between assets. Another option is to use the market capitalizations of recent and comparable Initial Coin Offerings (ICOs) as a substitute for estimating the total value of the issued tokens. This approach resembles the benchmarking method commonly employed in valuing early-stage companies during VC funding rounds.

Utility Token, given their lack of right to any future income stream, present unique challenges from a valuation perspective. Discounted cash flow modeling and traditional applications of the market approach may not be applicable. It does not, however, altogether preclude quantitative analysis.

The nature of utility tokens may not enable discounted cash flow modeling or traditional applications of the market approach, but opportunity costs and the QTM can provide proxies for the fundamental value of a token. Challenges remain in relation to the estimation of critical inputs under this approach, such as demand and an appropriate reflection of the time value of money. This estimation will inevitably require careful sensitivity analysis and a sense of realism about one's confidence in the concluded value range.[13]

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[13] *https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/emeia-financial-services/ey-the-valuation-of-crypto-assets.pdf*

Quantum Theory of Money (QTM)

The Quantum Theory of Money (QTM) is used for valuing utility tokens and cryptocurrencies, and it states that the value of money is determined by its supply and the velocity of its circulation.

The formula of QTM is:

$$M \cdot V = P \cdot Y$$

where the money supply (M) times money velocity (V) equals price level (P) times the volume of goods and services transacted in the economy (Y).

In the practice, real gross domestic product (GDP) is substituted into the equation as a measure of volume and the price level (P) should not be equated with the price of a token, which is subsequently define as p:

$$p = \frac{1}{P} = \frac{D \cdot s}{M^* \cdot f \cdot V}$$

p = token value P = price level D = market size s = market share M= total token supply f = float factor V = token velocity*

Using the model with utility tokens can provide good proxies for the fundamental value of them. However, regarding cryptocurrencies the model is less valuable since expectations are highly subjective and difficult to assess accurately, making the valuation of cryptocurrencies more difficult.

Precisely, because cryptocurrencies are not confined to a limited-purpose network providing a specific service for which demand can reasonably be modeled, the GDP term, Y, is almost impossible to estimate. In the context of a cryptocurrency, the variable "D" represents the overall demand in the global economy, while "s" represents the cryptocurrency's market share compared to other mediums of exchange, including traditional fiat currencies. Consequently, the price of a token, denoted as "p," becomes influenced by the expectations of market participants regarding the cryptocurrency's portion of global GDP transactions. Assessing such expectations is inherently subjective and challenging, making it difficult to determine with precision. Due to these factors, the effectiveness of the Quantity Theory of Money (QTM) as an analytical tool diminishes significantly.

Another important feature to consider about cryptocurrencies is the possibility of "burning" them irrevocably, removing them from circulation to increase the value of the remaining coins. Also, many platforms offer the possibility of "staking" them, an incentive system where a token holder actively blocks a certain number of tokens. These are withdrawn from the market for a predefined time and become inaccessible to investors and the company. In return for staking, the token holder obtains rewards in additional coins or voting rights. Staking is not yet clearly regulated, but it can be compared to a return on an active interest rate in traditional finance. Unlike traditional interest, staking is a more flexible and faster model managed automatically by a smart contract. In addition to analyzing the market capitalization based on the price of tokens and the number of tokens in circulation, it is also essential to know the number of tokens burned or staked and understand the burning mechanism. However, as mentioned above, a market or QTM approach may not be adequate or too complex with certain types of tokens.

Other valuation problems

During the valuation process of an M&A project, financial due diligence is crucial to understand the characteristics and potential of a company by identifying the benefits and risks involved. In addition to the conventional due diligence and valuations carried out during fundraising and M&A transactions, buyers in this sector must also verify and assess the technical components of the target company's cryptocurrency assets and structures (Technological Assessment-TA). This costly and challenging process requires the expertise of a blockchain and cryptocurrency specialist who comprehends the technical complexities and possesses the knowledge to ask the right questions[14][15].

As a relatively new technology, Blockchain has not undergone the standardization procedures that could lead to the widespread adoption of one or two universal technical standards. A company built on a token model does not generate cash flows from selling products like traditional models and the entire financing and revenue generation is based on the management and valuation of tokens. TA is crucial to ensure that the acquiring company can effectively leverage the acquired entity's technology for growth and strategic advantage. When it comes to crypto companies and blockchain technology, this process can be especially complex and important. When carrying out a technological review for a blockchain-based firm, the following elements should be closely examined:

1. **Platform Capacity**: This involves assessing the robustness and scalability of the blockchain platform being used. (e.g. Does it have the capacity to handle a surge in transactions? How efficient are the underlying protocols? How resistant is it to potential attacks or hacks?)
2. **System Compatibility**: As there are no universal technical standards in blockchain, it's important to evaluate the blockchain's compatibility with other systems.
3. **Token System Design**: This includes the mechanics of how tokens are issued, distributed, and traded. (e.g. Are there any restrictions on the total token supply?)
4. **Compliance with Regulations**: Regulatory frameworks for blockchain and cryptocurrencies are continuously evolving. An assessment should evaluate the crypto company's compliance with current laws and regulations, and its ability to adapt to potential future changes.
5. **Security Standards**: Security of the cryptographic techniques being used and of the overall system from potential hacking attempts.

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[14] https://cointelegraph.com/news/mergers-and-acquisitions-are-rising-leaving-crypto-assessments-in-question
[15] *https://static2.ftitechnology.com/docs/case-studies/Assess+and+Advise+-+Pre-Acquisition+Crytpocurrency+Assessment.pdf*

6. **Future Adaptability**: Since the rapid pace of technology evolution, it's essential to assess how well the technology can adapt to future changes and improvements. This includes evaluating the team's expertise and the overall strategic vision.
7. **Proprietary Technology**: If there's proprietary technology involved, assess its worth and the protection around it.

These points are fundamental to the success or failure of a crypto firm, and an extensive technological assessment process can provide a comprehensive understanding of its current state and future prospects. A properly executed review can aid in avoiding unfavorable merger or acquisition outcomes, such as overvaluation, legal penalties, technological mismatches, and unexpected security vulnerabilities.

In addition, the assessment of a company's worth is made more complex due to the various regulations surrounding how businesses must present their cryptocurrency holdings in their financial reports. According to current US GAAP accounting guidelines, firms that hold digital currencies in their treasury must consider them as intangible assets.[16] If the value of these holdings decreases, it must be recorded as a loss, but if it increases, no corresponding adjustment is allowed to be disclosed, even as a non-GAAP metric with explanatory disclosure. However, a recent SEC Staff Accounting Bulletin stipulates that companies holding cryptocurrency as custodians for others must record these holdings as liabilities, measured at their fair value on the relevant date. These intricate rules make it challenging for sponsors, advisors, and investors to comprehend the impact of cryptocurrency holdings on a company's financial status and operations, and therefore, its overall valuation.

Concluding, the hurdles concern valuation, due diligence, and the post-closing integration phase, which is often a critical measure of long-term success for digital M&As. Acquiring blockchain startups or crypto companies requires reshaping the traditional integration strategy and carefully planning its implementation. It may require dealing with different cultures, business practices and processes, legal frameworks and approvals from local regulators. Therefore, acquirers should consider including industry experts in the due diligence process to ensure that they analyze the costs and practical realities of effectively adapting a blockchain-enabled technology into the acquirer's infrastructure.

[16] "Accounting for Digital Assets: Key Considerations". – ISDA (https://www.isda.org/a/88VgE/Accounting-for-Digital-Assets-Key-Considerations.pdf)

2.4 The Main m&a categories

M&A in the cryptocurrency sector can be divided into two main transaction categories: Strategic M&As, which focus on consolidation through mergers and acquisitions between players in the same market, and Financial M&As, by financial companies with investment and portfolio diversification purposes or by traditional companies from other sectors acquiring cryptocurrency companies to achieve technological convergence.

Financial M&As are used by venture capital or private equity investment funds as an investment and portfolio diversification strategy or by private cryptocurrency companies that want to list themselves through the reverse merger mechanism or include Leverage Buy-Out (LBO) transactions.

Strategic M&As include transactions by the most significant players in the industry focused on absorbing smaller startups to integrate know-how, diversify to broaden the range of offerings and consolidate market share through vertical and horizontal M&As. Talent acquisitions have been the most common type of strategic M&A in the cryptocurrency sector. It is a widespread tool in all technology sectors where developers' skills represent a critical competitive advantage. Companies often find that the fastest way to build a team of developers is to take talent externally through mergers and acquisitions, often leading software developers and software engineers in their respective areas of expertise.

Diversification and consolidation M&As are necessary for companies to grow and create technological synergies by merging with other companies or acquiring smaller startups. Over time, many projects and companies have emerged in the sector, providing different products and services for cryptocurrencies and application infrastructure on Blockchain. An ecosystem consisting of many projects and startups with diverse offers and services that, through M&A, have been integrated into one larger and more efficient structure. Today, the boundaries between the different branches of the cryptocurrency industry are ever more blurred. An increasing number of companies can now be seen as a universal platform given the wide range of products and services offered to their customers. For instance, today's exchanges, like Binance, also often provide the service to store purchased cryptocurrencies within their platform securely and payment companies, like Paypal, started to offer comprehensive cryptocurrency transfer.

According to a study made by *TokenData*[17], M&A activity in the cryptocurrency sector until 2016 was mainly focused on strategic deals. In 2017-2018, the market saw a rapid increase in financial

[17] *Report: The State of Crypto M&A (August 2022) – Tokendata Research (https://research.tokendata.io/2022/08/08/the-state-of-crypto-ma-2022/)*

M&As, which accounted for more than 50 per cent of total activity. Unsurprisingly, at the end of 2018, when the market value of cryptocurrencies dropped, financial M&As also declined significantly. Since then, trading activity has been predominantly strategic in a maturing industry, moving away from small startup acquisitions towards larger horizontal and diversification mergers. Although financial M&As have remained rare in the intervening years, SPACs are reporting high levels for this deal in 2021 and more are expected in the future as also previously seen.

Until now, the market has focused on transactions familiar to traditional finance, with mergers or acquisitions of centralized companies. Although the decentralized model underpins the blockchain cryptocurrency project, it is not surprising that only pure decentralized M&A has taken place so far, as many cryptocurrency projects are still at the beginning of their development and still centrally managed. However, with the rise of ICOs (Initial Coin Offering) and the spread of tokenization, the degree of decentralization will also quickly increase within corporate structures, and new stakeholders, concepts and mechanisms will appear in the M&A process.

Figure 10 : (*y-axis: number of deals*)[18]

[18] Source: *The State of Crypto M&A (August 2022) – Tokendata Research*

Total Global Cryptocurrency Market Cap

Figure 11 (*source: https://coinmarketcap.com/charts/)*

2.2 Dataset built on M&A transaction in Crypto ad Blockchain industry.

To gain a more comprehensive understanding of the cryptocurrency and blockchain industry, we created a dataset that includes data on various merger and acquisition and fundraising deals. This dataset allows us to investigate the phenomenon in a more empirical manner and verify our previous findings.

The data were retrieved from the database of MergerMarket, cross-referenced with Pitchbook and Crunchbase, and consisted of 267 observations of the related M&A and Fundraising rounds in the time period from 2019 to 2022. Acquirers, bidders, and acquired companies, targets, both belong to the global context, including Americas, Europe, Middle East, Africa and Asia-Pacific country and have been divided into three main region categories: EMEA (Europe, Middle East, and Africa), APAC (Asia Pacific) and AMERICAS.

For each deal we are considering the following parameters:

a) Target Company

b) Bidder Company

c) Deal date (announcement)

d) Deal size (in million, USD)

e) Deal type (M&A and Fundraising)

f) Target and bidder dominant sector

g) Target and bidder Country

Global Landscape in M&A

Looking at the data, the 2020 was the year of normalization for blockchain technology. The flow of deals remained virtually stable with some increases compared to the previous year (2019). Merger and acquisition activity within the blockchain/crypto market consist mainly of consolidation between industry participants, with little involvement of outside companies. Continuing the trend of the previous year, exchanges and other trading-related companies were the most active strategic acquirers. Binance, BitGo, Consensys and Kraken acquired companies to gain regulatory approval in new jurisdictions or financial products. One of the dominant investment trends in 2020 was the influx

of capital to decentralized finance applications (DeFi). The success and quality of new projects attracted the involvement of funds or firms, which had little exposure to this sub-sector at the beginning of the year. The acquisition of *CoinMarketCap OpCo LLc* by *Binance Holdings Ltd* in the first quarter of 2020 for $ 400m was the biggest deal of the year, followed by the acquisition of NINE by Digital Currency Group for $ 252m. Coinbase also scored a significant deal: the acquisition of cryptocurrency broker Tagomi for $ 75m.

In contrary the 2021 was un unprecedent year for the crypto and blockchain companies since the numbers of deal, together with the total deal value, increased significantly. The total value of crypto M&A in 2021 (Figure12) has mirrored the rally in crypto prices, with an increase in the total value of deals of almost 10x the value of 2020. The main reason could be attributed to the great euphoria in the crypto market and the numerous Special Purpose Acquisition Company Deals (SPAC). The number of deals also increased from 2020 in comparison with the previous ones in 2021 (Figure 13). The pandemic has accelerated the technological transition process and allowed companies to pay more attention to the future of digitization. The biggest deal was the acquisition of *Circle Internet Financial, Inc*. by *Concord Acquisition Corp.* for $ 9000m followed by the acquisition of *Bullish (GI) Limited* by *Far Peak Acquisition* for $ 8127m. The acquirers are both special purpose acquisition companies (SPACs) confirming what we have previously said about the boom in SPACs transaction during the 2021.

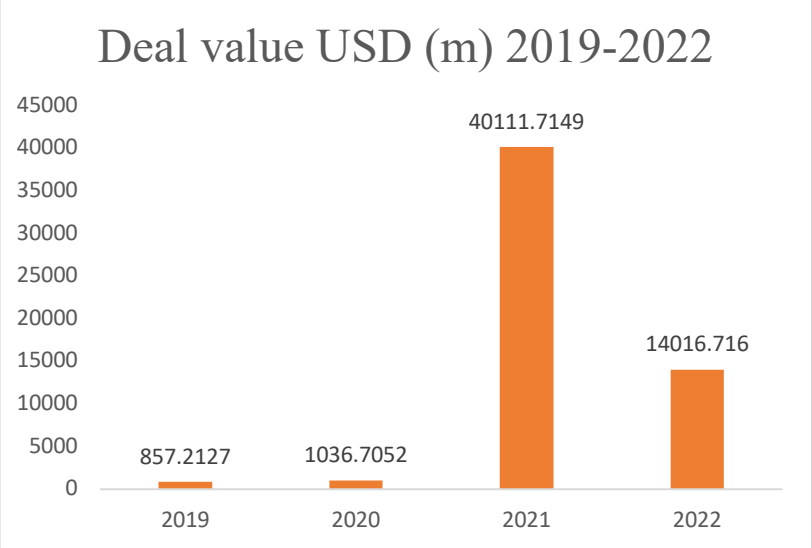

Figure 12

However, during 2022 the industry faces some downturn indicating a more conservative way in assessing M&A opportunities and cautions about mega deals. Deal size and deal counts decreased from the number of the previous year. One of the main reasons is the bearish sentiment in the market especially for the crypto-assets together with the poor economic and political global conditions.

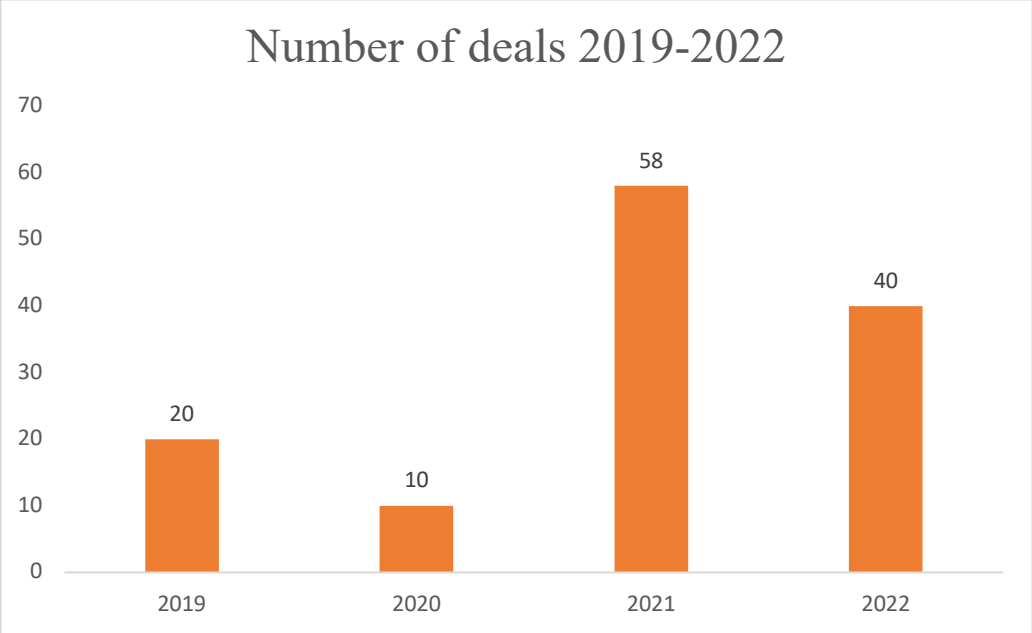

Figure 13

It is also evident from figure 14 and 15 that the America is the main grounding territory for acquisitions. EMEA regions are the second, while APAC regions the last one. However, M&A activity continues to move away from the Americas, with more deals occurring in APAC and EMEA. We can observe a trend that indicates an increase in the number of acquired companies that belong to APAC from 2020 to 2022. (Figure 14)

Also concerning the Bidder regions, the American regions are always predominant (Figure 15). Nevertheless, in this case we can observe an opposite trend that sees APAC regions to decrease in favor of Americans regions, while EMEA remains quite stable over time.

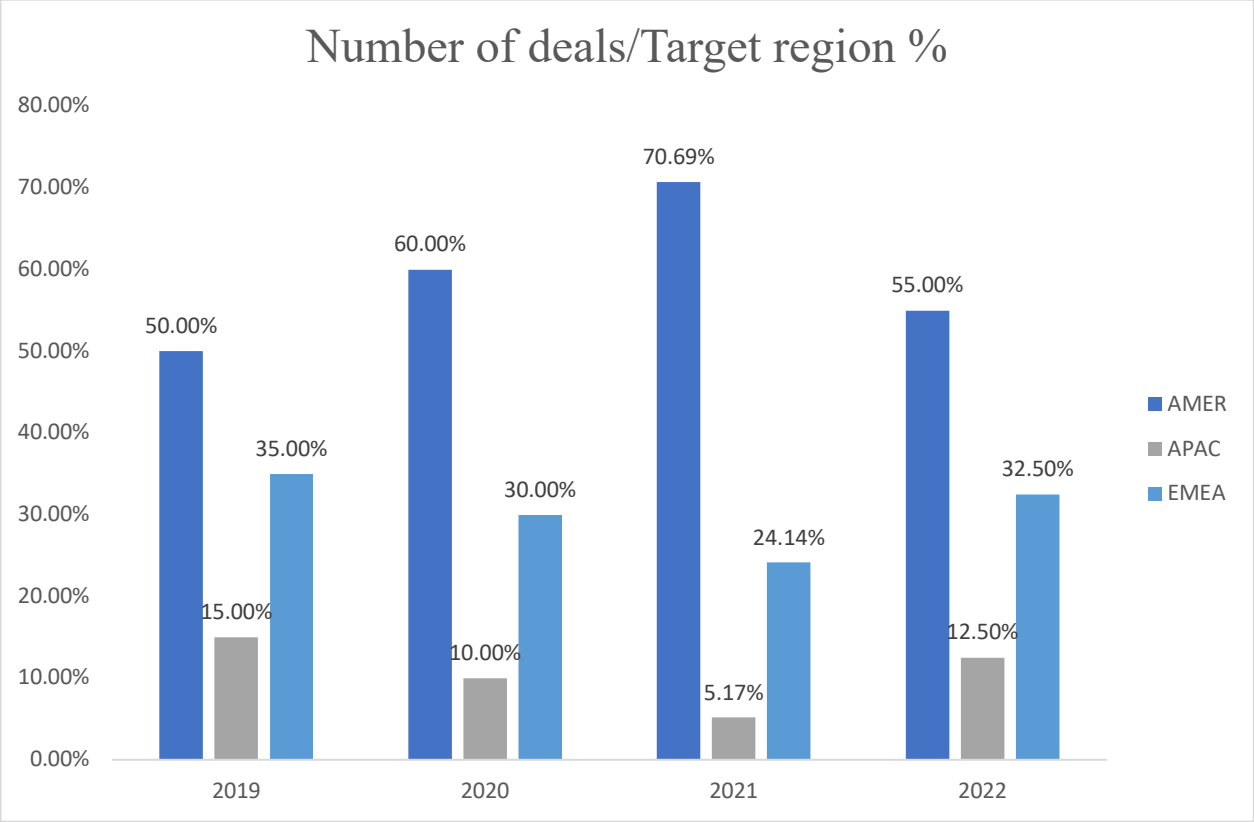

Figure 14

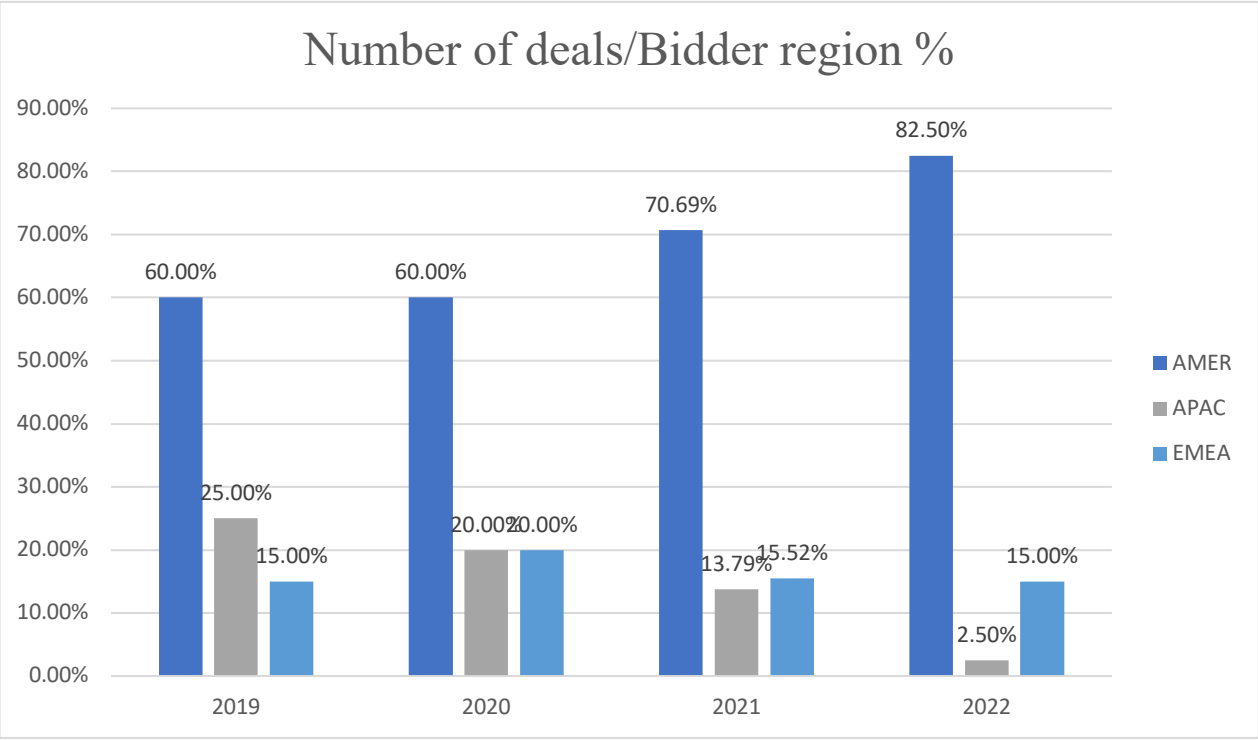

Figure 15

Int the table below are listed all the top three M&A deals from the dataset in the years from 2019 to 2022.

Top 3 deals, 2019

Announced Date	Target	Bidder	Deal Value (usd m)
21/05/2019	Marqeta, Inc.	Goldman Sachs & Co. LLC; Granite Ventures LLC; Lone Pine Capital LLC; Spark Capital Partners LLC; Visa Inc.; Vitruvian Partners LLP; Coatue Management, L.L.C; 83 North	260
25/03/2019	CreditEase Corp.	Yirendai Ltd.	146.09
04/02/2019	Crypto Facilities Ltd	Payward, Inc.	100

Top 3 deals, 2020

Announced Date	Target	Bidder	Deal Value (usd m)
26/08/2020	Blockfolio, LLC	FTX Trading Ltd.	150
27/05/2020	Tagomi Trading, LLC	Coinbase, Inc.	41.8
04/08/2020	Arcane Crypto AS	Vertical Ventures AB	37.28

Top 3 deals, 2021

Announced Date	Target	Bidder	Deal Value (usd m)
08/07/2021	Circle Internet Financial, Inc.	Concord Acquisition Corp.	9000
09/07/2021	Bullish (GI) Limited	Far Peak Acquisition	8127
21/07/2021	Core Scientific Operating Co	Core Scientific Inc	4000

Top 3 deals, 2022

Announced Date	Target	Bidder	Deal Value (usd m)
20/04/2022	Eliptik Yazilim ve Ticaret AS	Coinbase, Inc.	3200
07/04/2022	Wyre, Inc.	Bolt Financial, Inc.	1500
27/09/2022	Voyager Digital, Ltd.	West Realm Shire Services Inc	1422

Table 2 – Top 3 M&A Deals for each year (2019 to 2022)

The 2022 has not reached the same record value of 2021, but considering the global and sector specific economic downturn, the numbers are still promising. This thanks to the interest of large investors, institutional players, and crypto platforms, and the growing popularity of non-fungible tokens (NFTs), decentralized finance applications (Defi), central bank digital currencies (CBDCs), and stablecoins. DeFi is a compelling thread in the crypto space. Developers are racing to use blockchain to disrupt traditional financial intermediaries in areas such as micro-lending and automated liquidity.

M&A deals from 2021 became more diversified and more evenly divided among different sectors, reflecting a broader development across the industry. This is in contrast with previous years in which substantial activity was mainly focused on trading services such as exchanges and brokers. The diverse number of transactions across business sectors highlights the maturity of the crypto ecosystem and can be seen as a sign of the broader adoption of crypto services. While the number of M&A deals were predominantly made by cryptocurrency and blockchain companies in 2019 and 2020, other types of Acquirers have emerged in 2021. The most active are venture capitalists (VCs) and incubators as already mentioned in Chapter 1.

The Banking industry is also highly attracted by this type of technology. A research from Blockdata[19] found that a majority of the top 100 banks, as measured by assets under management, had invested in companies operating in the blockchain and digital currency spaces either directly or through subsidiaries. The study found that a total of 23 banks have made at least one investment in blockchain or cryptocurrency-related entities from August 2021 to May 2022. Among these, 6 were new investors making their first deals in the ecosystem, while the rest were returning investors such as Morgan Stanley, BNY Mellon, and Goldman Sachs.

In terms of the most active investors based on the number of investments, the study found that KB Financial Group made the most investments (8), followed by United Overseas Bank (7), Citigroup (6), Goldman Sachs (5), and Commonwealth Bank of Australia (4). It should be noted that these totals take into account any investments made by the above organizations as well as their subsidiaries and corporate venture arms (Figure 16).

In most cases, the specific investment amounts were not revealed, as the banks participated in funding rounds alongside multiple other investors. However, the study determined the total funding amounts of the rounds in which they participated. Based on this analysis, the investors active in the largest funding rounds were:

[19] *Blockdata.tech research "Top bank investing in crypto & blockchain companies."*

- Morgan Stanley ($ 1,100m in 2 rounds).
- Goldman Sachs ($ 698m in 5 rounds).
- BNY Mellon ($ 690m in 3 rounds).
- Commonwealth Bank of Australia ($ 421m in 4 rounds).
- Citigroup ($ 215m in 6 rounds).

Figure 16 (Source: Blockdata.tech research "Top bank investing in crypto & blockchain companies.")

In the blockchain industry, it is not surprising to see that custody solutions and technology providers have remained popular among top banks, with some of the largest funding rounds taking place since August 2021. These deals include: NYDIG ($1 billion), Fireblocks ($550 million), Gemini ($400 million), and Anchorage Digital ($350 million). In fact, custody and technology solution providers have raised mega-rounds (over $100 million) from banks, including:

- Morgan Stanley, which made a follow-on investment in NYDIG's $1 billion Growth Equity round.
- BNY Mellon, which made a follow-on investment in Fireblock's $ 550m Series E.
- Commonwealth Bank of Australia, which participated in Gemini's $ 400m Series A.
- GS Growth, which invested in Anchorage Digital's $350 million Series C.

Furthermore, Banks also have been investing in Blockchain Infrastructure companies. One example is Morgan Stanley’s investment in Figment, which is a Blockchain Infrastructure and service company focusing on growing the Web3 ecosystem by the adoption of Proof of Stake (PoS) blockchains. This Investment highlights the significance of protocol staking, middleware (software that different applications use to communicate with each other), and application-level solutions in the Web3 ecosystem.

Another emerging digital assets and crypto trading infrastructure provider, Talos has attracted attention from Wells Fargo Strategic Capital, BNY Mellon and Citi Ventures, due to its plans to expand support from centralized crypto trading to decentralized finance (DeFi) platforms.

Furthermore, Blockdaemon is another blockchain infrastructure company focused on node management and staking. They have raised several rounds of funding from Citi Ventures which participated in their Series C, J.P. Morgan Chase and Goldman Sachs who invested in their Series B round.

The presence and investment from these banks into this space demonstrate their focus on the continued development of blockchain infrastructure tools and services necessary to support the growing crypto ecosystem.

Chapter III: Can an M&A deal be funded with a crypto-asset? Tokenization and alternatives to fundraising: Initial Coin Offering (ICO)

3.1 Funding M&A deals with cryptocurrency

The increasing adoption of cryptocurrencies and blockchain technology has transformed the financial landscape, offering new possibilities for companies operating in the crypto-blockchain market. Among these opportunities, in this chapter, we will analyze the potential of funding mergers and acquisitions transactions with digital assets such as Bitcoin or other cryptocurrencies, together with the main criticalities. This innovative approach represents a paradigm shift, challenging traditional deal-making methods and financial systems. We will also look at real-world cases to better understand the potential of this approach. The analysis presented in this chapter provides valuable insights for companies considering the use of digital assets in their M&A strategies and contributes to the ongoing discourse on the future of finance in the era of blockchain and cryptocurrencies.

Although the use of cryptocurrencies for M&A transactions is still in its infancy, it holds the promise of streamlining processes, reducing costs, and expanding market access. At the same time, funding M&A deals with cryptocurrency introduces a unique set of challenges, including regulatory uncertainty, price volatility, and cybersecurity risks. As the field is still evolving, there are not many well-known cases, and most elements are undisclosed or unavailable. Despite this, we can extrapolate, based on what we have analyzed in previous chapters, the possible advantages of using digital assets and cryptocurrencies for M&A financing:

-*Speed and Efficiency*: Cryptocurrencies enable faster and more efficient transactions compared to traditional financial systems. Due to their decentralized nature and the absence of intermediaries, cryptocurrency transactions can be executed quickly, often within minutes. This can significantly reduce the time required to complete M&A deals, improving the overall efficiency of the process.

-*Cost-effectiveness:* Cryptocurrency transactions generally involve lower fees compared to traditional banking services, making them a more cost-effective option for M&A funding. Thanks to blockchain automation, many intermediary costs could be avoided, as in the case of Initial Offering and Security Coin Offering. Moreover, since cryptocurrencies are not tied to specific countries or jurisdictions, currency conversion costs can be minimized, further improving the financial efficiency of M&A

transactions. This means that if an M&A deal is conducted using a cryptocurrency, the parties involved do not need to convert from one national currency to another eliminating the need for conversion and the costs associated with it.

-*Global Reach and Accessibility*: Cryptocurrencies facilitate borderless transactions, making it easier for companies to engage in cross-border M&A deals. The ability to transfer digital assets seamlessly across jurisdictions can help firms tap into new markets, access resources, and expand their operations more effectively. Additionally, cryptocurrencies can provide financial services to unbanked or underbanked populations, potentially opening new opportunities for growth in the crypto-blockchain sector. One example are the Decentralized Finance (DeFi) initiatives running on blockchain networks that remove the obstacles faced by conventional banking institutions in providing financial services. Thus, DeFi empowers underbanked individuals by granting them access to previously inaccessible opportunities and products like loans and investments.

-*Transparency and Security:* Blockchain technology, which underpins cryptocurrencies, provides a transparent and tamper-proof record of transactions, as we already pointed out in the previous chapters. This can increase trust between parties involved in M&A deals and reduce the risk of fraud. Furthermore, the decentralized consensus mechanisms employed by cryptocurrencies enable participants to validate transactions without relying on a central authority, enhancing the security and integrity of the M&A process.

Unfortunately, as already mentioned, the advantages are not without risks. The main obstacles could be:

-*Regulatory and Legal Challenges*: One of the most significant challenges in using cryptocurrencies for M&A funding is the uncertain regulatory landscape. The legal status of cryptocurrencies varies across jurisdictions and the understanding and definition of crypto assets is not universally agreed upon, creating potential difficulties for companies seeking to fund M&A deals using digital assets. Additionally, when it comes to integrating digital currencies in the M&A landscape, we're faced with two considerable obstacles: Anti-Money Laundering regulations (AML) and Know Your Customer processes (KYC). These two standards are crucial in the finance sector to inhibit illegal operations like money laundering, fraud, and funding of terrorism and the regulations can diverge from one

country to another. For example, in the United States, AML laws include the Bank Secrecy Act (BSA), the USA PATRIOT Act, and Anti-Money Laundering Act (AMLA) which require financial institutions to monitor customer behavior and report suspicious transactions. Similarly, in the European Union, the 5th and 6th Anti-Money Laundering Directive (5AMLD and 6AMLD) applies AML regulations to virtual currency exchanges and custodial wallet providers.

In the context of digital currency transactions and M&A financing, these guidelines introduce unique difficulties.

1) **Anti-Money Laundering (AML):** The purpose of AML regulations is to block the transformation of illicitly obtained money into legitimate financial assets. Given the semi-anonymous nature of digital currencies and their ability to facilitate cross-border transactions, they can be seen as a potential medium for money laundering. As such, M&A operations that involve digital currencies must strictly adhere to AML guidelines. This adherence may involve complex tasks like tracing the origin and flow of digital assets, comprehending the context of past transactions, and ensuring the funds involved have no ties to illicit activities. Certain jurisdictions have specific AML guidelines for digital currencies as already mentioned.
2) **Know Your Customer (KYC):** KYC procedures are a critical component of broader AML initiatives. They are methods businesses generally employ to authenticate their clients' identities. In conventional financial systems, this typically involves presenting government-issued IDs, proof of residence, and occasionally job information. In the digital currency realm, however, KYC can present more of a challenge due to the inherent pseudonymity of blockchain transactions. Despite this, companies involved in M&A transactions need to be sure of whom they're dealing with to minimize risk. This might necessitate requiring parties to provide thorough identification data and possibly proof of digital currency ownership. Moreover, companies must consider the potential privacy issues tied to collecting and storing such sensitive data. This can be particularly challenging given the international nature of digital currency transactions, as different jurisdictions have varying data privacy laws.

Concluding, AML regulations with the KYC process add substantial complexity increasing the administrative burden and potential legal risks associated with such transactions.

-*Volatility and Valuation:* Cryptocurrencies, particularly newer and less-established digital assets, are known for their price volatility. This can create uncertainty when determining the value of an M&A deal and expose parties to potential losses due to sudden price fluctuations. Additionally, valuing an M&A transaction in cryptocurrency can be challenging due to the lack of standardized valuation methods further complicating the deal-making process.

1. **Volatility:** Digital currencies are famous for their extreme price fluctuations, driven by various factors including changes in regulations, technological progress, market manipulation, and broader economic trends. This volatility is even more extreme for newly minted or less established digital currencies due to their lower liquidity and susceptibility to speculative trading. When dealing with M&A transactions, the volatility of digital currencies can introduce significant risks. The worth of the digital currency used to fund the transaction can experience significant shifts over the duration of the transaction, which can take weeks or even months to finalize. This could lead to considerable losses if the value of the digital currency drops, or unexpected gains if it rises. This uncertainty can create a sense of unease for all parties involved. Moreover, the volatility of digital currencies can complicate reaching a consensus on the transaction's value. In standard M&A transactions, the transaction's value is typically agreed upon in a stable currency, and once determined, it doesn't change. However, with digital currency, the transaction's value could shift drastically from day to day, adding complexity to reaching an agreement and potentially causing disputes.

   For example: assume a company, X, is acquiring another company, Y, and decides to pay in Bitcoin. The agreed-upon transaction value is $10 million, equivalent to 200 Bitcoin, with 1 Bitcoin valued at $50,000. If the deal takes two months to finalize, and during that time Bitcoin's value drops to $40,000, the 200 Bitcoin originally agreed upon is now only worth $8 million, leading to a $2 million loss for Y. On the other hand, if Bitcoin's value rises to $60,000, the 200 Bitcoin would be worth $12 million, giving an unexpected gain of $2 million to Y.

2. **Value Assessment:** The value assessment of digital currencies is another intricate issue as already analyzed in Chapter 2. Contrary to traditional currencies or assets, there's no globally accepted methodology for assessing the value of digital currencies. Traditional value assessment methods often consider factors like cash flows, assets, and profits, which don't always apply to digital currencies. Moreover, many digital currencies lack the fundamental

financial data or long-standing track records typically used for value assessment purposes. This makes it challenging to identify the "fair" value of a digital currency, potentially leading to disagreements during the M&A negotiation process. Further complicating matters, the absence of a standardized valuation approach means that parties may use different methodologies for assessing the same digital currency, leading to potential discrepancies in value assessment. This can create difficulties in agreeing on the transaction's value and could even obstruct the transaction.

For this example, let's take a hypothetical cryptocurrency, CryptoX, which a company wants to use as a part of the transaction for an M&A deal.
Assume both parties utilize a QTM method, previously analyzed, where the price of a token, p, is a function of market participants' expectations of the share of global GDP that will be transacted through the given cryptocurrency. Arguably, such expectations are highly subjective and very difficult to assess with any degree of accuracy. Assume the first party values CryptoX at $100 each. The second party, however, using the same valuation method, values CryptoX at $80 each due to different estimates of such expectations.
This discrepancy can complicate the negotiation process since the two parties disagree on the fundamental value of the digital currency to be used. If they agreed to a deal worth 10,000 CryptoX, this disagreement would translate into a $200,000 difference in the perceived value of the transaction, which can significantly impact the deal's progress.

A possible solution to reduce the risk of price volatility is the adoption of Stablecoins. They are cryptocurrencies that are pegged to traditional fiat currencies like the US Dollar (USD) or Euro (EUR). These stablecoins aim to combine the benefits of cryptocurrencies, such as fast transactions and decentralization, with the stability of fiat currencies. The main ones are:

1. **Tether (USDT):** Tether is one of the most well-known stablecoins and is pegged to the US Dollar. It operates on several blockchain platforms, including Bitcoin (Omni Layer), Ethereum (ERC-20), and Tron (TRC-20).
2. **USD Coin (USDC):** USDC is another popular stablecoin tied to the US Dollar. It is a fully collateralized US dollar stablecoin and is an Ethereum powered coin created by CENTRE, a consortium that includes Circle and Coinbase.

3. **Binance USD (BUSD):** BUSD is a 1:1 USD-backed stablecoin approved by the New York State Department of Financial Services (NYDFS), issued in partnership by Binance and Paxos.
4. **Paxos Standard (PAX):** PAX is a digital dollar, each token is backed by one US dollar, held in reserve.
5. **TrueUSD (TUSD):** TUSD is a USD-backed ERC20 stablecoin that is fully collateralized, legally protected, and transparently verified by third-party attestations.
6. **Stasis Euro (EURS):** EURS is a stablecoin pegged to the Euro. It aims to bring the vast potential of cryptocurrencies to the stability of traditional fiat.

These stablecoins can then be used for a variety of purposes, including M&A transactions. However, the same considerations around regulatory compliance, including AML and KYC, apply to stablecoin transactions as well. And despite their design, stablecoins can sometimes deviate slightly from their peg due to market forces, so they aren't completely free from volatility.

Another solution could be to implement some form of stablecoins linked to the rate of inflation.
However, stablecoins tied specifically to an inflation rate would be slightly more complex. Inflation rates are not fixed and can fluctuate based on economic conditions, which could introduce some degree of volatility. However, it's theoretically possible to create such a cryptocurrency, and there may already be projects in the crypto space aiming to achieve this.
One interesting example is the project Reserve Rights token (RSV) (part of the Reserve Protocol[20]) that aims to preserve purchasing power by adjusting with inflation. It's a stablecoin that's pegged to a changing basket of assets in a way designed to be resistant to inflation. However, it's important to note that such projects are still experimental and may have risks associated with them.
In the context of M&A transactions, using a stablecoin could potentially mitigate some of the volatility and valuation challenges associated with cryptocurrencies. However, it would also introduce other complexities, such as ensuring the stablecoin is truly stable and backed by a reliable entity. It's also important to consider regulatory implications, as some jurisdictions may have specific regulations for stablecoins.

[20] https://reserve.org/protocol/

-*Cybersecurity Risks:* The use of cryptocurrencies in M&A transactions may increase the risk of cyber attacks, as hackers are often attracted to the potentially high rewards associated with digital assets. Companies involved in cryptocurrency-financed M&A deals must ensure that they have robust cybersecurity measures in place to protect sensitive information and digital assets from potential threats.

-*Limited Mainstream Adoption:* Despite the growing popularity of cryptocurrencies, their adoption remains limited compared to traditional financial systems. Many traditional financial institutions remain skeptical of digital assets, which may restrict the scope for collaboration and support in M&A transactions. Furthermore, the relatively limited understanding of cryptocurrencies and the lack of widespread infrastructure may hinder the successful completion of M&A deals financed with digital assets.

3.2 Real cases of M&A funded using cryptocurrencies.

Up until now, three significant M&A deals involving crypto-related businesses have been financed entirely with Bitcoin, with only one of them occurring in 2016 and the other two taking place in 2013. The first notable instance of using Bitcoin for M&A financing was in July 2013, when SatoshiDice, a Bitcoin gambling platform, was purchased by an undisclosed buyer. CoinDesk announced[21] that Erik Voorhees, the founder of SatoshiDice (S.DICE), finalized the company's sale for a total amount of 126,315 Bitcoins. At the time of the transaction, the deal was worth approximately $11.47 million. The company's stocks were traded on MPEx, a Bitcoin securities exchange based in Romania. The transaction presented a price of 0.00126315 BTC per share ($0.12), but Voorhees stated that SatoshiDice would offer MPEx shareholders an additional 0.00223685 BTC ($0.2) per share, in the interests of the MPEx stakeholders and the broader Bitcoin community. This makes the total return 0.0035 BTC ($0.32) per share. This constitutes a premium of 277% over the sale price and roughly 175% over the current market value of S.DICE shares on MPEx.

This was followed by BlockChain.info's acquisition of ZeroBlock, an app that consolidates Bitcoin exchange rates, in December 2013, but the data of the deal remained undisclosed.

The most recent notable transaction was KeepKey's acquisition of fellow Bitcoin wallet provider MultiBit in May[22]. The Seattle-based Bitcoin hardware wallet firm KeepKey has acquired UK-based software wallet company MultiBit in a deal conducted entirely in Bitcoin. The acquisition is KeepKey's first since its establishment in 2014, and it is the first publicly disclosed M&A deal of 2016 completed entirely with Bitcoin. The terms of the deal have not been revealed.
KeepKey Founder and CEO Darin Stanchfield stated that acquiring a prominent software wallet would significantly benefit KeepKey's customers and investors. He mentioned that KeepKey and MultiBit have always had a good relationship with the developers behind MultiBit.
Stanchfield said that utilizing Bitcoin for the transaction was a clear preference, as it offered an outstanding opportunity to use the future currency in a major transaction without converting it to US dollars. He believes that many companies will make similar deals using digital currencies in the coming years due to their convenience and security.

[21] https://www.coindesk.com/markets/2013/07/18/bitcoin-company-acquisitions-begin-gambling-site-satoshidice-sells-for-115-million-126315-btc/
[22] https://www.econotimes.com/KeepKey-acquires-MultiBit-in-deal-made-entirely-in-bitcoin-213331; https://financefeeds.com/keepkey-acquires-uk-based-multibit-entirely-bitcoin/; https://www.crunchbase.com/acquisition/keepkey-acquires-multibit--bd3020cb

The Bitcoin transaction allowed MultiBit to receive payment immediately without any holds, while KeepKey avoided wire and currency conversion fees.
Once KeepKey takes control of MultiBit's website and codebase, MultiBit HD users will be largely unaffected.

These transactions led some experts to speculate that Bitcoin might eventually become a widely accepted currency for major corporate deals. However, time has shown that such transactions remain infrequent and have been restricted to deals between companies operating within the Crypto market, a clear sign that the market is not yet mature.
The scarcity could be attributed to the previously mentioned issues together with a general lack of confidence in cryptocurrency.
It seems that some of the initial drawbacks of using Bitcoin for large transactions, such as its volatility, remain unresolved for the moment. It is not uncommon to hear Bitcoin and crypto in general depicted as the world's most unstable currencies. Over the past five years, bitcoin prices have ranged from $400 to $60,000, in some cases even dropping as much as 50% in a single day. This could have a severe impact on the value of an M&A transaction.
State-backed currencies are considered more stable and more regulated. This volatility, when compared to fiat currencies, makes it challenging to establish a fair Bitcoin value for acquisition. To mitigate some of the risks, parties might want to create a hedge or structured collar against potential currency devaluation. However, the market and advisory for such services are currently limited.

Other risks, as already pointed out, arises from the largely unregulated nature of the crypto-asset market. High-profile figures in this market have been affected by data security breaches, resulting in substantial losses of the cryptocurrency. The most notable example is the collapse of Mt. Gox, a leading Bitcoin exchange that filed for bankruptcy after $460 million in Bitcoin vanished in 2014. Another example is when Bitfinex, a crypto exchange got hacked, leading to all users losing around 36% of their deposits.

Emerging concerns also include the acknowledgment of crypto transfers for tax purposes by governments and the application of anti-money laundering laws. Transactions conducted entirely using such forms of money might face scrutiny from the government if they cannot secure their fair share of the value extracted from the deal. Regulators may require a taxable portion of the proceeds in cryptocurrency to be converted to fiat currency and handed over to tax authorities. Parties to such

transactions may need to convert a portion of their crypto-asset proceeds into fiat currency to fulfill their income tax obligations, as was the case with ZeroBlock after its acquisition by BlockChain.info.

While Bitcoin and other cryptocurrencies have experienced significant growth as a niche market, it is unlikely to become widely adopted form of payment for M&A transactions in the near future, and traditional currencies remain a more reliable option.
However, it may eventually develop into a specialized market for cryptocurrency and fintech deals where sellers have a better understanding of the potential value. Until then, Crypto's use in M&A is likely to remain a subject of speculative discussion.
In any case, the use of cryptos as a financing tool now is not new. The most established business case by now is that of ICOs. This is a phenomenon that is mainly concerned with the financing of startups.

3.3 The benefits of ICO as a fundraising mechanism

In the previous subchapters, we have seen that cryptocurrency uses remain rare in the field of M&A transactions. However, with the recent innovation of Initial Coin Offerings (ICOs), blockchain and cryptocurrencies could significantly impact the future of M&A. As we already pointed out cryptocurrencies allow for better accessibility of financial transactions and a much faster and more flexible fundraising process than traditional processes. In recent years, large financial institutions such as J.P. Morgan and Goldman Sachs have begun experimenting with blockchain technology and cryptocurrencies as an alternative method to traditional venture financing[23]. In 2018, the blockchain platform for decentralized finance applications (DeFi) operated by Block.one, known as EOS, raised a total of around $4.1 billion, becoming the largest ICO in history[24]. Through the ICO, Block.one offered its cryptocurrency called EOS. Unlike a traditional IPO, which gives investors ownership of shares in a company, an ICO distributes tokens that can be used in the project's digital platform.

For those companies that raise capital through ICOs, the advantages are many. The main advantage is that token sales are direct, and investors base their decisions on the content of the projects prepared by the company itself. Moreover, they are faster and can be set up with relatively minimal cost, in comparison to IPO, making them a more affordable option for startups and smaller companies.

The spread of tokenization has led to the introduction of other means of raising finance, such as STOs. The US Securities and Exchange Commission[25] recognizes that some tokens offered to the public may be securities and, therefore, subject to their registration and filing requirements, giving rise to this new form of offering. Security Token Offerings are similar to ICOs, but the digital tokens offered are specifically identified as security tokens. From an investor perspective, this could evolve into a highly convenient way to raise capital and potentially fund projects in ways that would typically be too cumbersome or cost-prohibitive through traditional means.

Companies can raise funds for a specific project or division, unlike other forms of equity participation where investors are generally required to bet on the entire company. Companies can gain more flexibility as STOs allow them to define the rights and terms of ownership of a token. STOs also have low barriers to investment as tokens can allow fractional ownership, which could enable companies

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[23] https://www.cnbc.com/2022/04/01/as-wall-street-banks-embrace-crypto-start-ups-look-to-lure-top-finance-talent-.html; https://www.morganstanley.com/im/en-us/individual-investor/insights/articles/to-the-moon-quality-investing-and-blockchain.html; https://www.blockdata.tech/blog/general/what-jp-morgan-is-doing-in-blockchain-and-crypto

[24] https://www.cnbc.com/2018/05/31/a-blockchain-start-up-just-raised-4-billion-without-a-live-product.html

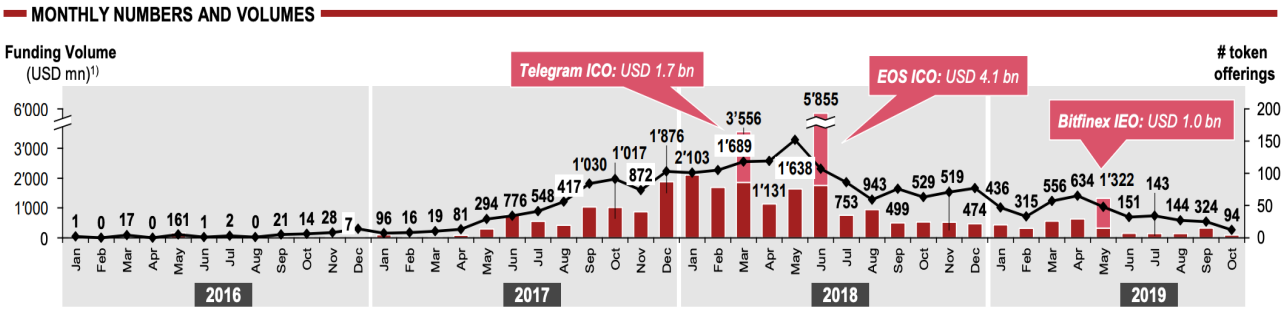
[25] In the US, STOs are regulated by the Securities and Exchange Commission (SEC). Under the Securities Act of 1933, any security offering made to US residents must either be registered with the SEC or be exempted from regulation under the rules of the Act.

to attract a wide variety of global investors. As token projects advance and companies seek new ways to raise capital, ICOs and STOs can play a critical role in capital markets.

These alternative forms of raising capital were the primary source of liquidity during the period of market euphoria between 2017 and 2018 and fostered the process of tokenization of companies. According to data in PwC's report in collaboration with the Crypto Valley Association[26], the number of ICOs and STOs in 2017 was around 12 times that of 2016, while in terms of value, more than $7 billion was raised in 2017 compared to $252 million the year before. Numbers indicate a boom for these alternative forms of financing via tokens. In 2018, over 1132 ICOs / STOs occurred successfully, double the number in 2017 with 552, while the total amount raised almost tripled to almost $20 billion. Two ICOs in particular, EOS (4.1 billion) and Telegram (1.7 billion), alone accounted for around 30% of the total volume in 2018. Much of the funding comes from cryptocurrency companies themselves reinvesting in other competing projects.

Blockchain startups thus participate in M&A differently from traditional venture capital or private equity funds as they are linked together in new tokens. After raising money through an ICO, cryptocurrency companies can invest in other ICOs and tokens, seeking further profits and sheltering themselves from technological risks by buying the stake of a rival or of a complementary company. After the rage of 2017/2018, the cryptocurrency market entered a period of steep decline called crypto winter, with the simultaneous collapse of more than 2,000 different cryptocurrencies and a downfall in the overall market capitalization. The number of ICOs also has decreased from the peak of 2017-2018 since many investors became more cautious due to the volatility of the market and the high number of ICO scams. Moreover, regulators around the world have increased their oversight of ICOs. In many jurisdictions, ICOs are now subject to securities regulations, which has raised the bar for launching an ICO and deterred many potential scams. Nowadays the principle is “Quality over Quantity”: while the number of ICOs has decreased, the quality of projects has generally increased. Today, successful ICOs are more likely to have a well-developed business plan, a strong team, and a clear use case for their token.

[26] https://www.pwc.com/ee/et/publications/pub/Strategy&_ICO_STO_Study_Version_Spring_2020.pdf



Source: "Strategy& Pwc ICO, STO 6th Report"

Conlusion

M&A is a key growth strategy that companies are increasingly resorting to as it allows them to expand and diversify their business and acquire resources and expertise quickly. Companies in the cryptocurrency sector have used M&As to consolidate their market share and expand their range of services. Cryptocurrency exchanges such as Coinbase, through mergers and acquisitions, have become universal platforms offering a full service to consumers. This has made investing in cryptocurrencies more accessible and easier and has led to a more widespread adoption of digital currencies. Mergers and acquisitions also significantly affect the industry structure in which they occur through two main dynamics: industry consolidation and technology convergence. From this perspective, two types of M&As can be identified in the cryptocurrency sector according to the strategy pursued. While M&As are necessary transactions for the growth of a company and the evolution of an industry, they present several difficulties that hinder the success of the transaction and the creation of value. Basically, M&As are complex processes that require careful planning at every stage and involve numerous actors. Evidence shows that without a clear vision and an appropriate strategy, these transactions can destroy value instead of creating it. Furthermore, acquisitions of technology companies with a new and innovative business model, such as cryptocurrency companies, require a recalibration of traditional valuation and integration processes. Especially at this time, traditional companies should acquire technological resources and expertise to prepare for the new digital economy.

Cryptocurrencies can also be used as financing tools, as we examined in this thesis. At the moment, however, without prejudice to the market's ability to evolve, such a strategy still appears too risky due to problems such as volatility, value assessment of the instruments and a lack of transparency and regulation in the market itself.

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