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THE EUROPEAN UNION'S ENLARGEMENTS

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Abstract:
This paper aims to summarize the European Union's enlargement history for the purpose of providing an easy to understand material for anyone wishing to learn more about the subject. The topics that are going to be covered are the following: Origins: The European Union's beginnings as the European Coal and Steel Community; Criteria: The general requirements for countries wishing to join the European Union; Process: The formal steps that are taken for a nation's addition into the European Union; Success and Failure: Stories of success and failure regarding European integration; Enlargements: By far the most extensive section. It covers each enlargement that has taken place since the union's inception, as well as canceled and potential future enlargements.

1. ORIGINS

The European Union (EU) has not always been the political and economical union that we know today. Throughout history, it has suffered several expansions, growing from just its six founding countries into the continental union we know today.

After World War II, an organization known as the European Coal and Steel Community (ECSC) had been formed between Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany, which was officially established by the Treaty of Paris in 1951. This was the first organization based on the principles of "supranationalism", which marked Europe's shift from nationalist ideas towards more unionistic beliefs and served as a model for unions and organizations set up after it, such as the European Atomic Energy Community and the European Economic Community(ECC), which was incorporated and renamed to the European Community (EC). In 2009, the EC's institutions were merged into the EU and the institution no longer existed.[1]

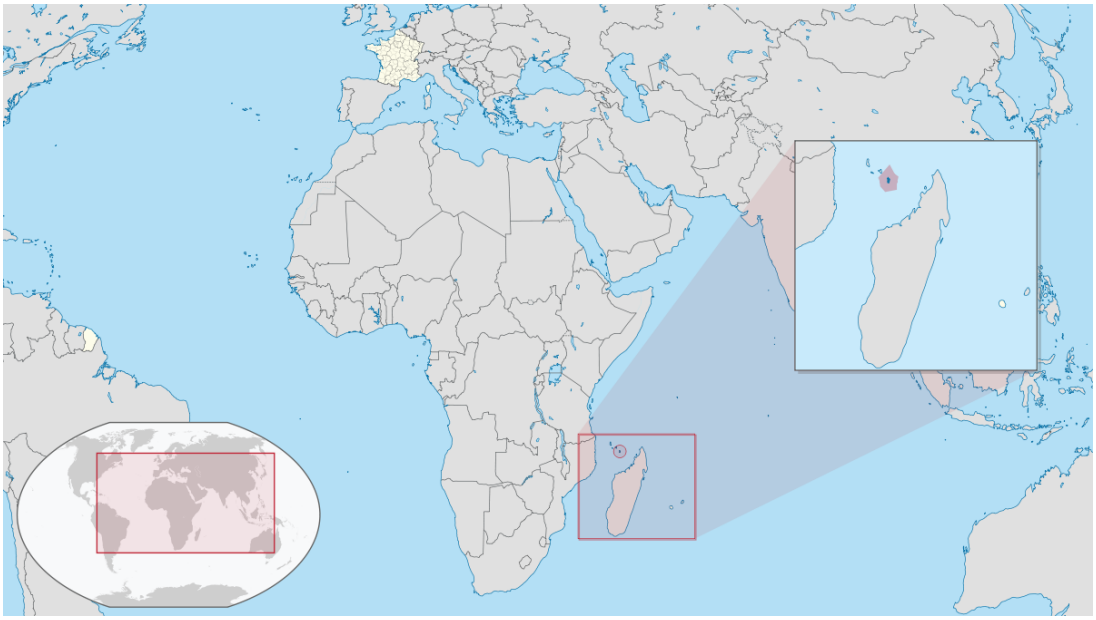
Figure 1. Flag of the ECSC

Source: https://slidetodoc.com/the-research-fund-for-coal-and-steel-of/

Since ECSC's foundation back in 1951, the European Union's member count has grown to 28, with the latest state to join being Croatia in the month of July 2013, and the latest territory being Mayotte in 2014, being an overseas department and region of France, off the northern coast of Madagascar:

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:xy0022

Figure 2. Location of Mayotte island



Source: https://america.cgtn.com/2015/07/31/7-things-you-probably-dont-know-about-reunion-island

2. CRITERIA

As mentioned by the treaties of the European Union, states eligible for membership are "*any European State which respects the values referred to in Article 2 and is committed to promoting them*", as stated in the "***Consolidated version of the Treaty on European Union/Title VI: Final provisions***". Article 2 reads the following: "*The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities. These values are common to the Member States in a society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality between women and men prevail.*" Article 2 is based on the "***Copenhagen criteria***" from 1993, which was made the moment it was obvious that many previously Communist countries would wish to join the European Union. The excerpt from the "***Copenhagen Presidency conclusions***" says the following: "*Membership requires that candidate country has achieved stability of institutions guaranteeing democracy, the rule of law, human rights, respect for and protection of minorities, the existence of a functioning market economy as well as the capacity to cope with competitive pressure and market forces within the Union. Membership presupposes the candidate's ability to take on the obligations of membership including adherence to the aims of political, economic and monetary union.*"[2][3]

3. PROCESS

Nowadays, in order to be granted memberships into the European Union, a number of formal steps are followed, from an agreement of pre-accession to a ratification of the final treaty for accession. These steps are overseen by the European Commission, primarily by the Enlargement Commissioner and the Directorate-General for European Neighborhood Policy. However, the negotiations themselves are practically taking place between the candidate country and the European Union's Member States.

Usually, an association agreement takes place before a country would apply for membership, due to the fact that most countries that wish to join do not meet the necessary requirements to begin negotiations. They would need several years to prepare for membership, and an association agreement would aid them in doing so.

[2] https://eur-lex.europa.eu/EN/legal-content/glossary/accession-criteria-copenhagen-criteria.html
[3] https://www.europarl.europa.eu/enlargement/ec/pdf/cop_en.pdf

Once a state finally applies for membership formally, the Council would ask the Commission to voice its opinion in regards to the country's readiness to begin the discussions. Typically, the negotiations would consist of the candidate country trying to convince the European Union that it is capable of enforcing European law.

In order to oversee the progress a nation has made in changing its laws in order to adapt to the European Union's standard's, a yearly report is submitted by the European Commission over to the European council. These would aid the Council in deciding whether the candidate country is making sufficient progress in a timely manner or not.

After the negotiations have concluded, the treaty of accession into the European Union will be signed, then looked over by each member state and every institution of the Union.

In the past, the whole process has generally taken about ten years, but in the case of countries such as Finland, Austria and Sweden, the process has been much quicker, only taking a few years. Turkey, on the other hand, still has not concluded the accession negotiations, despite their first application for association being all the way back in the 1950s.[4] (Börzel, Dimitrova, and Schimmelfennig 2017)

4. SUCCESS AND FAILURE

The European Union's enlargement policy has been one of its most successful endeavors, however, it did not come without criticism. Two notable instances of this is when the French President Charles de Gaulle opposed British membership, and years later, another French president, François Mitterrand, was against Spanish, Greek and Portuguese membership, believing that these states would not be ready to join due to the dictatorships they were under not long ago, and feared that the EU would simply become a free-trade zone.[5]

The first enlargement of the European Union took place mostly due to economic reasons, while the second enlargement was done for more political ones. The states in the Mediterranean south had recently freed themselves from dictatorship and wished to better secure their democratic governments with the help of the European Economic Community(EEC), while the EEC wished to make sure that these countries would be allied with them. These economic and political reasons have been the main driving factor for enlargements since then, however, due to the large enlargements of 2004, general opinion in Europe has shifted away from further expansion.

On top of this, it is known that enlargement has its limits. The European Union can not afford to expand forever. Former Commission President Romano Prodi is of the opinion that the EU's neighboring states should be granted "everything but institutions", in such a way that would allow cooperation while at the same time not destabilizing the European Union. France and Germany have been particularly supportive of this approach, wishing for a "privileged partnership" with Turkey, allowing for deep cooperation while not technically granting membership, due to the considerable opposition for cultural and logistical reasons.[6]

5. ENLARGEMENTS

5.1 Founding Members

The founding members of the European Union we know today are the countries that formed the European Coal and Steel Community all those years ago, which were France, West Germany, Belgium, Luxembourg, the Netherlands and Italy. These are the countries that signed the Treaty of Paris on the date of 23rd of July 1952. These six countries were called the 'inner six'.[7]

[4] https://www.taylorfrancis.com/books/edit/10.4324/9781315147109/european-union-enlargement-integration-capacity-tanja-börzel-antoaneta-dimitrova-frank-schimmelfennig

[5] https://european-union.europa.eu/principles-countries-history/history-eu/eu-pioneers/helmut-kohl-and-francois-mitterrand_en

[6] https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_02_619

[7] https://european-union.europa.eu/principles-countries-history/history-eu/1945-59_en

5.2 First Enlargement

The United Kingdom had previously denied the offer to join when the community was founded, but had later reconsidered after the Suez crisis and applied to become a member of the European Community. After two previously failed attempts, in part due to the French President Charles de Gaulle's opposition, the United Kingdom finally succeeded in joining the European Community. Together with the UK, other countries such as Norway, Ireland and Denmark have also applied for membership, due to the fact that they were economically linked to the UK, and saw it as a necessity to stick with them. However, after a national referendum, Norwegians voted against membership, thus, they did not join along with the others on the 1st of January 1973[8]

5.3 Mediterranean Enlargements

Spain, Portugal and Greece had recently emerged from dictatorship, and were having a difficult time joining the EU, especially with the French President François Mitterrand's opposition. Nevertheless, Greece had joined the European Union in 1981, and was soon followed by Portugal and Spain five years later.

However, in 1985, the European Community had lost its first territory, following Denmark granting Greenland "home rule", and then the territory using its voting power to leave the Community.[9]

5.4 Post Cold War

With the Cold War ending, due to economical and political reasons, European countries such as East Germany, Sweden, Finland and Austria had joined the EU on the 1st of January, 1995, leading to its fourth enlargement. Norway, however, lost yet another national referendum for membership.[10]

5.5 Eastern Enlargement

Just like the Mediterranean countries in the 1980s, Eastern and Central European countries had gained their freedom from dictatorships and desired to stabilize their new democratic governments. The European Union, however, was skeptical. The fall of communism happened quickly and unexpectedly, and the Union was still dealing with the issues that came with the unification of East and West Germany. However, after a lot of discussion, the EU had negotiated and changed its mind.

Eventually, 2 Mediterranean countries, Malta and Cyprus, as well as 8 Eastern and Central European countries, Slovenia, Slovakia, Poland, Lithuania, Latvia, Hungary, the Czech republic and Estonia were allowed entry on the 1st of May, 2004. Romania and Bulgaria, though initially considered not fully ready by the Commision, joined the Union on the 1st of January 2007.[11]

5.6 Western Balkans Enlargements

In 2003, the European Council summit had taken place in Thessaloniki, and had decided that integration of the western states of the Balkans were a priority for the expansion of the European Union.

On the 1st of July, 2013, after all the European Countries have ratified the "*2011 Accession Treaty*", Croatia has officially joined the European Union, followed by Albania and the many states that formed after the fall of the Socialist Federal Republic of Yugoslavia.[12]

5.7 Canceled Enlargements

Not all enlargements were successful. Norway had successfully completed the negotiations both in 1972, as well as 1994, but the membership was rejected by the population through a national vote.[13] (Fossum, John Erik, 2019)

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[8] https://european-union.europa.eu/principles-countries-history/history-eu/1970-79_en
[9] https://european-union.europa.eu/principles-countries-history/history-eu/1980-89_en
[10] https://european-union.europa.eu/principles-countries-history/history-eu/1990-99_en
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[12] https://european-union.europa.eu/principles-countries-history/history-eu/2010-19_en
[13] Fossum, John Erik. "Norway and the European Union." Oxford Research Encyclopedia of Politics. 28 Aug. 2019; Accessed 1 Oct. 2022. https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-1043

Switzerland had applied in May 1992, butlater froze its application, which was then withdrawn in 2016.[14]

Iceland sent its application in 2008, following an economic crisis, but then froze the negotiations in 2013. In 2017, a new government was elected, and all the major parties opposed joining the European Union. On top of that, opinion polls in the country suggest that the population does not desire to join the European Union, either.[15] (EURACTIV 2015)

5.8 Potential Future Enlargements

At the time of writing this paper, the month of October 2022, there are negotiations for five countries to join the European Union, which would be Serbia, Montenegro, Albania and North Macedonia, Ukraine and Moldova. Turkey has also been an official candidate, but further accession talks have been indefinitely put on hold.

Note that discussions of the accession of Ukraine and Moldova into the European Union are currently taking place, but negotiations have not officially started until both nations complete their respective accession criteria.[16]

Ukraine's Criteria

1. Reformation of the judicial system
2. Combating money laundering
3. Passing of the anti-oligarchic law, along with the Venice Commission's recommendations
4. Changing of the legislation regarding the nation's minority groups
5. Continuation of the Constitutional Court reformation
6. Combating corruption and appointing a head of the SAPO
7. Synchronization with the European Union's laws regarding audiovisual content (Leicester and Keyton, 2022)[17]

Republic of Moldova's Criteria

1. Justice system reform
2. Address the shortcomings identified by the the Venice Commission/Council of Europe
3. Combating corruption
4. De-oligarchisation
5. Combat organized crime
6. Public administration reform
7. Public financial management reform
8. Empower civil society in decision making processes
9. Strengthen the protection of human rights[18]

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BLOCKCHAIN: A POSSIBLE SOLUTION TO THE ECONOMIC CRISIS

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Abstract:
The intricacy of economic systems and crisis management is studied in this essay. The economic systems, present economic problems, the change in political control, their consequences on Romania, and how they were addressed are all examined in this article. The sources studied and evaluated for this research include economic textbooks, books published by internationally renowned economists, official and trustworthy publications, and news releases. The goal of this article is to argue that the blockchain offers a chance to execute policies that support macroeconomic stability profitably. Particularly asset-backed cryptocurrencies can offer a way to increase liquidity during a crisis, but they also have issues with resource efficiency and price volatility.

Keywords: *Economic Systems, Economic Crises, Blockchain*

ECONOMIC SYSTEMS

Economic systems are the basis for the functioning of societies over the centuries. Economic systems can be classified into different subdivisions. Economic systems according to the existence of private property. These are divided into two main categories that we meet today: Capitalism, Socialism.

Economic systems according to the coordination mechanism or decision-making: Traditional economy, authoritarian economy, market economy, mixed economy.

Capitalism

In a capitalist economy, people own and utilise things in ways that suit their interests, and prices are freely determined by the supply and demand of the market. As a result, it is a group of interconnected components that enable the production, distribution, and consumption of the products required for a social framework to live. As a result, capitalism is a form of social structure as well as an economic system. As the primary economic system in use today and the one responsible for the phenomena of globalisation, capitalism.

The investor can be used to describe the capitalist. They put a lot of money into it, and the risks determine whether they win or lose.

The worker is the capitalist's instrument.

The great majority of individuals are consumers.

By 2022, we may assume that most people on Earth live in a capitalist society. The modern era of capitalism began around 1950, and it first emerged in Romania at the beginning of the 1990s.

Benefits of a market-based economic system:

Removes obstacles through becoming more effective, less bureaucratic, more innovative, and forcing individuals to trade with one another.

Issues with a capitalist economy:

Inequality. Inequality of wealth and income results unavoidably from capitalist economic systems. The argument is that this disparity encourages the creation of wealth and economic expansion. Monopoly: In a capitalist system, businesses could be able to control both consumers and employees. environmental concerns In a capitalist society, decisions might be made to optimize economic gain in the near term, but at the expense of long-term environmental issues.

ECONOMIC CRISES

Financial crises have occurred frequently during the past four hundred years in the history of money. The trend showed that investor confidence rose as economies grew, the pace of credit expansion rose, and economic growth quickened. Moreover, more and more individuals started investing for short-term financial gains rather than for returns related to the productivity of the assets they bought. Economic booms have frequently been accompanied by increasing credit availability, more dynamic economic prospects, and rising household expenditure as a result of higher investment spending in reaction to these factors.

The Great Interwar slump (1929–1933), the 1973 oil crisis, the hyperinflation in postwar Germany (1898–1924), and the Great Recession (2007–2009) are among the major crises of the 20th and 21st centuries.

Following the epidemic, we have been able to witness the well-known issues with capitalism once more. The socio-economic inequalities would be among the most significant. Because there are too many distinct marketplaces, it is impossible to create broad prosperity. This is one of the constraints of globalisation.

Humanity is currently confronting a precarious predicament once more. Once again, the war in Ukraine has a significant impact on the entire world. The war in Ukraine was predicted to hinder the expansion of the global economy in April.

Early this year, the IMF, which is attempting to stimulate the economy, predicted a 4,4% rise in global output, which was roughly a half-point lower than the approximation from October. The problem is more serious as this battle continues on.

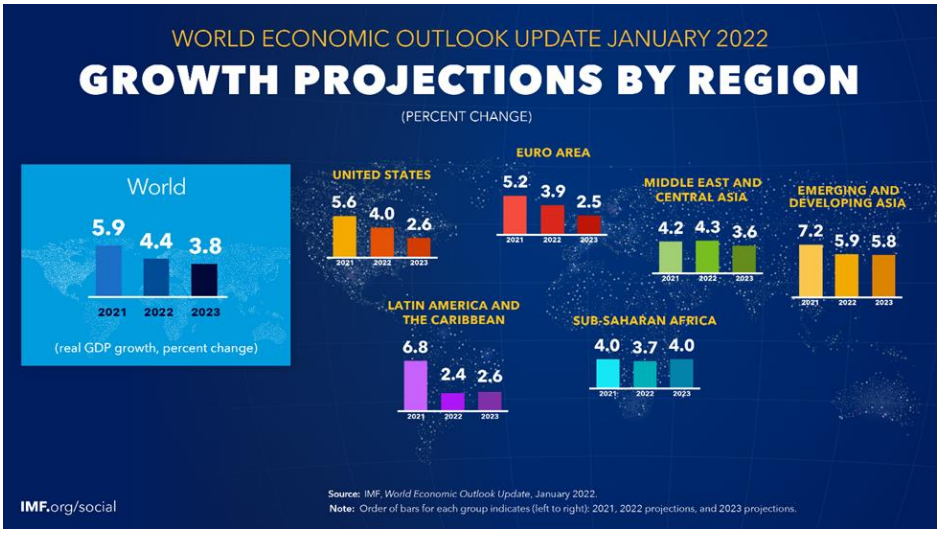
The increase in food costs is one effect that we are already beginning to notice; impoverished nations will be particularly affected by this change.

These issues that mankind is currently confronting make the repercussions appear more dire. We can observe a worrying fall in the real GDP of the continents.

According to the numbers provided, the GDP will decline both this year and the following year (2022-2023). It appears that areas like central Asia and Africa would instead bounce back out of these economic shocks.

Notwithstanding this, 143 States, which account for 86% of global GDP, will see a drop this year as a result of the effects of the conflict.

Figure 1. GDP projection for 2021, 2022, 2023(%)



BLOCKCHAIN AND ECONOMIC FLUCTUATIONS (MONETARY SYSTEM)

The anxiety caused by the recession's economic effects can be reduced by the advent of blockchain and cryptocurrencies. Aggregate demand, or changes in the supply or demand for money, is what causes economic recessions in the majority of cases. The continuation of monetary policy as a remedy assumes that stability should arise from beyond the framework of the economy. Blockchain technology has the potential to facilitate a money supply that adapts to shifts in the demand for money ownership within a regulatory environment that encourages the development of blockchain inventions.

A blockchain is a method of accounting, similar to money. A demand for resources in an economic system is the possession of money. A stable currency enables the accounting of value claims even in the absence of an accounting book. Blockchain is a financial log where all operations are visible to other access points. Each account can converge to a genuine representation of the agreements in the system in a blockchain network that is working properly. This process is democratic. Votes are distributed to the nodes, maybe on an individual basis, or based on their productivity or level of network engagement. These votes approve modifications to the public register. Agents are capable of holding claims on specific assets that the blockchain has identified thanks to the ledger.

Given the demand for money and the elasticity of the money supply, the amount of money in a system of commodities is decided. The pressure that would otherwise be placed on prices is relieved by the reaction of the money supply. The situation of an economic recession is particularly interesting in terms of promoting macroeconomic equilibrium. Throughout a recession, there is typically more demand than supply for money, which encourages a broad decline in prices. The introduction of new money and money substitutes can help to prevent the unstable credit markets that might result from this price decline. We'll think about the function of cryptocurrencies as base currencies. The term "cryptocurrency" implies to an asset with a high level of liquidity. Such assets improve the demand for basic money during a crisis and thus serve the function of stabilizing the value of total expenditure (aggregate demand) as well as creating new money.

The third trusted service provider is formed through the development of the third trust service provider, which then secures trust in the organisation, according to the current system for the financial institution, in which the register is controlled by the third trust service provider. As there is no need for a middleman with blockchain, there still are cost and administrative savings, and data is exchanged.

Blockchain technology solves the high cost of data management and hacking issues by taking the transaction information of the registry and distributing it over a P2P network rather than storing it on the centralised server of financial institutions. This forces respondents to document and monitor the transaction information in real time. The third trusted provider is now the basis on which financial institutions handle records of transactions with other institutions. Financial institutions of today are constructing and running their business models based on the involvement of the third trusted service provider. Since it can handle transaction history through a P2P network amongst participants, blockchain technology has the potential to revolutionise the business model of financial institutions.

EFFECTS ON ROMANIA

After the Covid panic, Romania’s economy recorded a contraction of minus 3,9% in 2020, inflation increased to almost 5%.

The effects of the war have been felt since its inception, along with the economic sanctions that the Russians have received from the West. The food market was among the first to experience the fall of the Ruble. Wheat has reached a price of $968/bushel, an increase of over 50%.

Corn at $716/bushel, a 35% increase. Oats reached $716/bushel, an increase of 40%. All this in the first 24 hours since the outbreak of the conflict in Ukraine.

Our money will be worth less and less while the food will become more and more expensive. The situation is severe, and some economic analysts believe Romania must move to a war economy to face economic challenges. Russia has already begun rationing food.

Romania's economy is expected to grow by 2,5% this year and 3% next year, according to a report published by the European Bank for Reconstruction and Development (EBRD).

Compared to the March forecast, estimates fell by 0,3% for 2022 and 1,2% for 2023, respectively.

According to the national Statistics Institute (INS) inflation in April 2022 reached 13,8%. 10.6 more than the previous year.

CRISIS MANAGEMENT IN ROMANIA

In January, Romania borrowed over 38 billion lei, mainly from the foreign market. Of this amount, 9,6 billion lei is the PNRR component.

The government's problem is the source of funding. Any measure that supports the population should be covered by the budget, without increasing the deficit. The limited financial resources cause politicians to talk a lot, but not to affect the budget.

Analysts say politicians are aware that they do not have the necessary budget space for such measures, but they are looking for the culprits elsewhere.

The government has adopted a series of measures to support vulnerable people, households and firms affected by war. The fiscal consolidation planned for this year could be constrained by these expenditures and weaker economic growth.

International exchanges reacted after the Russian invasion of Ukraine. The two countries were exporters of raw materials and gas. The price of wheat and maize reached a record high, recording an increase of almost 40% after February 1.

The price of aluminum is also increasing, and raw materials are becoming more and more expensive with a direct effect on inflation and economic development.

The latest measures taken by the government are postponing bank rates for 9 months for citizens and companies facing financial difficulties, granting a quarter of the salary difference, Granting a unique support of 700 lei for all pensioners with pensions under 2.000 lei. This measures from the government reach a total of 1,1 billion lei.

PREDICTIONS

While the rise in cryptocurrency adoption in 2021 led to a current debate over the role of government in the largely unregulated sector, clear rules are still in development. This has left the industry to guess, while thousands of tokens and digital coins are being introduced, and new companies and platforms are emerging to help store and market them.

President Biden signed a new crypto tax-related legislation in the $1,2 trillion bipartisan infrastructure bill late last year. And the Federal Reserve is playing with the idea of issuing a digital currency from the US.

While the new Regulation has the potential to bring more stability to the crypto market, it is still a very volatile and speculative investment.

The Commission has adopted a comprehensive package of legislative proposals to regulate crypto-assets to increase investment and ensure the protection of consumers and investors.

This package updates certain financial market rules for crypto-assets and creates a legal framework for regulatory sandboxes of EU financial supervisors for the use of blockchains in securities trading and post-trading.

CONCLUSION

Crisis management at international level, as well as in Romania, it is essential that an economic system be stable in order to protect the population and in the immediate resolution of the situations that arise.

The complexity of economic systems and crisis management is directly influenced by the co-operation of the decision-makers who need to be involved in order to provide stability in the economic and social market.

To recapitulate, the cryptocurrency has enormous potential, which makes it impossible to properly characterise in advance. Macroeconomic theory sheds light on a void that cryptocurrencies may be able to fill. The introduction of cryptocurrencies might counteract the monetary instability that is frequently linked to economic depression, particularly if such cryptocurrencies permit the extension of the monetary stock for individuals willing to purchase additional units of currency at a time of economic crisis. As far as legislation does not impede them, these applications can be discovered and put into use in markets that permit intense competition. Blockchain demonstrates the ability to monetize illiquid assets; respectively current and foreseeable assets can exist.

I also consider that bitcoin and blockchain technologies should be used to their full potential and that inefficient tax legislation and regulations must not prevent them from being used to monetize assets and counteract volatility. We must embrace the future and use it to reduce the complexity of human undertakings and flaws.

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ONLINE PAYMENT SYSTEMS

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Abstract:
I chose to do this work out of curiosity about online payment systems. Curiosity fueled by advertisements of a game that generates rewards in real money after completing certain levels. During the study regarding these online payment systems, I found that certain services recommended as different in the respective game are branches of the same payment system. The purpose of this scientific work is to know, differentiate and classify the services presented in the financial branch of which they are a part.
The paper includes a brief presentation of payment systems and their importance at the World and national level, followed by the presentation of information about online payment services (PayPal, LINE Pay, Cashfree) and some related conclusions.

DIGITAL PAYMENT SYSTEMS

Digital payment systems are components of financial systems through which payments can be made either physically in a store, restaurant, hotel or bus through a bank card and a POS station, or online on various sites that sell products or services, through the bank card and the mobile banking or online banking application.

Over the years, these payment systems have gradually developed, currently reaching the payment of purchases only through the mobile phone.

According to the BNR website, payment systems are of particular importance worldwide, especially in recent decades in the context of the globalization process and the free movement of capital, the value of transactions and their volume being on the rise.

With the accession of Romania to the European Union and the development of the economy, at the national level there was an increase in the volume of payment transactions and an increase in the level of interest of economic operators in the development and efficiency of secure payment systems. (sisteme de plati, 2022)[19]

Online payment systems play an important role in the economy of each country because they fluidize the exchange of money on the commercial and financial markets through "digital" money, managing to some extent to maintain the constant production of physical, tangible money.

Worldwide, there are various online payment systems, among the most famous being "Pay Pal".

But in video games that promise rewards in real money after completing certain levels, the rewards are offered through the following payment systems:

- Pay Pal
- Pay
- LINE Pay
- Alypay
- Pay Pay
- Worldpay
- True Money
- Cashfree

[19] (sisteme de plati, 2022)

To find out what these payment systems entail, in the next part some of those listed above will be presented.

PayPal

What is PayPal?

PayPal SCA is a credit institution founded in 1998 in San Jose, California, supervised and authorized by the Financial Regulatory Authority of Luxembourg, "Commission de Surveillance du Secteur Financier".

PayPal offers a secure method of making payments and being paid online. This service allows online payment of purchased products or services without providing complete financial data to merchants.

Pay Pal registers over 325 million accounts worldwide, being available in 202 countries and 25 currencies.

Over time, this payment method has received over 20 awards from the business community and the Internet industry, including the "Webby Award" for the best financial services website in 2006. (PayPal, 2022)[20]

PayPal – how is working ?

To use "PayPal" financial services, it is necessary to create an account, entering some details such as email address, name, surname, etc., after connecting, a card or several cards will be added, it depends on each individual user how wants to manage his account, and then transactions can be made without revealing card data or CVV passwords. (PayPal, 2022)[21]

Through the PayPal service, a series of transactions can be carried out as follows:

- Shopping online or in stores
- Receiving donations
- Receiving international donations
- Sending and receiving money
- Currency conversions
- Cash withdrawals, etc.

Each transaction carried out through the PayPal service, whether it generates additional costs or not, each separate service operates with its own fees and commissions. (PayPal Fee, 2022)[22]

Table 1. Taxes and Commissions related to the services

TRANSACTION	TAX	COMMISSION
Payment of purchases without currency conversion	0	0
Payment of purchases with currency conversion	0	3% above the base exchange rate
Donations	3,4%	fixed commission
Sending internal personal transactions (without currency conversion)	0	0
Sending international personal transactions in Canada, Europe1, Europe II, Northern Europe and the USA	1.99 EUR	0
Send international personal transactions to any other region	3.99 EUR	0
Send personal transactions without currency conversion	0	0
Withdrawal or transfer to a bank account without currency conversion	0	0
Currency conversion		3% above the base exchange rate

Source: "PayPal"https://www.paypal.com/ro/webapps/mpp/paypal-fees#no-fee (PayPal Fee, 2022)[23]

[20] (PayPal, 2022)
[21] (PayPal, 2022)
[22] (PayPal Fee, 2022)
[23] (PayPal Fee, 2022)

The SWOT analysis:

- dates back over 20 years
- is used in over 200 countries
- trades in 25 currencies
- offers ease in making payments to merchants
- offers the possibility to pay in another currency

Figure 1. The SWOT analysis "PayPal"

Line Pay

What is Line Pay?

Line Pay is a mobile application created in Japan as a solution for the Japanese Government's plan to move from forms of cash to forms without cash, with digital money by the year 2020. This application offers payment services such as the purchase of at "LINE Pay" registered merchants.

In addition to paying to these merchants, payments can also be made using the customers' existing credit card by enrolling it in the application. Also in the LINE Pay account you can make transfers and request the payment of an invoice together with another person who uses the "Line Pay" service. (How does LINE Pay works?, 2022)[24]

The LINEPay service was initially launched for the use of smartphone users in 2011, but later the service expanded its boundaries for BlackBerry (2012), Nokia Asha (2013) and Windows Phone (2013). The evolution

[24] (How does LINE Pay works?, 2022)

and success of the application led to allowing its use on PCs, both on Windows and Mac OS operating systems. (How does LINE Pay works?, 2022)[25]

How working LINE Pay?

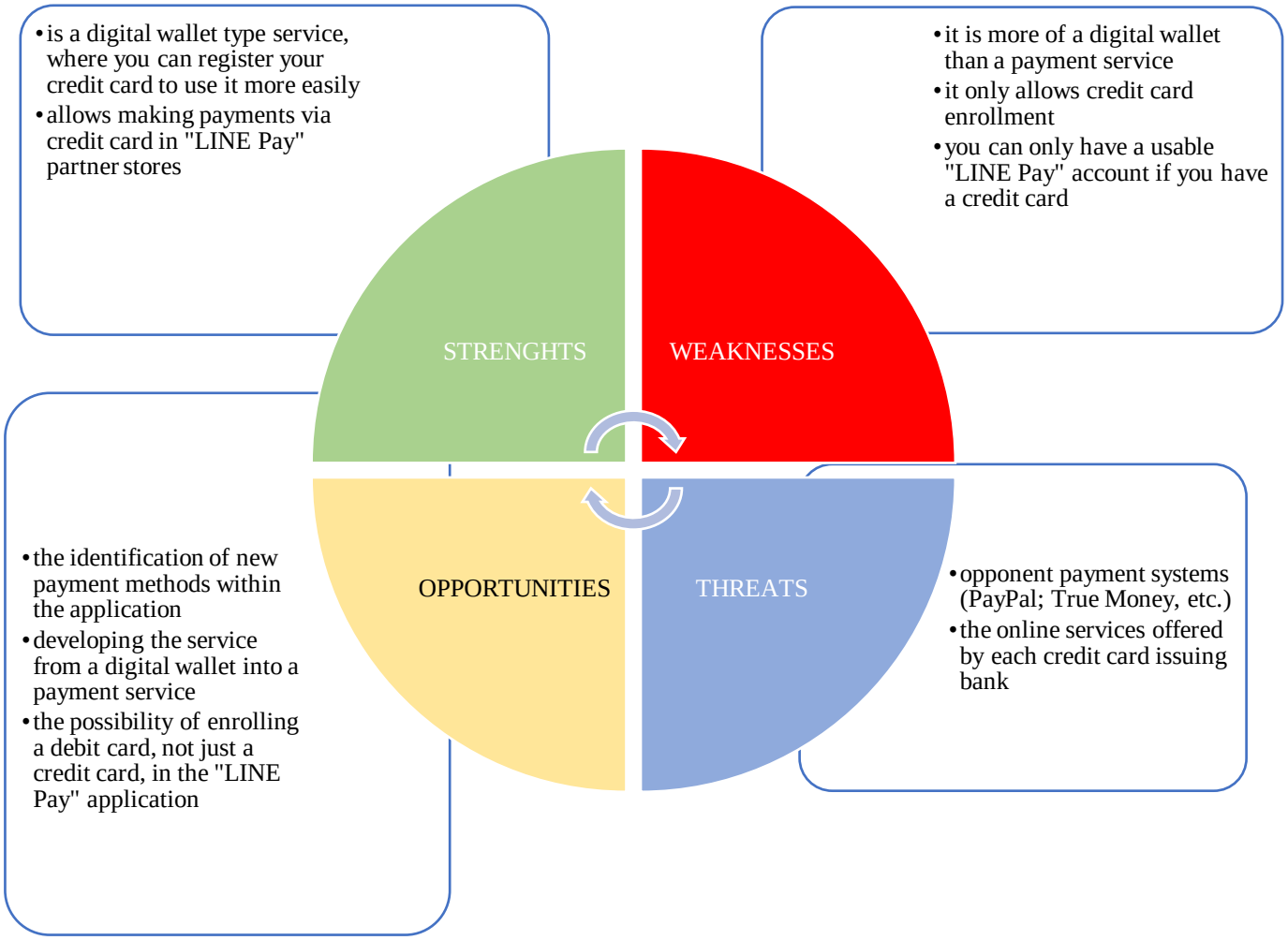
The first step in registering for the "LINE Pay" service is to install the "LINE" application, then select the "LINE Pay" section from the "Wallet" tab, then connect your credit card to the application.

Payment through LINE Pay can be made both online and offline by scanning a QR code by the user or the merchant. (LINE Pay, 2022)[26]

The official page of the LINE Pay service does not provide information about taxes and commissions related to the use of the service, probably due to the fact that it is more of a digital wallet than a payment system.

The SWOT analysis "LINE Pay"

Figure 2. The SWOT analysis "LINE Pay"



[25] (How does LINE Pay works?, 2022)
[26] (LINE Pay, 2022)

Cashfree

What is Cashfree?

Cashfree Payments is a payment service created in India to facilitate the banking activities of companies starting from actions such as entering payments into the account, payment orders and other banking services.

Using Cashfree, beneficiaries can make payments, collect payments or send money through the following channels, partners of the Cashfree service, Payment Gateway, Payment Links, Auto Collect, Easy Split, softPOS.

Also through this payment system, companies can issue invoices, promissory notes to their customers, automate recurring payments for a certain date every month without the need to use cash payments. The "Cashfree" offers advanced services such as paying employees directly from the application, without the need to go to the bank, this is being possible due to the large number of partnerships it has contracted. (cashfree, 2022)[27]

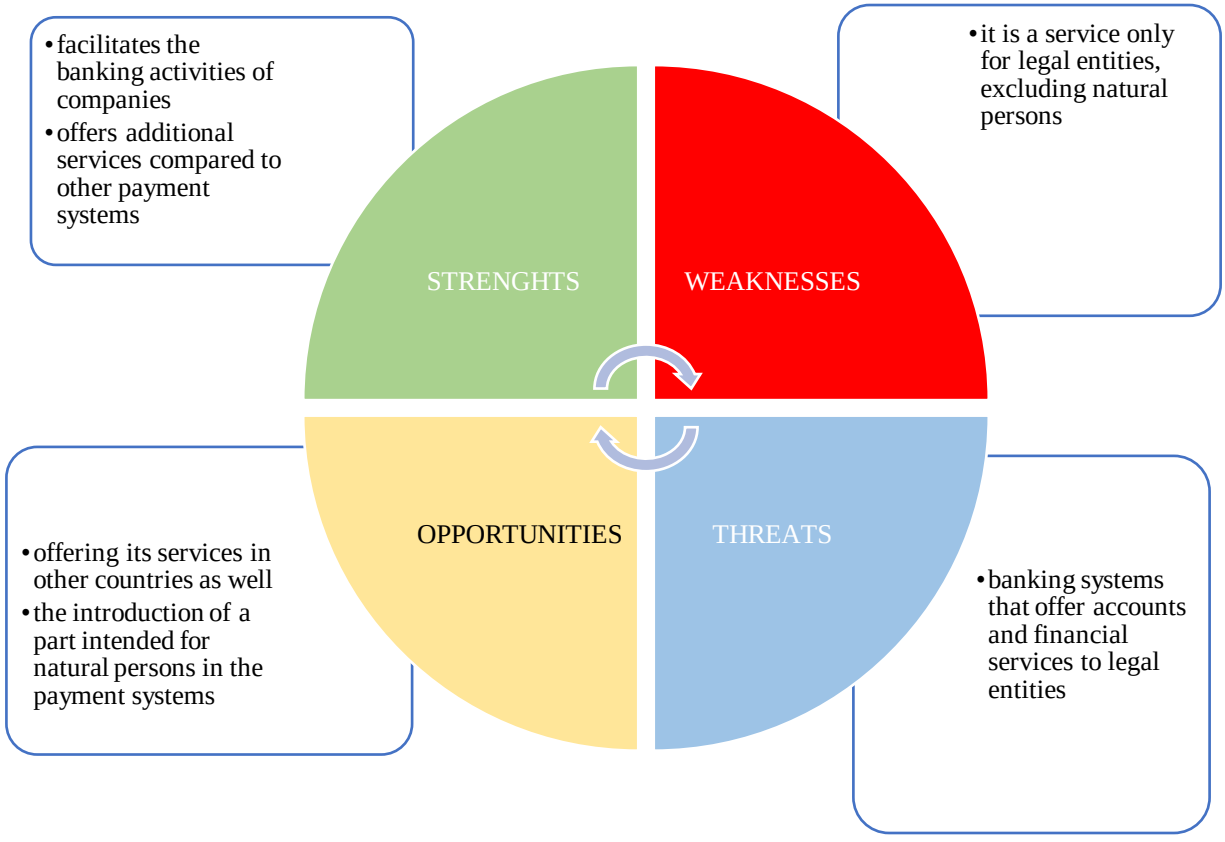
How is working?

The Cashfree service is intended entirely for companies offering opportunities related to their banking activities. This service is accessible in certain countries, among which Romania is not listed.

To create an account in the "Cashfree" payment system, it is necessary to access the official website and tick the "create account" button, then fill in the data required in the connection process and use the payment service itself. (cashfree, 2022)[28]

The SWOT analysis Cashfree

Figure 3. The SWOT analysis "Cashfree"



[27] (cashfree, 2022)
[28] (cashfree, 2022)

CONCLUSIONS

Following the information on the payment systems that can be used to withdraw money from video games that are supposed to offer rewards in real money, I noticed that some of the systems that seem to be different are part of the same payment service.

Taking into account that PayPal, Line Pay and Cashfree are categorized as similar payment systems in video games, Cashfree is a service intended exclusively for legal entities, and LINE Pay is a virtual wallet, not a payment system at all.

The most advantageous and transparent payment system from those listed above is PayPal because it is a service that offers the possibility to make payments, with the fees and commissions related to each service displayed on the official website.

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RPA AS PART OF BANKING DIGITAL TRANSFORMATION

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Abstract
The expansion of the digital transformation phenomenon imposes certain trends, strongly changing the traditional way of doing business. Being a constant process, it requires organizations the need to adapt to the current environmental conditions. Digital transformation creates significant opportunities for companies to streamline their operations. Among those can be identified the opportunity to implement Robotic Process Automation, a tool that is not just a means of efficiency, but a resource that can be adapted for a variety of tasks. This paper presents the tool through a literature review and a case study on the implementation of the solution in banking. Thus, as objectives were established the definition of RPA concept and the benefits associated with the technology, as well as the identification of its implementation opportunity and effectiveness in the banking sector.

Keywords: Automation, Digital Transformation, RPA, Banking 5.0

1. INTRODUCTION

Human adaptability is an ongoing research topic focused on analysing the flexibility of the human being to adapt to current environmental conditions. Together with human intelligence, this is the main reason why humanity exists today. The need for peace, security, comfort and a high level of well-being are the driving forces behind the development and emergence of human society in its present form. Since prehistoric times, people have been trying to make their lives easier by combining and processing different raw materials such as stones, wood or bones, inventing tools such as axes, spears and hammers. Today, in the age of digital and information technologies, the principle has not changed at all. More and more needs are emerging and, as a result, more and more solutions are being developed to facilitate human activities. However, the rise of solutions that satisfy certain needs generates others, precisely because of the human aspiration towards the absolute.

Innovation and technological progress have an impact on society as a whole. They are imposing certain trends, which are reflected in the change in the traditional way of doing business and the emergence of new business models, based on various software and online platforms, which do not yield to traditional models. Today, recognition and adoption of new technologies and new versions and strategies for their use have become the basic elements for survival in the context of the technology and information age. In the case of companies or public organizations, a quality IT infrastructure leads to efficient operations and increased adaptability, therefore resulting in the need for digital skills for people who want to occupy senior positions in any company or public organization.

An important aspect, which has been in place since the development of mechanized factories, is *automation*. Increasingly, there is a trend to develop technologies that perform tasks instead of people, from production processes to making breakfast. In essence, the subject of automation comprises activities that are carried out repetitively over a period of time and according to certain rules. Such processes are found in all industries, at all levels of business, whether digital technologies are used.

The pandemic crisis has accelerated the digitalization of society, setting in motion a new industrial revolution based on human-centred personalization, the so-called *Industry 5.0* or *Society 5.0*. Digitalization is the main driver behind the possibility of automating various business activities, which may include filling in and signing forms and documents, preparing quarterly reports, transferring data from one source to a database, processing invoices or other documents. This can be done with the help of digital tools developed for this purpose.

With the digital transformation of the economy, as well as the popularization of automation, the objective of this paper is to make a short introduction in the automation software tool which is able to streamline the repetitive digital activities within any industries, as well as to determine the efficiency and approach to cyclical processes and the adoption of this tool within banking institutions. This paper involves a set of objectives. The first goal includes reviewing the scientific literature, thus identifying the essence of RPA technology as well as its associated benefits. The objective of chapter two is to develop and present an implementation plan for the automation solution. Chapter three includes the definition of the concept of process in RPA, and the final chapter presents a case study of the implementation of the technology in a banking institution.

2. LITERATURE REVIEW

In any organization there are a lot of repetitive, error-prone and annoying tasks that consume a significant amount of many employees' time. One solution to reduce the time spent on these tasks is to automate them using robots. When it comes to robots, most of us see them as hardware, with a design adapted to perform certain tasks, which may or may not resemble the human body. However, this view is not always true, as robots can also exist in virtual form, as software programs that help perform certain processes, tasks or even perform them for someone.

The concept of *Robotic Process Automation (RPA)* is not as complex as *digitization* or *digital transformation*. Thus, there are unified definitions of automation solutions in the scientific literature. Nowadays, Robotic Process Automation, is a type of automation software that can be used to create, configure and control software robots (bots) that can learn, execute and repeat various digital processes based on specific rules (UiPath, 2021). With Robotic Process Automation a variety of manual processes that human workers perform can be automated, reducing the burden of recurring tasks. The software robot can perform a flow of step-by-step tasks by interacting with various applications, reading and writing data, performing numerical calculations, modifying and renewing data (Issac et al., 2018). Robots created using the technology represent a virtual workforce with human-like digital skills. They can interact with any system or application, being able to insert text, navigate, identify and extract data. These bots are capable of performing any task much faster than humans and with zero probability of error. Under these conditions, RPA bots can be adapted to perform processes consisting of repetitive, monotonous tasks, and the human factor can be involved in activities that require more creativity and intelligence.

According to Lin et al., (2018), RPA is the key capable to solve major problems related to internal business processes. They highlight the solution's ability to *reduce costs, increase productivity and efficiency* of internal processes, significantly *reducing errors*. Increased productivity is highlighted as an advantage by Micah Smith, (2021), who argues that RPA robots, by performing tasks independently without human intervention, ensure more efficient work. In highly bureaucratic industries such as insurance, financial services, public sector, virtual robots can streamline and speed up digital processes. This author also highlights as an advantage the *compatibility* of RPA technology with any other type of software. RPA robots can interact with any application, regardless of version. This makes companies more flexible in eliminating cumbersome technologies and adopting new software, independently of the department, resulting in efficiencies and collaborations never before seen at enterprise level. Also, the combination of Robotic Process Automation and *Artificial Intelligence (AI)* opens up new opportunities for the digitisation of business processes. With the help of RPA, robots with AI capabilities can be developed in the form of *Machine Learning (ML)*, *Natural Language Processing (NLP)*, *Optical Character Recognition (OCR)* models, thus creating sufficient conditions for robots to grasp and process documents, view images or even understand and maintain conversations via chat. The technology can be integrated into the front office, thus streamlining interactions with customers, increasing customer satisfaction by reducing the time it takes to deal with customers and performing all system and data entry tasks much faster compared to an employee, thus meeting customer needs much faster (Micah Smith, 2021). In these circumstances, coupled with the digital transformation process of organisations, results in increased *scalability* of the solution, giving organisations significant flexibility to adapt their software infrastructure. (Bayraktar Dorin et al., 2022).

With a clear vision of the essence of the technology, the authors of the research reviewed focused their attention on investigating the benefits of the tool in specific areas such as media, insurance, banking or in various

business processes. According to Moffitt et al., (2018), implementing RPA can streamline audit processes, reducing complexity and increasing the speed of audit completion. At the same time, the likelihood of performing tasks erroneously is reduced, thus excluding audit risk. This conclusion results from the fact that before launching the solution, it is tested using real datasets in real conditions. The totality of the deficiencies detected during testing allows corrections to be made and thus a reliable solution to be launched. However, sometimes there are not enough conditions to assess the full extent of existing situations, which can lead to errors. But the flexibility associated with the technology ensures the constant possibility to adjust the solution, thus addressing deficiencies detected during deployment. The author pointed out that RPA tools are much more intuitive and easier to use compared to solutions such as Excel macros, IDEA or Python, which also can be used in order to automate various audit processes such as reconciliations, analytical procedures, internal control testing or detail testing (Moffitt et al., 2018).

According to Moffitt et al., (2018), RPA robots are able to replicate human activities with high accuracy as configured. Robots are able to connect to applications using their own login data, receive and send emails, read documents, identify salient information, perform analysis, reports, input data. Compared to Excel macros, RPA can be implemented to automate digital processes, bots interacting with any existing desktop or server software applications. Thus, RPA is identified as a better alternative to outsourcing, involving lower costs and higher productivity. Automation software can be deployed to perform repetitive tasks with increased speed and efficiency, thus providing an opportunity for organisations to delegate tasks to their employees that can contribute significantly to company's growth. At the same time, RPA can be integrated to streamline human activities, thus generating collaboration between human and bot.

One problem identified during the elaboration of this paper was that the literature is quite deficient in the study of how to implement automation software tools, a key research topic in the context of the increasing digitalization of business processes. Thus, in the following I set out to study and present a brief implementation plan for RPA, which can be customized according to the specific needs of an organization.

3. ROBOTIC PROCESS AUTOMATION DEPLOYMENT

Today, RPA is a solution that guarantees efficiency and increased productivity, reducing the number of repetitive, tedious and time-consuming tasks performed by employees. Robotic Process Automation has been adopted in fields as diverse as legal, finance, IT, customer support and retail. Due to the flexible applicability of the technology and the existence of a significant amount of repetitive, rule-based processes, RPA is becoming increasingly widespread. The decision to implement RPA depends on several factors, the most important of which is the organisation's level of digital maturity. As noted in the previous chapter, RPA is a digital tool that can be integrated with software program. So, before implementing the automation solution the organisation must develop a reliable and flexible software infrastructure. Under these conditions, I have proposed for this chapter to devise and develop a flexible implementation plan for the automation tool, which includes four phases that can be adjusted according to the organization's specifics and needs.

Before implementing any emerging software available on the market, it is necessary to ***evaluate the opportunities*** for its implementation. The success of an RPA solution deployment depends on the effectiveness of researching the services and capabilities of existing vendors on the market, as well as the correct assessment of the processes that take place within the core of the organization, the purpose of the assessment being to detect those processes that can be subject for automation and consequently the areas that will gain the most from the implementation. Some processes may not be suitable for automation. After the survey, the efficiency and savings opportunities resulting from the implementation will be analysed, thus confirming the need to adopt RPA solutions.

The end of all implementation opportunity analysis involves identifying the right offer and thus ***selecting the supplier or implementation partner*** for the automation solution. This phase entails inviting Robotic Process Automation suppliers, who meet the technical requirements and mandatory selection criteria, to make presentations demonstrating the application of RPA to the processes selected in the previous phase. The presentations should include technical demonstrations with specific focus on the functionality of the automated processes, in this way it is possible to evaluate the solution effectively.

The next step includes ***automating digital processes***. This comprises several phases, including clearly defining the processes to be automated, mapping the target processes according to procedures, building the processes and configuring the bots, testing and analysing the results. In addition to the above, the phase includes ensuring human capital readiness, as well as documenting, tracking and completing implementation activities according to plan. During the phase, analysis of automated processes takes place, thus identifying deficiencies and determining additional development requirements, as well as applying changes in case of implementation errors. Based on the results of this phase, future long-term automation goals will be determined.

The end of the implementation process involves ***launching automated processes*** into operation, regularly monitoring the results and proactively maintaining the technology. In addition, this phase involves a continuous evaluation of business processes to identify new opportunities to adapt the RPA.

In sum, the automation solution implementation plan proposed in this paper consists of four phases: assessing RPA opportunities, selecting the implementation partner, preparing and exploring the RPA solution, launching the solution. This plan is not a general one and can be adjusted, each phase may include several phases depending on the specifics of the organization's activity, as well as on the resources available.

4. WHAT IS A *PROCESS* IN RPA?

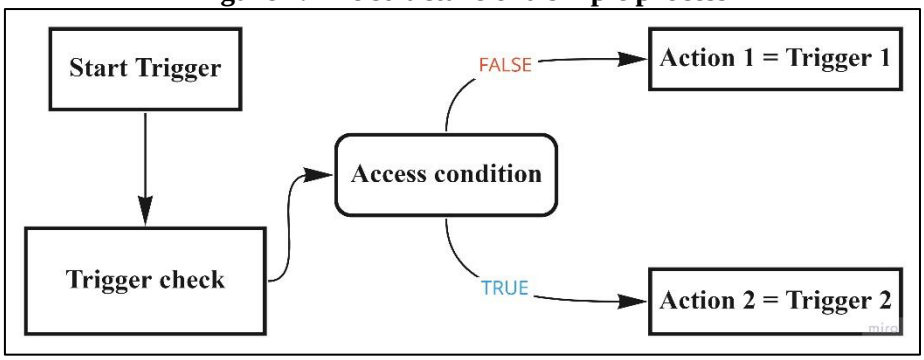
Regardless of its complexity, any activity carried out is a process and its structure can be analysed to determine all its key elements. The success of the implementation of the RPA solution depends directly on the definition of the process concept in RPA and the efficiency of determining the repetitive digital tasks that can be subject to automation. In RPA, a ***process*** can be defined as *a set of mutually dependent instructions and steps, carried out successively according to a predetermined procedure and depending on certain access conditions,* which in turn represent specific criteria for evaluating and validating the start of the process or the result of the previous step. The digital processes that can be automated with the solution are divided by the degree of interaction with the human factor into two broad categories: fully automated processes and partially automated processes. *Fully automated processes* are those digital tasks that can be performed entirely by the software robot configured for this purpose and include little interaction with the employee. The second category of processes (*partially automated processes*) involves collaboration between the employee and the RPA bot to perform tasks based on input from the former. However, the concept of process in RPA has a more technical structure, but is based on the principles of the processes carried out on a daily basis.

In this paper, a process has the following components:

1. ***The trigger*** is the element whose existence or appearance starts the stages of the automated process;
2. ***Access conditions*** are environmental variables, embodied in the features of the trigger that determine whether or not a step is achieved;
3. ***The result of the reporting*** is an element that involves reporting the trigger to the access conditions, thus determining the next step the bot will perform;
4. ***Execution commands*** are actions performed according to the specifics of the reporting result.

The combination of these four elements are the standard set of process elements. Depending on the complexity of the process structure, processes can be classified into simple and complex processes. ***Simple processes*** comprise a single set of steps, usually with the following structure:

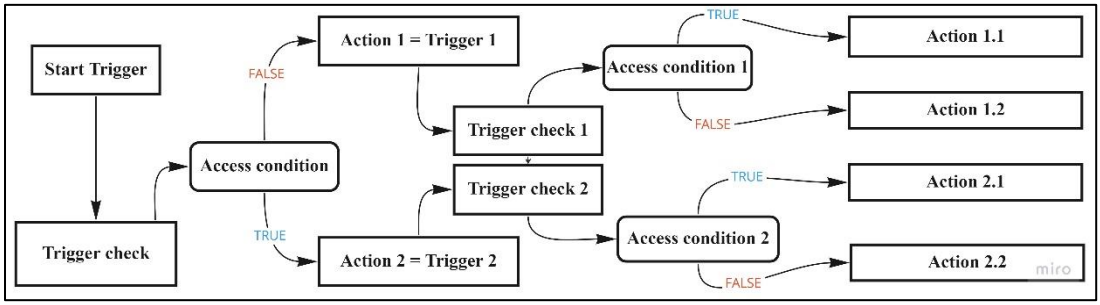
Figure 1. The structure of a simple process



Source: Adapted by the author

Complex processes are those that consist of several sets of steps, hence several simple processes. (Figure 2).

Figure 2. The structure of a complex process



Source: Adapted by the author

An example of a simple process would be to receive an invoice by email from a particular supplier X and download it to a folder created to store invoices issued by that supplier. Under these conditions, the elements of the process are:

1. Process trigger = receipt of an e-mail;
2. Access condition = the sender of the e-mail is supplier X;
3. Execution commands:
   a. Positive reporting result, i.e. the access condition is satisfied: Action 1 = Download and save invoice to X folder, return to email tracker;
   b. Negative reporting result, i.e. the access condition is not met: Action 2 = Forwarding the e-mail to the responsible employee and returning it to the mail monitoring.

The simple process described above can be one stage of the invoice processing workflow, which is much more complex, involving several distinct steps, with paths identified according to several access conditions, as shown in Figure 2.

Understanding the concept of process in RPA is very important in implementing the solution. This results from the need to structure each step in a detailed way. Each click and scroll has increased relevance in the structure of the process that is to be automated, the omission of a single step equates to the impossibility for the software robot to efficiently perform the automated process.

5. RPA IN BANKING

Innovation and technological development impose certain trends, which are reflected in changes to the traditional way of doing business. Adopting new technologies and new versions of them is a prerequisite for survival in the context of digitisation. One trend is the automation of various processes within organisations through the implementation of digital solutions, including Robotic Process Automation, hence organisations

are seeking to increase productivity and streamline their activities, as well as reduce the cost and time involved in performing repetitive digital tasks.

Banking, being one of the most bureaucratic sectors, involves many cyclical activities, such as collecting customer data from various sources and entering it into the bank's database to meet information needs. Thus it is a perfect system for implementing RPA software. One example is *Yapi Kredi Bank*, a banking institution from the Turkish system, which has extensively implemented the RPA solution developed by industry leader *UiPath* to streamline the work of auditors and employees. In the case of auditors, the purpose of the software robot was to collect, systematize and provide the auditors with all the necessary documents and information., thus streamlining the bank audit activity. In the case of employees, *Yapi Kredi Bank* chose to configure RPA bots to perform repetitive digital tasks, such as collecting customer data from various sources and entering it into the bank's database to meet customer needs, as well as determining future market trends. In this way the bank has created conditions for reorienting human capital towards achieving higher value objectives. Another example is *Banca Transilvania*, which has implemented *UiPath's* RPA software tool, thus moving towards a new level of digital transformation. As part of the RPA implementation, the bank focused on increasing efficiency and employee satisfaction, as well as offering new experiences to their customers. For its employees, it has set up assistant-bots, the object of which is to provide the necessary information via chats. To increase customer satisfaction, *BT*, in collaboration with *Druid*, has set up two chatbots, called Livia and Raul, to provide round-the-clock information support via digital channels to both individual customers (Livia) and corporate customers (Raul). In addition to chatbots based on natural language processing, *Banca Transilvania* has managed to automate several processes, such as accounting, audit, call center, HR, compliance and others, the collaboration with *Druid* came about as a result of a growing need for interaction between employees and robots.

Given that banking institutions are among the most digitised and have a well-developed software infrastructure, next chapter will include a case study, materialised in the implementation of RPA to automate the processing of individual customer requests generated through digital channels. The chapter is structured in the following two sub-chapters: defining the need to automate the processing of requests generated through alternative channels and structuring and explaining the automated process.

5.1 The automation of the data updating requests processing generated from online banking or mobile banking

Digital banking channels are becoming increasingly used by customers, the most popular of which are online banking and mobile banking, which have become standard products of any banking institution due to the functionalities included. Through these solutions, customers, both individuals and businesses, can carry out a wide range of transactions from anywhere in the world, provided they have a stable internet connection. Online and mobile banking, which have become established concepts, include certain basic functionalities such as 24-hour access to financial statements, IBAN viewing, intra-bank or inter-bank transfers, bill payments, scheduling of regular payments, location of bank branches and ATMs.

With the standardisation of digital channel features, banks are tending to broaden the range of functionalities covered in order to diversify, thus making customers increasingly independent of the geographical location of the banking institution.

In this case study we will explore in detail the influence of implementing robotic process automation on the handling and solving of identity and/or contact data update requests generated by customers via online/mobile banking. Before we start going into the details of the process, we believe that the bank has invested in the development of a program, called Request Manager, which is designed to handle customer-generated requests through alternative channels such as mobile banking, online banking, chatbots, new customer current account opening platforms, etc. For the management of the platform, Robotic Process Automation is an efficient solution. By configuring software robots to monitor, receive and resolve customer requests received in the Request Manager platform, it will be possible to meet their needs in accordance with all required standards. Under these conditions, each bot must have its own login credentials to the platform. All bots will have a

common trigger and depending on the result of its reporting to the specific access condition of each bot, they will resolve or ignore the request (Figure 4).

5.2 The need for automation

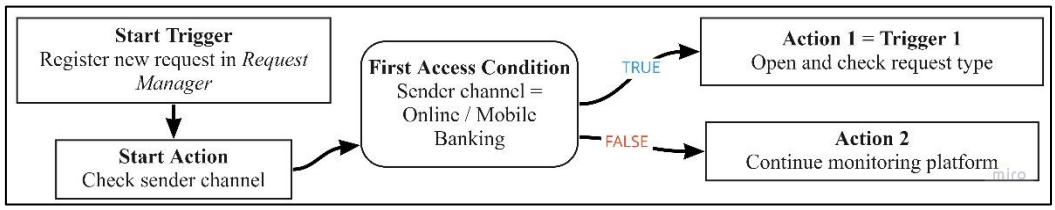
In addition to the legitimation, there are a number of conditions that need to be met in order to generate and maintain business relations with a bank. Keeping customer data up to date is a legal obligation for banking institutions, as laid down in *Regulation 2/2019 on preventing and combating money laundering and terrorist financing*. Being perceived by customers as a bureaucratic process, individuals do not tend to go to the bank to update data once certain changes have occurred. Under these circumstances, one of the key functionalities of internet banking is updating identification or contact details.

The possibility for customers to update their data via online or mobile banking would free both banking institutions from the need to "fuss" the customer with invitations to the unit and to allocate human resources to perform these tasks, and customers from the time wasted waiting in line to update data.

5.3 Development of the automated process using RPA

With a bot configured to handle requests sent from online/mobile banking, the start trigger for the process will be the receipt of a new request in the Request Manager. As we have pointed out, the Request Manager platform records requests generated from all alternative channels made available by the banking institution to its customers. Thus, the access condition for continuing the process will be that the received request is generated from online/mobile banking. If it is generated from another channel, the bot will ignore the request, leaving it to the one configured for the channel in question (Figure 3).

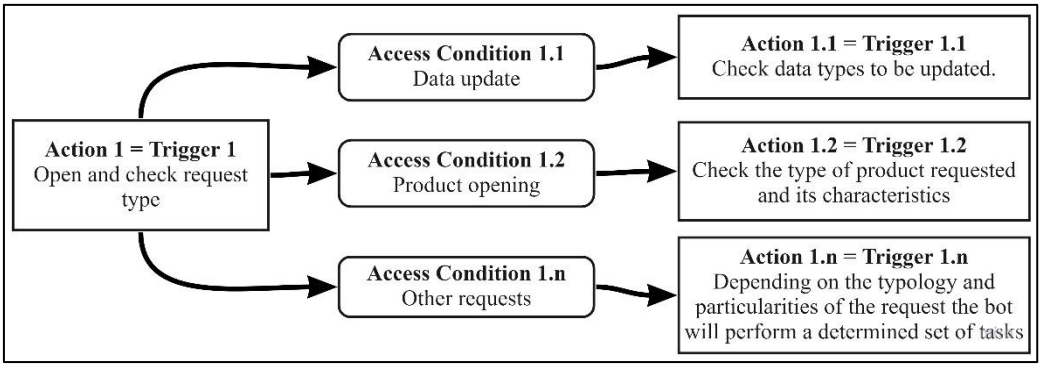
Figure 3. Receiving new requests in *Request Manager* sent from online / mobile banking



Source: Adapted by the author

The access condition being true, the bot will open the request and determine its type according to which it will perform a certain set of tasks (Figure 4).

Figure 4. Determining the type of requests sent from online/mobile banking

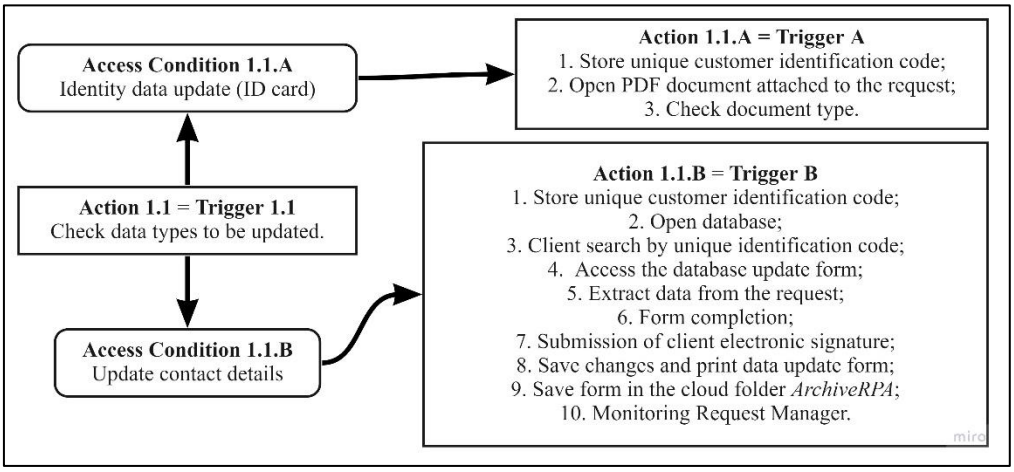


Source: Adapted by the author

As this is a data update request, the software bot will follow the set of instructions established for this task (Action 1.1 Figure 5). It will start by identifying the type of data to be updated, since for identity data there is a verification procedure on the PDF document attached to the request, whereas for contact data update there is no verification procedure executed by the RPA bot. Instead, the proof of contact details is done in the

application by the customer through entering a validation code obtained from the updated email address or phone number.

Figure 5. Check type of data to update requests sent from online/mobile banking

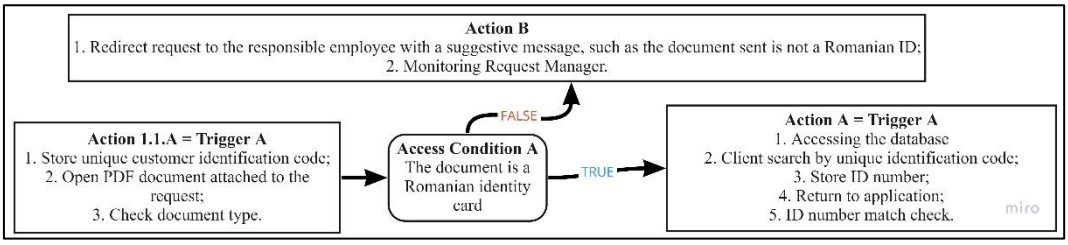


Source: Adapted by the author

The process of updating contact details (Action 1.1.B Figure 5) involves searching for the customer by their unique identification code in the database, filling in the reference form with the details from the request, signing it on behalf of the customer, printing it out and sending it to the archiving department, the end of which involves returning to the monitoring flow in Request Manager.

In the case of an ID update, the RPA robot will only be able to recognise the Romanian ID, as most individual customers are Romanian citizens. But this does not imply that foreign customers will be deprived of the possibility to update their identity card via digital channels. Thus, in case of a request to update identity data, the bot will execute the set of activities specific to action 1.1.A (Figure 5). It will start with the memorisation of the unique customer identification code that will be used in a next step. Until then, it will check whether the document in the PDF is a Romanian ID card, by identifying its specific customisation elements, similar to the legitimation process. In the case of foreign citizens, the bot, not identifying the ID, will redirect the request to the responsible employee with a suggestive notification that the scanned document is not Romanian ID. In these situations the update will be done by that employee (Figure 6). The main reason why the adaptation of the foreign ID reading bots could not be accepted is the bank's policy in dealing with customers who are citizens of other EU or non-EU countries and with customers who are associated with a high risk of money laundering or terrorist financing according to *Regulation 2/2019 on the prevention and combating of money laundering and terrorist financing*. However, bots could be set up to identify foreign identity documents for customers who are not associated with any risk, but this can only be discussed when there is full transparency between Romania and the home countries of those customers.

Figure 6. Check if the document is a Romanian ID card

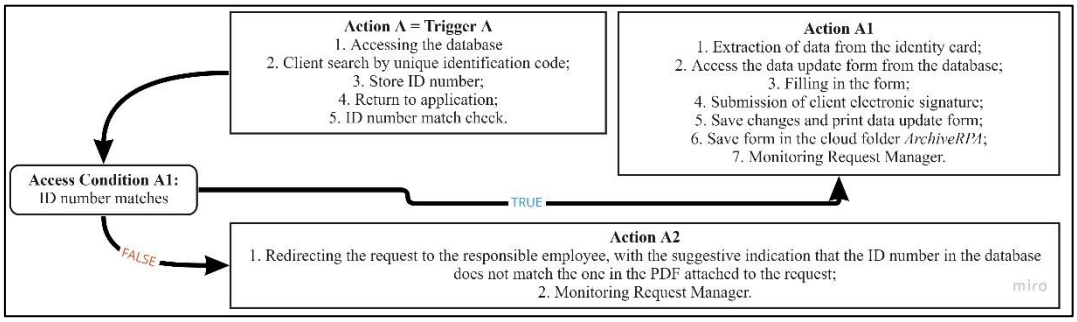


Source: Adapted by the author

If access condition A is met, the bot will open the database where it will enter the unique identification code stored in the previous action to go through the procedure of verifying that the scanned ID attached to the request belongs to the customer, the account holder, and not to someone else, thus preventing erroneous updating of

data. The procedure involves comparing the identification number extracted from the scanned document with the identification number existing in the database for the identified customer. The prerequisite for completing the update process is that the identification number matches, and then the robot executes a set of instructions, such as completing the update form, sending the customer's electronic signature, saving the changes, printing the form and sending it to the automated archiving department (Figure 7). The signature that the bot submits on the form is the one used by the customer in dealing with the bank. The action is justified by satisfying all the security conditions and procedures, as follows: authentication by the customer in the application using a PIN code or biometric authentication, validation of the request using the authentication methods and the confirmation code obtained by the customer via SMS or an e-mail sent by the banking institution. The end of the phase sees the return of the software robot to the Request Manager monitoring.

Figure 7. Check if the ID document sent belongs to the right customer



Source: Adapted by the author

The non-matching of the IDs will result in the RPA bot redirecting the request to the responsible employee with a suggestive message that the IDs do not match, so the update cannot be completed. In this situation the employee will have to contact the customer and fix the problem. After notification, the bot returns to the Request Manager's monitoring.

CONCLUSION

The existence of a variety of repetitive processes in any business, as well as the expanding phenomenon of digital transformation of organizations, presents a perfect opportunity for organizations to adopt Robotic Process Automation to streamline monotonous and time-consuming tasks. As we have observed from the literature review, researchers' views on RPA are identical, identifying the advantages of the solution. The benefits of the technology highlighted include its ability to increase the efficiency of internal processes, from generating and transmitting digital documents to receiving and resolving customer requests.

Due to the regulations imposed to ensure society's trust in the banking system, there are significant opportunities for implementing RPA. In this paper, only an automated process has been presented, its structure being flexible to the specifications of any bank's software infrastructure and can be adjusted and refined. Automating the processing of customer requests to update data generated through digital channels is an advantage for the bank in that it is able to obtain up-to-date information at any time, regardless of the customer's location or time zone related to their geographical location. At the same time, the bank benefits from the opportunity to engage human capital in tasks that require human creativity and reasoning, thus achieving value-added objectives for the bank.

Considering the expansion of the digital transformation phenomenon on the whole society, RPA will become a ubiquitous technology in the next period in the software infrastructure of any organization, and the skills to use the technology will become decent digital abilities.

Objectives for future research include identifying and structuring other digital banking processes. It would be useful to do a more detailed analysis of all digital banking processes as well as the software infrastructure in order to identify further opportunities for automation. This will make it possible to structure new automated processes capable of increasing the efficiency of activities carried out within banking institutions.

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APPROACHING COUNTRY RISK FROM THE PERSPECTIVE OF THE ECONOMIC - SOCIAL - SECURITY TRINOM – A BIBLIOMETRIC ANALYSIS

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Abstract:
Given the current trends and challenges facing the world's economies, we consider that addressing country risk from an economic perspective is becoming insufficient, this is why we propose a much more complex analysis in determining the country risk by incorporating elements related to the social component and the security environment. By addressing the country risk from the perspective of the economic-social-security trinom, we believe that the results of the analyzes can be much more relevant information to serve in substantiating the decisions of all the stakeholders in carrying out economic activities. This paper aims to analyze the state of research on the country risk approach from the perspective of the three valences, by conducting a bibliometric study of the literature in order to check the timeliness and relevance of our approach to the country risk analysis.

Keywords: Country risk, Economics, Social, Security

1. INTRODUCTION

Whether we like to admit it or not, the current context – characterized by a series of imminent imbalances, against the background of a mondoeconomic recession, as well as determined by the political-military conflicts, in the Eastern flank of Europe, respectively the traces, still, felt by the health crisis generated by the Covid-19 pandemic – they attract what in the economic literature has its roots in what is called*: risk.*

With a common meaning, risk is stated in economic doctrine as *both an opportunity* and *a probability of loss.*

The explanatory dictionary of the Romanian language defines risk as *the possibility of reaching a danger, of facing a trouble or of facing a possible damage*[1]. Risk arises, according to this conception, in the form of a threat which man tries to prevent or at least mitigate its undesirable effects.

The OECD (Organisation for Economic Co-operation and Development) definition in 1983 states that *risk is the possibility that a fact with unintended consequences may occur*[2] this definition is based on the possibility that an event (anticipated with a certain probability or not foreseen by the decision-maker) may occur to materialize and negatively affect certain aspects of economic activity (investment process).

In the evolution of the global economy, we are considering the impact of the health component – the Covid-19 pandemic – which is currently consolidating its presence with 586 cases in China. China was the first country to start a policy (*Zero Covid*) at the time of the health crisis, which influences the international trade between the Chinese state and the rest of the states, when a single case of Covid occurred in China.

The political-military component, to the same extent, impacts the global economy through an active persistence in Ukrainian theaters of operations. Sanctions and economic restrictions applied to Russia have paralyzed the oil export field, which has its consequences in the energy collapse, which is facing the entire European continent, dependent on energy cooperation with Russia.

All of these aspects manifest themselves drastically on the mono-economic space, and not ultimately, on the level of each national economy. In order to manage the inherently generated recession, there is a need for economic, financial, political, social and security experience.

In other words, the need to formulate a research in the field of analysis and assessment of Romania's country risk is highlighted, in order to better understand our country's place in the international rating, having as reference the trinom: economic-social-security.

2. METHODOLOGY

For bibliometric analysis, specialized platforms such as SCOPUS or Web of Science are generally used. The extracted database for the considered analysis is based on the SCOPUS platform, and is subsequently introduced into the VosViewer program, which *is a software tool for creating maps based on network data and for viewing and exploring these maps*[3]. For the accuracy of the results, we concluded in choosing this platform, in the detriment of WoS, following the application of two fundamental criteria for the desired analysis, namely the categories*: Business, Management and Accounting,* respectively *Economics, Econometrics and Finance.*

During the analysis, through the SCOPUS platform, we considered certain steps, with the related selection criteria **(see *Tab. no.1*).**

Table 1. The stages and selection criteria followed on the SCOPUS platform

No. stage	Stage	Criterion selected
1.	Select the search base	SCOPUS
2.	The format of scientific search framework	Documents
3.	The search within the chosen scientific framework	Article title, Abstract, Keywords
4.	Keywords to look for	*"country risk"* *"economic risk"* *"social risk"* *"security risk"*
5.	Year framework	2010-2022
6.	Subject area	*-Business, Management and Accounting* *- Economics, Econometrics and Finance*
7.	Document type	Article
8.	Analyze search results	Select All and Export

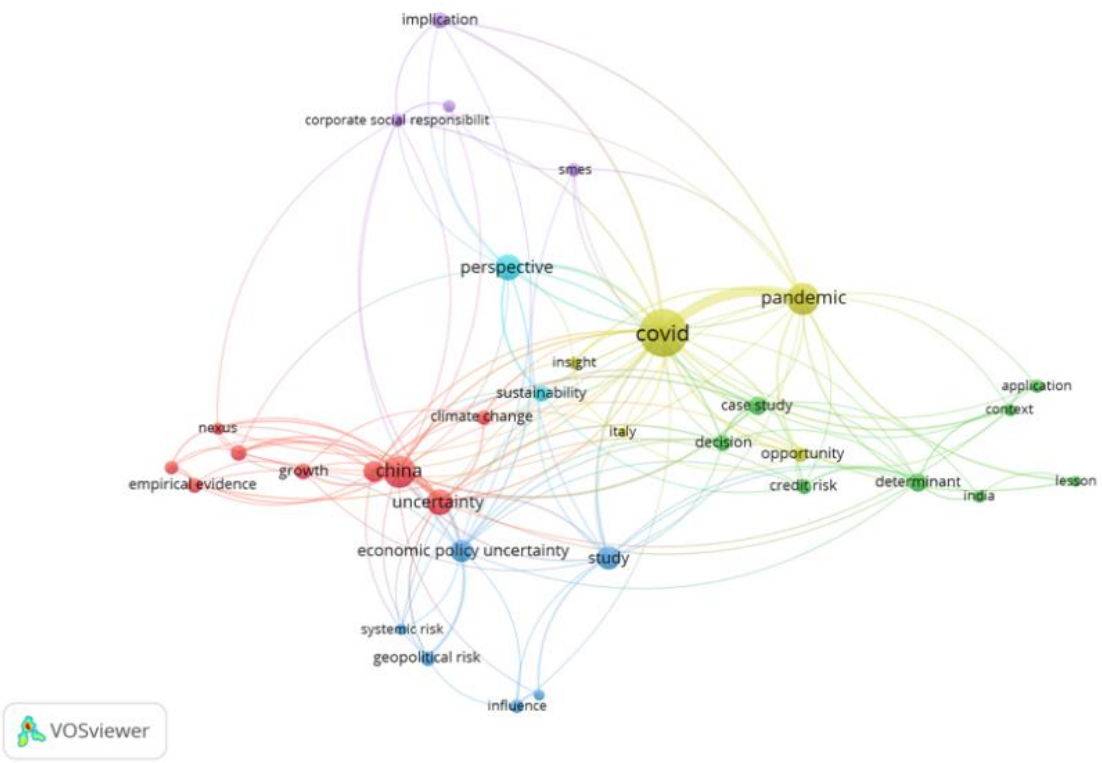
3. BIBLIOMETRIC ANALYSIS USING VosVIEWER

In order to check the current research niche and future perspectives, regarding the opportunity of country risk analysis, based on the trinom, we have carried out a bibliometric analysis, which aims to follow how the country risk was analyzed in the literature in the past 10 years. The last decade has been marked by numerous events in the geo-political area, both from a mono-economic and security perspective. From *an economic point of view*, we can recall *The Sovereign Debt Crisis* (which started in 2007 and recovered only in 2012); on a *security level* we can highlight the impact felt as a result of the annexation of Crimea in 2014, Romania being a member of NATO, but also the existence of an armed conflict in the Eastern hemisphere of Europe, with a global influence; regarding the social standpoint we are witnessing both a health crisis, with an influence on the physical and mental integrity of the world's citizens, and numerous social tensions as a result of political instability and not only.

Therefore, we considered relevant the approach of country risk, from the perspective of three components inscribed on the logical line of world's evolution: economy, social field and security.

"Economic risk"

Figure 1. Co-occurrence of author keywords – map



Economic risk is an unsafe event or process that can cause damage, loss in an economic activity, operation, or action [4].

Out of a total of 180.132 documents generated at a first search of the keywords *"economic risk",* following the application of the criteria considered relevant, we obtained a number of 17.691 documents, which address, relevant elements for the elaboration of a specialized paper, in the field of economic country risk factor.

The introduction of the database, within the VosVIEWER, could determine the correlation of various terms associated with economic risk, depending on the number of appearances in scientific articles, respectively the correlation between them by the meaning given.

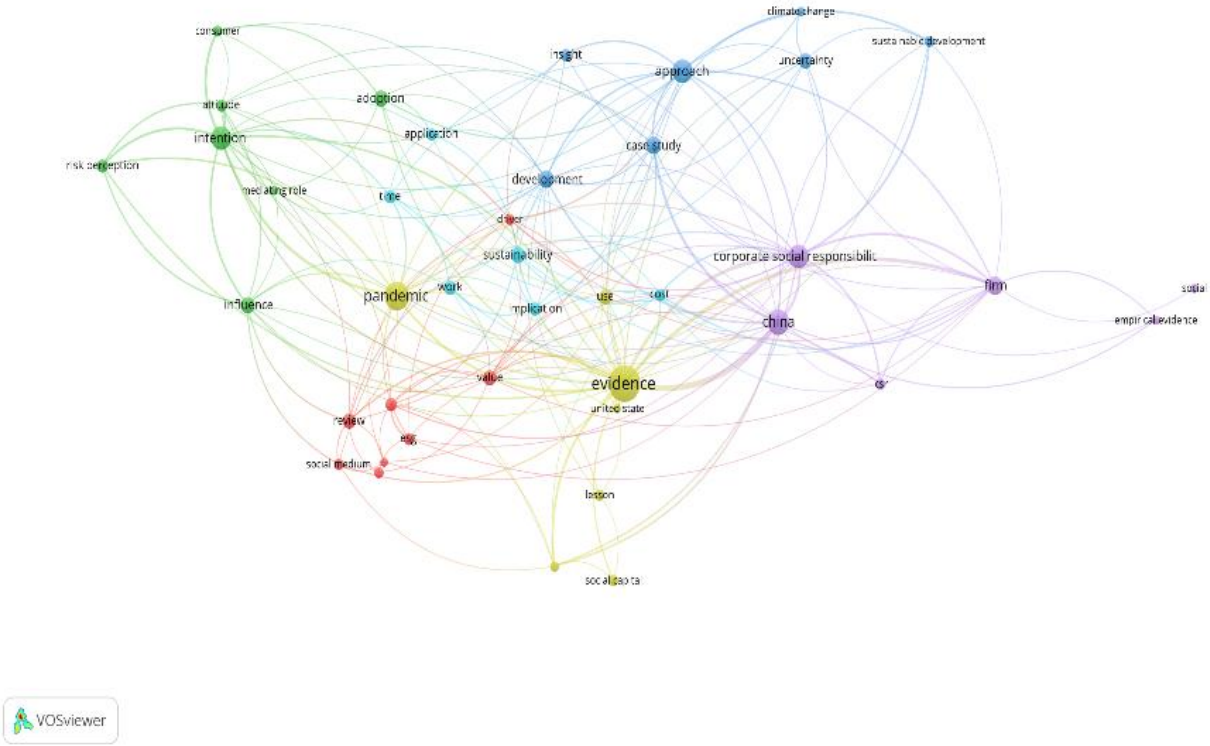
Table 2. Co-occurrence of author keywords – clusters

- **Cluster 1** (red – 9 items): China, climate change, development, **economic growth**, empirical evidence, growth, nexus, **political risk uncertainity**.
- **Cluster 2** (green – 8 items): application, case study, context, **credit risk**, **decision**, determinant, India, lesson.
- **Cluster 3** (dark blue – 6 items): Brazil, **economic policy uncertainity**, **geopolitical risk**, influence, study, systemic risk.
- **Cluster 4** (yellow – 5 items): **covid**, insight, Italy, **opportunity**, pandemic.
- **Cluster 5** (purple – 4 items): corporate social responsability, implication, smes, **sustainable development**.
- **Cluster 6** (light blue – 2 items): perspective, sustainability.

In this table, the relations between keywords – generated by SCOPUS – were reiterated in the Vos platform. Likewise, we could observe a strong bond between *economic risk* and various concepts, such *as:* ***economic growth, political risk uncertainty***, as pillars of the economic and political development of a state. Aspects, including ***credit risk, economic policy uncertainty, geopolitical risk, opporunity*** bring to attention the economic evolution and its influences along the series of events carried out within the time frame 2008-2010-2022. The gaps and trials to which the global economy has been subjected during the reference period have their origin in the broad meaning offered by the concepts generated by the search for *"economic risk".*

"Social risk"

Figure 2. Co-occurrence of author keywords – map

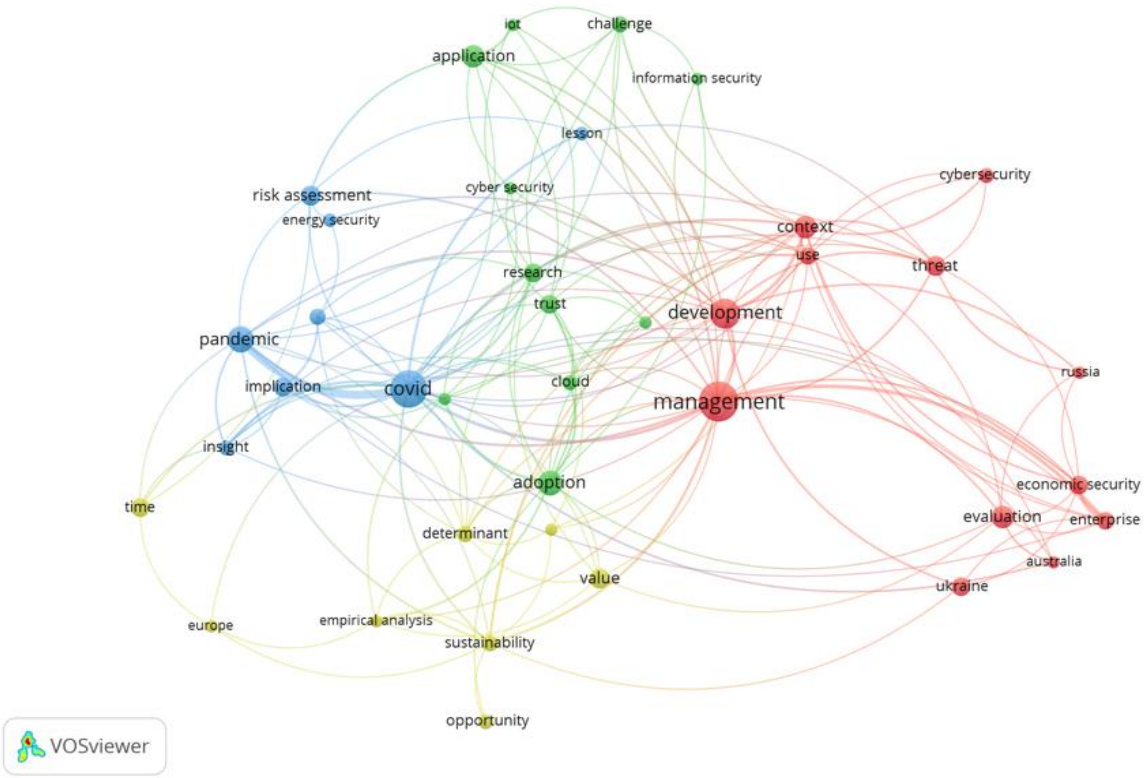


Social risk is *the exposure to losses in international transactions caused by social events (riots, religious divisions, militant syndicalism, etc.)*[5]. On a primary search of this concept, we could get a total of 356.028 documents. However, following the application of the selection criteria, there was generated a reduced number of 12.309 documents were generated, a result that is the starting point in addressing future specialized research, in the field of social risk.

In a universal concept, the approach to risk has its motivation from a **sustainability perspective**, a terminology used mostly recently. In an environment of **increasing uncertainty,** our perception of social risk can be distorted. In this regard, we shall the situation of **China**, against the background of **the Covid-19 pandemic**, which through the policies adopted, namely *The Covid Zero Policy,* has influenced and still fundamentally impacts world's society.

"Security risk"

Figure 3. Co-occurrence of author keywords – map



Country risk, economic security and sustainability variables are interrelated and interdependent between each other, in one or another direction and the level of dependence could be clearly identified [6].

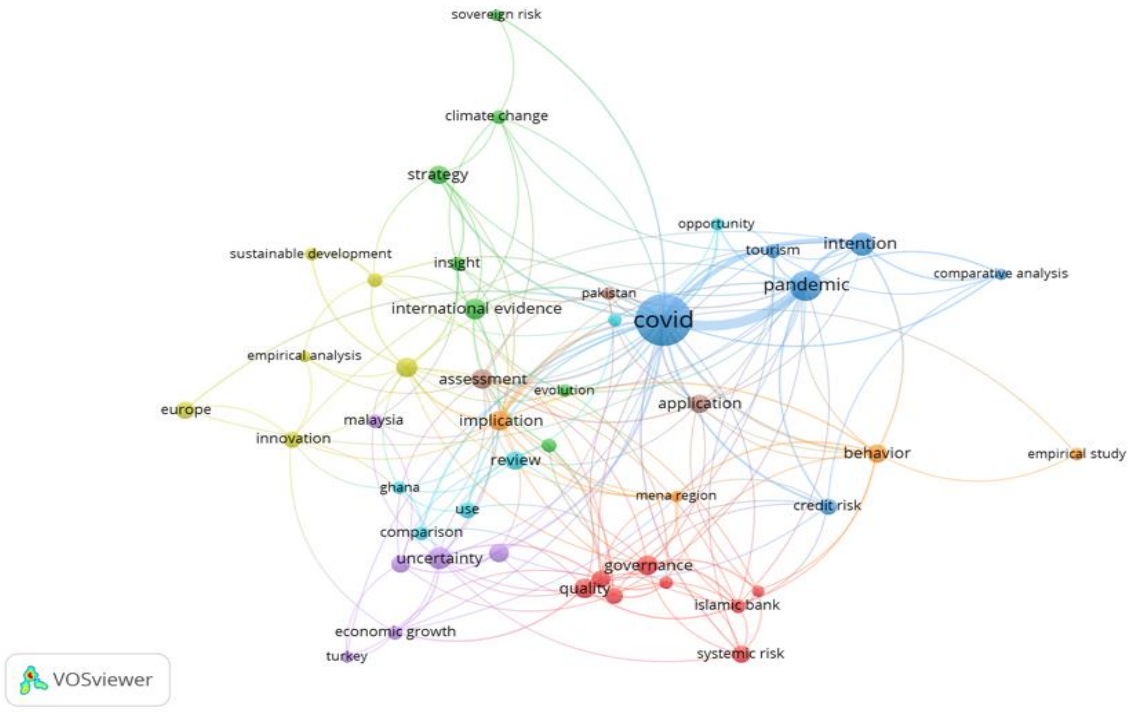
The *"security risk" concept* – if not, one of the most important topics of times, from our point of view – generates 80.000 documents, following a generalized search. Applying the selected criteria, we could emphasize a small number of resulting documents applicable to this type of risk, increasing an amount of 5.973. In fact, this data is an alarm for the scientific community to step up its research work, which is also confirmed by the instability of the current global security environment.

Considering the **Covid-19 pandemic** and the current crisis in **Ukraine**, we have noticed a high interest from the world's states in achieving economic and social integrity, in order to achieve security aims.

For that, in recent years it had increased the attention paid to the achievement of an efficient **resource management** that underpins the fundamental objective of **sustainable development.**

"Country risk"

Figure 4. Co-occurrence of author keywords – map



Country risk is defined as the determinant element of internationalization through direct investment – *it is the probability of losses from international activities as a result of economic, social and political events specific to each country*[7] .

The term – country risk – covers all associated risks of a state, which include both macroeconomic risks, and those associated with risks of the legislative system, the socio-political system, the level of corruption, socio-economic elements, such as income inequalities.

The number of documents resulting, with the central elements *"country, risk"* before the application of the selected criteria, amounts 240.989 publications and subsequently a number of 14.152 documents.

Table 3. Co-occurrence of author keywords – clusters

- **Cluster 1** (red – 8items):belt, empirical evidence, gcc country, **governance**, islamic bank, **political risk,** quality, **systemic risk**.
- **Cluster 2** (green – 7items): **bank risk**, climate change, evolution, insight, international evidence, **sovereign risk**, startegy.
- **Cluster 3** (dark blue – 6 items): comparative analysis, **covid**, **credit risk**, intention, pandemic, tourism.
- **Cluster 4** (yellow – 6 items): corporate social responsability, empirical analysis, **Europe**, **innovation**, **risk management**, **sustainable development**.
- **Cluster 5** (purple – 6 items): **economic growth**, **geopolitical risk**, Malaysia, Turkey, uncertainty, volatility.
- **Cluster 6** (light blue – 6 items): comparison, Ghana, India, opportunity, review, use.
- **Cluster 7** (orange – 4 items): behaviour, empirical study, implication, menaregion.
- **Cluster 8** (brown – 3 items): application, assessment, Pakistan.

Even if the paper addresses country risk, we can observe that, despite the assortment of criteria specific to this research (*social risk, economic risk, security risk*), the risk factors trinom, economic-social-security, was not simultaneously or unitary approached, when realizing a country risk analysis, in the timeframe 2010-2022, there are only variations of terms on the resulting maps. This is also determined by the limited number of scientific articles, which states the country risk in a trinom dependency. Similarly, in addressing the three above-mentioned risk categories – economic, social and security – as it could be seen in the attached scheme:

Figure 5. Concepts common to the three risk categories

Source: Realized by authors

In addition to the similar elements found, it is also worth noting: ***risk, management, economic growth, sustainability, corporate social responsibility, climate change or geopolitical risk***, which incorporates, in various expressions, common and essential links in strengthening a research in the field of country risk, viewed from an economic, social and security perspective.

Therefore, the importance of the country risk analysis lies, from the perspective of the three valences, outlining, in this regard, the timeliness of the topic addressed, in a global context, Marked by *economic imbalances* – such as the exponential increase in the consumer price index, fuel, the limitation of trade with Russia and other cooperating states. *The social impact*, at present, has its roots in the traces of the Covid-19 pandemic – from the perspective of the mortality rate or the significant number of unemployment – respectively, the negative effects of the political-military instability, started in February 2022. In the case *of security risk*, we can highlight the global climate, which influences the territorial integrity, as well as that of the citizens of the world, through unprecedented events, generated by the interpenetration of a probably mondoeconomic recession, of the social-health crisis – still felt – as well as the dysfunctions of international political-military relations.

4. CONCLUSIONS AND PROSPECTS

Given the current reality configuration, the country risk approach goes beyond the boundaries of the economic sphere, imposing new directions for analyzing the risk climate, also from a political, social, but especially a security point of view.

Based on the country risk analysis, through the economic-social-security trinom, the information provided becomes more well-founded, in making decisions among all stakeholders, from foreign investors to economic-social policy makers, respectively rating institutions. By using the SCOPUS database and processing the data generated using the VosViewer software, we have verified how the three risk categories: economic, social and security use common elements in their approach. We proceeded to identify them and verify how the common

concepts were analyzed in the assessment of the *country risk* among the literature, during the reference period, whether the results obtained confirmed our hypothesis that: country risk requires an interdisciplinary approach.

We believe that the integrated vision we propose in future country risk analyzes, could be the basis for much more relevant research and assessments, providing a realistic picture of the degree of risk facing a country. In the context of globalization, capital mobility should not only take into account economic or financial aspects when making investment decisions, but should also consider the social and security context of the country where the placement is to be made. From the perspective of the economic-social-political trinom could be the basis for further in-depth and topical research, contributing to a new theoretical foundation of this concept.

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MONEY LAUNDERING AND TERRORIST FINANCING THROUGH CRYPTOCURRENCIES - TURBULENT CHILD OF BLOCKCHAIN

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Abstract:
A flaming topic of these times are virtual currencies and how they change the global economy. The firefighter solution to extinguish its dynamics and volatility is analyzed the effects of money laundering and the terrorist financing through cryptocurrencies. Throughout economic history, technology has changed the face of finance and behavior`s finance, but nowadays, its impact can be surprised on a click away into another reality of networks, making room for them on the black market. Virtual revolution transformed the role, forms and uses of tangible money.
The aim of this research is to present a comprehensive framework of the money laundering and terrorist financing through cryptocurrencies, including causes and remedies of this criminal offence. Subsequently, I followed the feedback of AMLs globally, analyzed different portions of legality from American, European Union and Asia. Cryptocurrencies are the innovation in the digital area, which can transform the old transactions between banks and people into a new version of transactions alike peer-to-peer and eradicate the need of the third person or intermediaries like authorities whose role is to supervise, verify and authorize these financial agreements. Finally, I propose to highlight the number of consequences of money laundering within five years and showing some directions for future research.

Keywords: Cryptocurrencies, Money laundering, Anti-money laundering, Terrorist financing, Blockchain

1. INTRODUCTION

Over the last couple of years, the financial world was revolutionized by the nascent `digital` money called cryptocurrencies. Cryptocurrencies are a cohort of emerging electronic currencies that were created in 2009. The first cryptocurrency, Bitcoin, was developed by Satoshi Nakamoto, a nickname for a person or a group of persons whose identity is still unidentified. Florea & Nitu (2020)

By nature, virtual money has the advantage of transparency of transactions, all of them are public and can be accessed using the private key with a pseudonym, the advantage of security can be perceptive like a bank account in the cloud and it is completely decentralized and rapid of transfers.

Due to this accelerated process in financial time, the whole world regards the cryptocurrencies most like a currency such as US dollar, or a store of value like gold, or an amalgamation of both. Albrecht, McKay Duffin, Albrecht & Morales Rocha (2019).

In the contemporary stage, the fight against organized crime in the cyber environment, laid the foundations for the awareness to raise the barrier to the illegalization of criminal results, from funds obtained fraudulently. The way in which criminal operations take root, is the success of evading the criminal fruits, through the help of the virtual surroundings.

The worldwide circulation of crypto assets is emphasized by the decentralization of the Blockchain network, where the third subject – the intermediary of transferred funds, is missing. Also, the authority that should regulate, supervise, check the exits and entrances from the system, is put under anonymity. Data protection is described under the realm of network nodes, where each digital record is transmitted to the system for processing and archiving, in copies of digital wallets. Tapscott A. & D. (2016)

Cryptocurrencies represent the bridge between the decentralized environment and the regulations of the legislator, being alternative investments, in the form of intangible assets. In recent years, according to the European Commission, many of the European states are under the jurisdiction of tax havens.

This perception of money has led to an illegal market which we know such as money laundering. This phenomenon moved into the digital realm from the traditional sector. The main idea of crypto assets is their

volatility. When we discuss volatility, we refer to a high-risk of transactions. If we detail the `secret` of the black market, we can appreciate the prediction of the movement of the cryptographic market. In 99.99%, we cannot anticipate the bull or bear market on an unstable market, because the factors can be affected depending on the investor's behavior.

Money laundering represents the process of concealing the illicit origin of proceeds of crimes while terrorist financing is the collection or the provision of funds for terrorist aims. Money laundering is the main criminal activity associated with the illicit use of virtual money. Europol (2021)

The vehicle of research in the cryptographic field travels the roads of ensuring the confidentiality and protection of the personal data of users of virtual funds, which attests fiduciary exchanges on decentralized assets, in an environment of innovation and insecurity.

Cryptocurrencies are becoming the main enemy of central banks, where the market is constantly changing. Globalization could enter, with first steps, the sector of electronic payments, incorporating the centralized system with the decentralized one, in limited quantities. The impact of crypto-assets, worldwide, is reflected in the loss of control of the market, where "everything" is limited and effervescent, and its effect is a haven for tax evasion.

The story of the legality of cryptocurrencies is a superficial one, as the targets and identity are unknown and the threats possess a huge investment center potential.

The software used for cryptocurrencies is encoded and checked on the "Blockchain" - a large network of computer systems capable of verifying every database money transfer. Florea & Nitu (2020)

Money laundering is a global issue which is usually associated with organized crime and tax fraud. Money laundering is hiding or disguising the origin of illegally obtained income so that it appears to come from legitimate sources. It is frequently a component of other serious crimes such as drug trafficking, robbery or extortion. Money laundering is ubiquitous and is found in areas where it might be least expected, such as environmental crime. The emergence of cryptocurrency, such as bitcoin, has exacerbated this phenomenon. Interpol(2022)

The steps of money laundering and terrorist financing are: placement, layering and integration. In these phases, the money is collected through crime. First step is defined by the entry of dirty cash in the financial system. The second step is characterized by the attempt of criminals to distance the money from the crime source. At the last step, money re-enters the economy through `clean` investments. Allessa (2020)

2. LITERATURE REVIEW

At the time of writing this article, the specialized literature did not have a variety of point of views from the academic community, given the fact that the type of cryptographic volatility is one that is in the emerging phase and for which we hardly find certain concrete definition points.

Even so, in the following, I will present different viewpoints regarding the evolution of money laundering and terrorism financing from to tangible assets up to intangible assets of the scientists of the specialized literature, more precisely in the economic field in the last 22 years.

At the beginning of the century, money laundering was defined like a new international law enforcement model, because the money circuit in the black market requires the implementation of a specific set of rules to prevent illegal transactions. Cambridge (**2000**) Money could be moved by all manners of means and the concept of `money laundering` was a modern phenomenon which is distinguished by the transporting of diamonds bought with the proceeds of crime and designated for criminal groups. Nigel (**2001**)

A dominant player in the economic market, the banks, are a point of attraction for money launderers, because the banking sector provides three advantages in which black market can function: convenience, accessibility and security. Johnson & Desmond Lim (**2002**)

A prototype of financial crime is money laundering which marked out a significant global obstacle to keeping a sustainable financial system where a complex series of transactions and numerous financial institutions are implicated. Buchanan (**2003**) In 2004, in order to discover the money laundering inside of illegal organizations, several identification actions were started with the help of Artificial Intelligence, which recorded significant fees and inconclusive results. Kingdon (**2004**) The key to eliminating money laundering for finance terorism is a global agreement or directive for states which are legislative loopholes, known as anti-money laundering (AML) where the first step began in the United States of America. Albrecht & McKay Duffin & Hawkins & Morales Rocha (**2005**)

According to Michael and Peter, the techniques through which illegal income was channeled were: transporting cash out of the country, shell companies, buying valuables easily transported, transfer pricing and the use of "underground banks". Levi & Reuter (**2006**) The black finance has a specific purpose, namely, hiding the originally criminal or illegal source of the economic activities from the legality. Masciandaro, Takáts & Unger (**2007**)

An observation point for illegal transactions in money laundering is that it was done in cash, because cash does not leave traces on information carriers such as documents or evidence. Schneider & Windischbauer (**2008**)

The "Walker Model" is a gravity model that makes it possible to estimate illicit fund flows from and to every jurisdiction in the world and around the world. Once the extent of money laundering is known, its macroeconomic effects can be measured. Walker & Unger (**2009**) Money laundering appears in fund-raising, games of chance distributed funds later for the financing of terrorism. Schneider (**2010**) A theory of "Crying Wolf" underlines the excessive reporting for money laundering in banks can lead to the illusion of the informational quality of the reports. Takáts (**2011**)

2012 is the year of the first official data on money laundering using virtual money like Bitcoin and Linden dollar. Stokes (**2012**) The researches show that Bitcoin is regarding the next future heaven of money laundering and tax evasion. Gruber (**2013**) The process of mining Bitcoin lead to money laundering, because meticulous criminals recognize this inevitability of the blooming of technology and use technological improvements to advance their craft, committing crimes from half a world away in real time. Bryans (**2014**)

Coming as a substitute for fiat currencies issued by governments and controlled at the central level, convertible virtual currencies emphasize the decentralization process, available through Blockchain technology and in the absence of a regulation on the matter, offer gateways to the underground market. Brenig & Accorsi & Müller (**2015**) Cryptocurrencies were seen as presenting a low risk of money laundering, although Bitcoin was the virtual crypto-asset of choice for cybercriminals. Brown (**2016**) The dilemma of the regulatory authorities concerns the lack of legislation regarding the circulation of cryptocurrencies in the digital environment, these having implications on the black market, which knows a continuous effervescence. Sharma (**2017**)

A study has shown that a cryptocurrency is a convenient tool for money laundering, as it provides relative anonymity to the owner of the coin, as it does not require personal information about the user and his location. This minimizes the opportunity for law enforcement agencies to track criminal activity and identify criminal personality. Additionally, cryptocurrency transactions are outside of government control. Dyntu & Dynki (**2018**) Cryptocurrencies eliminate the need for intermediary financial institutions and allow direct peer-to-peer financial transactions. Because of the anonymity introduced through blockchain, cryptocurrencies have been favored by the darknet and other criminal networks. Albrecht & McKay Duffin & Hawkins & Morales Rocha (**2019**) Following a survey conducted on alleged criminals, cryptocurrencies present a high risk of money laundering, being favored by Blockchain technology which, although it presents greater security of transactions, addresses being accessed through private keys, and users remaining anonymous under a code name. Teichmann & Falker (**2020**)

The circulation of cryptocurrencies in the virtual space comes through the understanding of their use in the underground market for the financing of terrorism and the prohibition by banks or states to stop the evasion of the legality of the acts committed. Masiha & Assad (**2021**) In order for the global economy to reduce the access of terrorism financing and money laundering through cryptocurrencies, work is being done to amplify the

concept of transparency in transactions. This transparency is seen as a KYC function so that the anonymity of transactions disappears. European Council (**2022**)

Increasingly understanding the risks that the use of virtual currencies can bring, countries work together on common channels to combat this phenomenon of money laundering and the financing of terrorism through cryptocurrencies.

During the entire analyzed period through the "literature review", I found that money laundering and terrorist financing through cryptocurrencies are defined as a mechanism that a mechanism that you cannot control due to the lack of regulations.

3. CRYPO, CRIME AND CONTROL

In the attached table, I have illustrated what are the turning points in stopping money laundering and the financing of terrorism through virtual money, as well as what are their remedies.

Table 1. Causes and prevention of money laundering

Causes of money laundering	Prevention of money laundering
● Many cryptocurrency exchange companies locate in tax havens to avoid regulations and oversight; Collins (2022) ● The mining process influences climate change; ● Transfers can be made online, quickly, without having to find the exit gate from the state borders; ● Money laundering and terrorist financing risks related to these new technologies, affect competitiveness, consumer and investor protection and the protection of the financial integrity of the internal market. European Council (2022) ● **WHERE**? Countries/territories where foreign companies and wealthy individuals shelter their money to avoid their taxation in their home territories; countries/territories with complex financial systems that act similar to **tax havens**; ● **WHY**? Low or no taxation of non-residents, strong	● The need for registration and a central institution for supervision and control or a new EU authority to combat money laundering (AMLA) EU (European Commission); ● Limiting the mining and use of crypto assets in certain areas; ● Increasing the transparency of crypto asset transfers by tracking and identifying them; ● The issuance of some of the tokens to be supervised by the European Securities and Markets Authority and the European Banking Authority (EU); ● The imposition of AMLs and the improvement of this programs; ● Evidence for applying the mooring of decisions; surveillance of virtual dangers; Customer Due Diligence interventions, involving the presentation of supporting documents issued by the government, by identifying and

bank secrecy, extensive professional secrecy, a relaxed company establishment policy, total freedom for international capital movement, fast execution of company registration and transactions, support of a large financial center, economic and political stability, a good trademark, a network of mutual agreements; protecting the wealth of tycoons, the wide range of financial products (change the place of residence for a certain person or company; change the geographical origin of income; creates a complex mechanism of concealment); ● **WHO**? Rich people, multinationals, financial actors, legal and accounting professionals, criminals (to hide the proceeds of crime, to invest slow, to finance terrorism or to prepare someone's early retirement.), big countries, tax havens; ● Migrating during the pandemic to the online environment, including reducing the use of cash and finding other types of decentralized income; ● Tax rate and applicable measures; ● Lack of fiscal-legislative education; ● The precarious material situation of the constable.	verifying personal data, as well as monitoring and reporting suspicious transactions; regulations regarding the protection of personal data; archiving of processed data; ● The normative acts made available by the legislator to be systematized; the removal from the legislation of the parts that precede the documents preceding the entry into the underground market; ● The exercise of fiscal control at all times; ● Concrete determination and tightening of black market facts; ● Implementation of fiscal and legal education projects in schools - these aspects for the national plan; ● A model regulation for using the cashless means of the blockchain network; ● Real-time due diligence; ● Transaction monitoring and screening; ● Sanctions screening; ● Automated regulatory reporting; ● Advanced analytics like anomaly detection and machine learning; ● Dashboards, workflows and case management.

Source: Author's processing, using data from European Commision and European Council

The Financial Action Task Force (FATF) is an independent inter-governmental body that works to prevent money laundering, terrorist financing and the financing of weapons of mass destruction, and provides the global standard for AML and CFT regulations. Collins (2022) The Financial Action Task Force is focusing on creating regulatory frameworks around rapidly emerging fintech sectors. The starting point of these directives is to

protect the financial system by imposing processes for the prevention, detection and investigation of money laundering and terrorist financing.

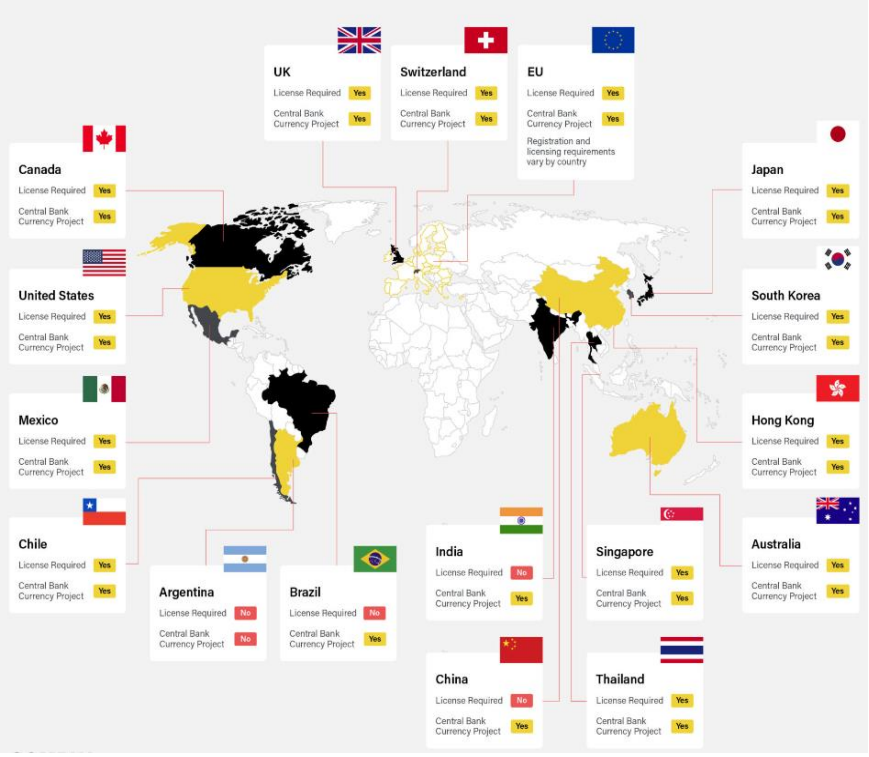
A crypto anti-money laundering programme can be successful if he follows 3 steps, according to Kacegarovas: Kacegarovas (2022)

- Customer due diligence/Know-your-customer (KYC) through biometric verification provider;
- Monitoring of activity or how to spy on your clients through monitoring wallet addresses with whom the transfers of crypto are undertaken by a particular client;
- Checks on the final steps through creating limits on crypto transfers, so that the responsible authority is notified if the customer wants convertibility or spending huge amounts.

4. AN OVERVIEW OF GLOBAL CRYPTO AML REGULATIONS AROUND THE WORLD

In the belong figures, I underlined a perspective of cryptocurrencies AML worlwide and the differenecs between reglementations.

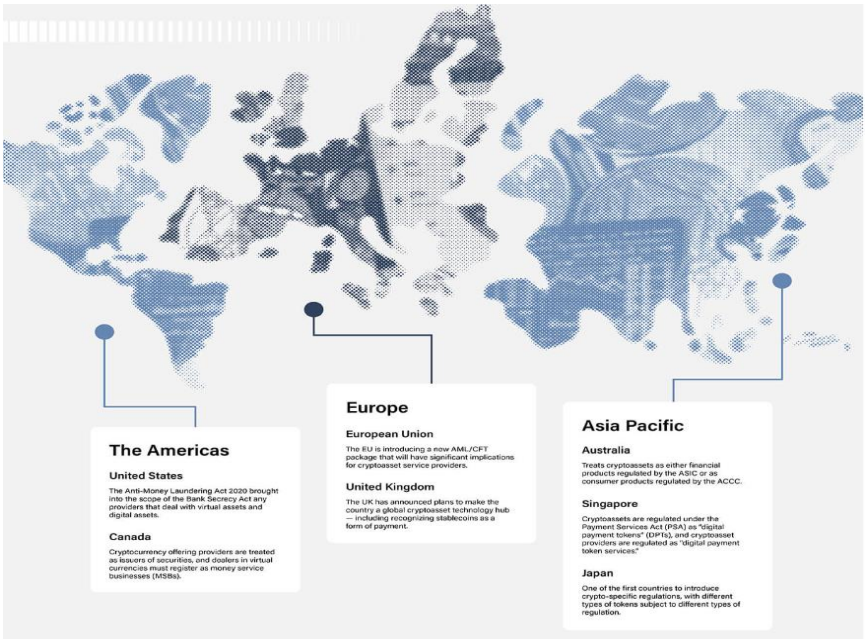
Figure 1. Crypto regulations around the world



Source: https://complyadvantage.com/insights/cryptocurrency-regulations-around-world/, accessed on 7th October 2022.

Following the data presented above, we can see that the cryptocurrencies of the countries of the world require the presence of a license for the circulation of coins, with the exception of Argentina, Brazil, China, India. Additionally, Argentina is the only state whose central bank does not have a project to issue a single digital currency.

Figure 2. Global crypto AML Guidelines



Source: https://complyadvantage.com/insights/crypto-aml-guide/#access-form, accesed on 7th October 2022

At the global level, one can observe the similarity between the continents of having some forces for the creation of a common regulatory framework for the illicit cryptocurrency market. By nature, disagreements intervene in the degree of permissibility of using these virtual currencies. We notice that on the American continent there is a more favorable jurisdiction, if we go to Europe, we see how it is in full dynamic of imposing AMLs, but also of asking for its own digital currency in several states. And if we turn our gaze towards the Asian continent, we see how the reluctance to use these economic means is accelerated, existing in most cases the banning of cryptocurrencies in exchange for the creation of their own digital currency. They rely on the creation of the common framework, which can be controlled by the responsible authorities.

Table 2. An overview of cryptocurrency rules present-future worldwide

State	Cryptocurrency	Cryptocurrency exchange	Future regulation
US	Not considered legal tender	Legal, regulation varies by state and fall under the regulatory scope of the Bank Secrecy Act (BSA) and has issued tax guidance.	Financial Crimes Enforcement Network (FinCEN) proposed a new cryptocurrency regulation for fall 2022, to collect the data of cryptocurrency exchanges and wallets.
CANADA	Not legal tender	Legal, required to register with FinTRAC after June, 2020 in accordance with the Proceeds of Crime (Money Lauder) and Terrorist Financing Act (PCMLTFA), crypto are considered securities and are subject to their	There are no signs of significant additional legislation.

		legislation, their taxation starting from 2013.	
SINGAPORE	Not legal tender	Legal, registration with the Monetary Authority of Singapore required, treats Bitcoins as "goods".	Stronger AMLstandards for cryptocurrency service and higher technology risk.
AUSTRALIA	Not legal tender	Legal, must register with Australian Transaction Reports and Analysis Centre (AUSTRAC).	There were plans to introduce a new licensing framework specifically for cryptocurrency exchanges.
JAPAN	Legal, treated as property	Legal, must register with the Financial Services Agency; 'miscellaneous income'.	New security protocols and new obligations for crypto service providers to report suspicious activity.
SOUTH KOREA	Legal, treated as property	Legal, must register with Financial Supervisory Service (FSS).	It will continue to work to bring the industry into alignment with FATF's anti-money laundering policies.
UK	Not legal tender	Legal, registration requirements with Financial Conduct Authority (FCA), must comply with the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 (MLRs).	Plans for legislation to address 'misleading crypto asset promotions' with the intention to bring cryptocurrency averts 'into line with other financial advertising'.
INDIA	Not legal tender	Regulations being considered:cryptocurrency transactions could face a 30 percent tax.	A regulation not bannation: Cryptocurrency and Regulation of Official Digital Currency Bill.
CHINA	Not legal tender	Illegal, banned all domestic crypto mining.	Announced that it had completed pilot tests of its e-CNY digital currency in several cities. The e-CNY token has been developed to replace

			cash and coins and will be accepted as payment for goods, bills, transport fares, and tolls.
SWITZERLAND	Legal, accepted as payment in some contexts	Legal, regulated by Swiss Federal Tax Administration (SFTA), considers cryptocurrencies to be assets.	A proposal to further adapt existing financial regulations to cryptocurrencies in order to address their illegal use.
LUXEMBOURG	Not legal tender	Legal, must register with the Commission de Surveillance du Secteur Financier (CSSF), "added value and efficient services"	There are no specific legislative steps on the radar.
MALTA	Not legal tender	Legal, regulated under the VFA Act.	The integration of AI with cryptocurrency regulation and may implement specific guidelines for security token offerings.
ESTONIA	Not legal tender	Legal, must register with the Financial Intelligence Unit.	Extend AML/CFT regulations to cryptocurrency exchanges: effectively banning the use of private cryptocurrency wallets provided by VASPs.
GIBRALTAR	Not considered legal tender	Legal, must register with the Gibraltar Financial Services Commission (GFSC), business-friendly 12.5% corporate income tax rate.	Blockchain firm Valereum announced plans to set up a cryptocurrency stock exchange in the territory, and bought a 90% stake in the Gibraltar Stock Exchange.
LATIN AMERICA	Laws vary by country	Sparse regulation, laws vary by country (Bolivia, Ecuador banned cryptocurrencies and exchanges, by contrast, Mexico, Argentina, Brazil, Venezuela and Chile, cryptocurrencies are commonly accepted as payment).El Salvador became the first country in Latin America to make Bitcoin legal tender	Chile, Mexico: the rollout of its own digital currency: Brazil, Colombia have introduced a regulatory sandbox to help firms try out their business models.
EU	Legal, member-states may not introduce their own cryptocurrencies	Regulations vary by member-state; The EU's Fifth Anti-Money Laundering Directive (5AMLD)	A set of legislative proposals with consequences for virtual asset service providers (VASP) across the bloc and will mandate the collection of information about senders and

		brought cryptocurrency-fiat currency exchanges under EU anti-money laundering legislation, requiring exchanges to perform KYC/CDD on customers and fulfill standard reporting requirements.	recipients of cryptocurrency transfers.

Source: Author's processing, using data from Comply Advantage, available at https://complyadvantage.com/insights/cryptocurrency-regulations-around-world/

The common point of the countries taken for analysis is the tightening of jurisdiction regarding money laundering and the financing of terrorism through cryptocurrencies. And for those countries that are against the use of virtual assets, they rely on the creation of their own digital currency that can be controlled in transactions.

EU action against money laundering and terrorist financing

The European Council and European Commission developed a circuit of the fight against money laundering and terrorist financing during the last eight years. European Council **(**2022**)**

2015: On 20 November, Council calls to strengthen the EU's fight against terrorism and in 17 December, discusses actions against terrorist financing and money laundering.

2016: On 12 February, Council discusses Commission action plan, then, on 5 July, Commission publishes proposal for an amended directive, followed by 12 July, Council discusses Commission's anti-money laundering plan and enhances tax transparency and on 20 December, Council agrees its negotiating position.

2017: On 20 December, the Presidency and Parliament reached an agreement.

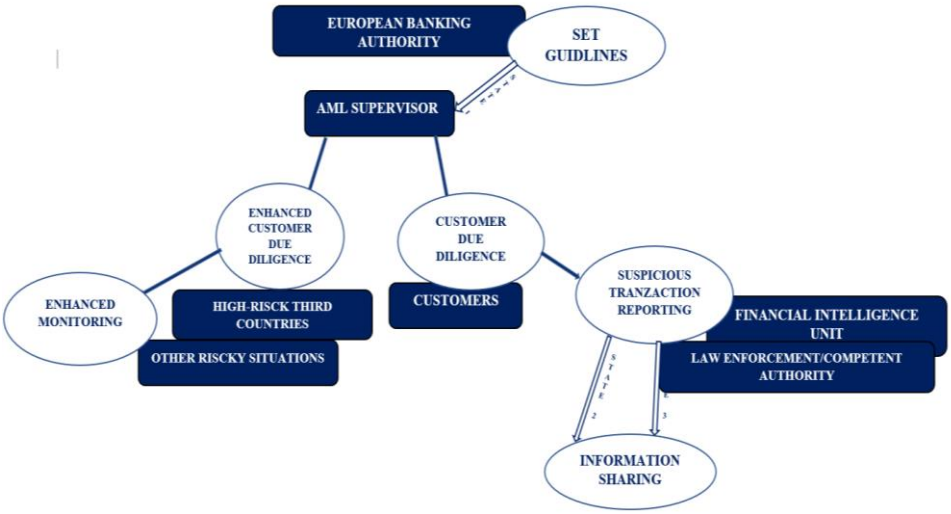
2018: On 14 May, Council adopts anti-money laundering directive, then, on 2 October, Commission presents its new proposal in the Council, on 11 October, Council adopts tougher rules on money laundering and on 4 December, Council adopts action plan for enhanced supervision and cooperation, and on 19 December, Council agrees position on reinforced supervision for banks.

2019: On 7 March, Council returns draft list of high-risk countries (23) to the Commission, on 21 March, Council and Parliament reach provisional deal on supervisory framework for European financial institutions, on 5 December, Council sets strategic priorities for further reforms.

2020: On 19 May, Council discusses plans to strengthen fight against money laundering and terrorist financing, on 5 November, Council supports further coordination and EU-level supervision.

2022: On 29 June, new EU Authority for Anti-money laundering (AMLA): Council agrees its partial position and provisional agreement reached on transparency of crypto asset transfers.

Figure 3. The results of application of the AMLs in Europe



Source: Author's processing, using data from European Commission, available at https://ec.europa.eu/info/law/anti-money-laundering-amld-v-directive-eu-2018-843_en

1987 was the year money laundering was declared illegal to prevent the drug war situation in the US by creating regulations known as AMLs, but which have not been very successful so far. Popkova & Sergi (2020)

According to the analysis of the figure above, the mechanism function step by step like this:

- European Banking Authority sets guidelines on supervision of financial institutions and identifies breaches of EU law;

- Anti-money laundering supervisors supervise whether obliged entities carry out their tasks well;

- Transactions in EU and from third countries via bank lawyers, accountants:

- Monitoring by obliged entities who should ensure they know who their customer is:

- If suspicion identified, obliged entity sends report to the Financial Intelligence Unit in their Member State:

- Financial Intelligence Unit (FIU) analyses the report and shares with FIUs in other Member States Financial Intelligence Unit has tools to help analysis: beneficial ownership registers (who is the real beneficiary of a company/trust); and central bank account registers (who has which account and where). If analysis confirmed, Financial Intelligence Unit sends it to law enforcement, supervisor or other competent authority

or

- For transactions from high-risk third countries or in other risky cases:

- European Commission determines the list of high-risk third countries, presenting a money laundering/terrorist financing risk for the Union financial system Other risks identified by Member States under national risk assessment or by European Commission under supranational risk assessment.

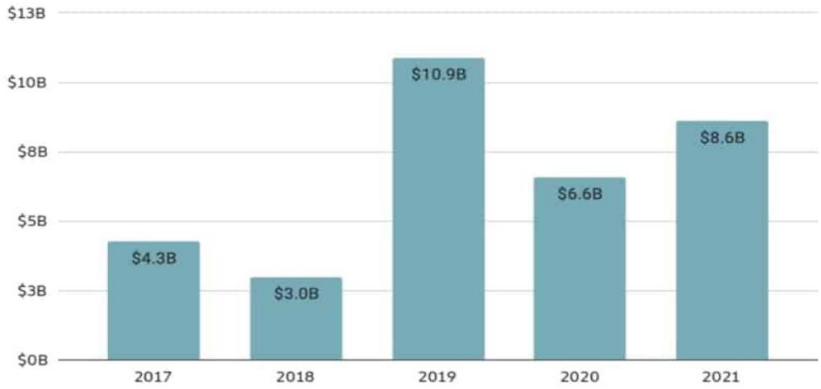
5. THE IMPACT OF MONEY LAUNDERING IN NUMBERS

The emergence of the cryptocurrency market has opened the doors for terrorist organizations, drug trafficking, human trafficking, embezzlement and criminal syndicates to conduct their unregulated money transfers. The activities of purchase, sale and substitution of virtual currencies involved the authorities of the states, at the international level, to intervene through monitoring and imposition mechanisms.

The lack of regulation in the field of virtual currencies, as well as their instability, causes a wave of gaps in the legal-financial field. Confusions of the coefficient of monetary instability underwrite the exposure to increased risk through the use of cryptocurrencies. The risk is nuanced by banking giants banning its clients from purchasing virtual currencies, due to the uncontrolled risk generated by them.

An impediment of the authorities that intervene with means of regulating the virtual market, is the analysis of money laundering that is carried out by means of the conversion of fiat money into cryptocurrencies, at the borders of the states.

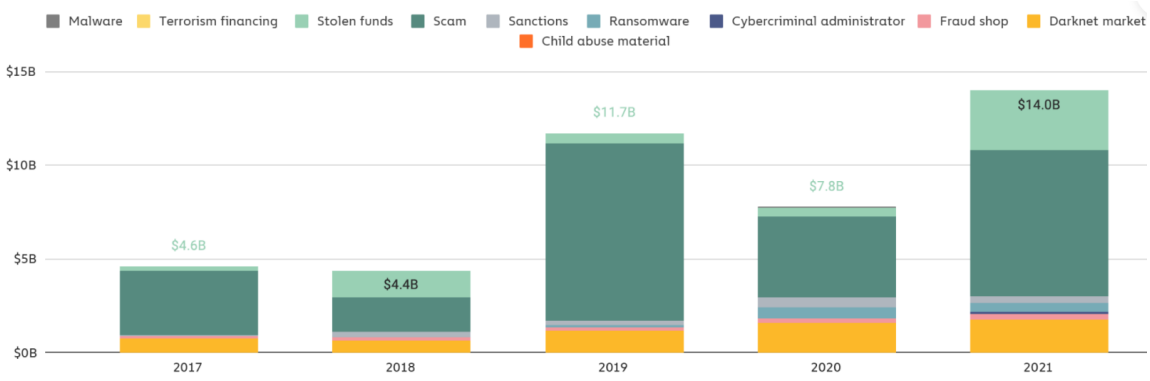
Figure 4. Total cryptocurrency value laundered by year, 2017-2021



Source: https://blog.chainalysis.com/reports/2022-crypto-crime-report-introduction/, accessed on 7th October 2022

By reading the graph above, it can be seen how the value of laundered cryptocurrencies reached around the 11 billion dollar threshold in 2019, following that in 2020 there will be a 65% decrease compared to the previous year, and in 2021 a slight increase of 30% compared to the previous year, but not exceeding 2019.

Figure 5. Total cryptocurrency value received by illicit addresses, 2017-2021



Source: https://blog.chainalysis.com/reports/2022-crypto-crime-report-introduction/, accessed on 7th October 2022

Reading the graph shows us that, along with the increase in cryptocurrency transactions, the mass of cyber crimes also increases. The figures show that the total volume of transactions increased to 15.8 trillion USD in 2021, an increase of 567% compared to the total in 2020, which led to the increase in the financing of terrorism, the black market, but also scams, the latter being crypto projects with a short life, which present a reliable infrastructure at the beginning, and then disappear from the market.

6. CONCLUSIONS AND FUTURE DIRECTIONS

Analyzing the cases on the topic of virtual currency, we can conclude that emerging states with an increased risk of corruption and tax deficiencies encounter problems in the cyber protection space. Here, tax havens sign virtual agreements for virtual assets, which cannot be subjectively affected due to the lack of official interventions and the non-productive foundation.

In parallel, with the rise of personal data protection, the cyberspace is in constant change and regarding the increase of its security.

The operation of external, high-level blockchain security can operate in the situation where there are sufficient technological and human resources. At the same time, collaboration between state institutions and international cyber defense organizations is necessary.

The increased risks and volatility that accompany the crypto mass offer bullmarkets with returns of up to 100%, and the attractiveness of investors is increasing for these assets. The fact confirmed the possibility of buying any products or services by equivalent in cryptocurrencies; where the intermediary of online payments – the crypto wallet are supported by extensions such as Zoid Pay, Netopia. On this account, the financial part of the world does not rely on the trust of decentralized systems, but, rather, is against this virtual regime, as a result of the creation of illegal tax evasions or cryptographic tax havens. Contrary to appearances, some states have adopted the Bitcoin virtual currency as a legal means of payment, among them are: El Salvador, Ukraine, Iran - payment of imports.

The effervescence of the blockchain system is translated as "the theory of the greater madman". This means that with the development of blockchain, viewed from the angles of Metaverse, NFTs, augmented reality, Onchain governance, early stage projects but with a solid foundation; the lack of their legalization leads to the enhancement of money laundering and the financing of terrorism in the space of the future.

Crypto is a small but significant fraction of global finance. For criminals, cryptocurrency remains an important and attractive pillar, given its pseudo-anonymity and speed in sending funds anywhere in the world. However, although a large scale can be used in the black market, the amount of illegal funds is a reduction of the general level in traditional finance.

The purposes of future research on money laundering and terrorist financing through cryptocurrencies are aimed at following European regulations, their application and the effects of their application, but also analyzing tax havens closely and their implications in money laundering through cryptocurrencies.

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BINANCE AND CRYPTO.COM FINTECH: AN OPPORTUNITY OR CHALLENGE TO THE BANKING INDUSTRY?

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Abstract:
The thirst for knowledge in the digital age can be quenched by journaling innovative experiences. This thirst can also be felt in the financial sphere, where the banking system is expanding to FinTech (Financial Technology). The financial industry highlights the change of the business environment through flexibility, the efficiency of the information process, the open system and the expansion of the security degree of the data exposed in relation to the users.
In this research paper, I compared the financial applications of Binance and Crypto.com. I underlined the comparison through the range of products and services offered, the crypto-non-banking functionalities, the taxes and limits imposed and the security they have. Furthermore, we have accentuated the materialization of the impact of these FinTech, through a SWOT analysis on the basis of which we detach the entire circuit of decentralization in the financial system. Consequently, the imprint of the banks of the future is described through digital globalization.

Keywords: FinTech, Binance, Crypto.com, Innovation, Cryptocurrencies

1. INTRODUCTION

Nowadays, the rising innovative direction that digitization is taking, reflects the power to adapt to the change that is happening at an alarming rate. The specialized literature treats the notion of FinTech as an emerging area for society. The magnitude of the FinTech revolution is spilling over into the business environment. The traditional prototype followed by companies is migrating towards the banks of the future, which offer financial services, aimed at the application of AI (Artificial Intelligence), IoT (Internet of Things), machine learning for the efficiency of the process of carrying out operations, as well as the pursuit of overcoming the barriers imposed by GDPR and the outsourcing of services offered. Ajiboye, Buenaventura, Gladstein, Liu , Alexander Lloyd, Machado, Song, Vranova (2021) The ecosystem of financial technologies is privileged as a game of the users of the employee in the increase of innovation and the efficiency of the financial activities, on a digitalized support. Keerthi, Han, Duc-Phong (2022) & Alt, Beck, Smits (2018)

The accessory that financial technology wears takes the form of financial applications. These financial applications outline the idea of software applications or programs, which, through the functionalities they have, offer accessibility and help to fulfill some tasks of a financial nature. On this consideration, the paper focuses on the comparison between the fintechs Binance and Crypto.com.

At the time of writing this article, in the specialized literature community it is difficult to interpret these two financial applications, due to the increased volatility in the cryptocurrency market that they support. With all this dynamism, the growth potential in the financial market follows an upward trend. The confrontation between the two fintechs, according to the press releases from Taylor Tepper of Forbes Advisor, reminds of the desire to know the cryptographic field of interested parties who have an increased appetite for risk. Teper (2022)

Correa Sabino believes that, although the specialized data is premature, however, the functionality of financial applications in the cryptocurrency exchange market on Blockchain technology, is seen as an opportunity to ignite the dynamism of the market, because, under the empire of decentralization, the results are not long in coming: costs follow a downward position, the strengthening of security barriers is increasing and the speed they provide minimizes the effort and time spent in front of the trading charts. Correa (2020)

Based on the study "Challenges and Trends of Financial Technology (Fintech): A Systematic Literature Review", the co-authors focus on the services offered by fintechs to the financial industry, especially on tracking the electronic aggregate-trading-insurance circuit. Suryono, Budi, Purwandari (2020)

According to the research paper "Dynamics of Bitcoin trading on the Binance cryptocurrency exchange", modern trading technologies interfere with the opening to challenges that a market maintains in a growing flow of information, studio focused on a mold of transactions carried out in the period 2017-2021 on BTC, which highlighted trading discrepancies as a result of the COVID-19 pandemi. Patashkova, Niyazbekova, Kerimkhulle, Serikova, Troianskaya (2021)

2. BINANCE-CRYPTO.COM BENCHMARKING

In the below table, I underlined the history, structure and features of these two fintech.

Table 1. Binance and Crypto.com at the first sight

	BINANCE	crypto.com Monaco
Year of establishment	2017	2016
The founders	Changpeng Zhao	Bobby Bao, Gary Or, Kris Marszalek și Rafael Melo
Headquarters	Hong Kong – tightening jurisdiction - tax heaven: Cayman Islands, Sicily, Malta (head office), Switzerland.	Singapore
Cryptocurrency trading	✓	✓
Listed cryptocurrencies	> 600	> 250
Digital wallet	✓	✓
Users	> 90 million	> 50 million
Margin trading	✓	✓
Volume of transaction (24h)	$76 billions	$82 billions
Cryptocurrency exchange	✓	✓
Eligible countries	>180	>90
Mobile application	✓	✓

Source: Author's processing, using data from Binance, available on https://accounts.binance.com/en/register-person?ref=S9KUXEF6&gclid=CjwKCAjw7p6aBhBiEiwA83fGus3nqijP60ijAuDe1aOt14B_UZ80MX5l2PcN9ZZ1LJlgapKA4pTt4BoCYwsQAvD_BwE and Crypto.com, available on https://crypto.com/eea.

According to the exposed data, Binance is the world's leading provider of blockchain ecosystems and cryptocurrency infrastructure, with a suite of financial products that includes the largest digital asset exchange

by volume. What brought it to the first position in the market was a high trading volume of cryptocurrencies, the basis of this phenomenon was the upward trend of the company's market value, by 40%. An important aspect to mention is that Crypto.com is a digital currency brokerage that acts as a custodian and stores cryptocurrencies. The Crypto.com DeFi wallet is non-custodial, which means that there is full control over your own private keys.

2.1. Crypto-Neobanking Functionalities

2.1.1. Authentication of Individuals and Legal Entities

The creation of the account for individuals can be done by going through the following steps: using the e-mail/phone number, subsequently being necessary to complete the country of residence and choosing the type of account (personal or business); solving a verification puzzle after completing the authentication data (email and password), receiving a verification code by email/SMS, completing the biometric verification and documentation process.

The steps for setting up a corporate account are the same as for a personal account, with the exception that the following are required to verify the account: basic information, uploading company documents (Certificate of Registration, Memorandum, Director Register etc.), request for fiat money for deposits or withdrawals, information about the parties (director, last owner and authorized dealer account) and 2FA verification (make ID and email), company - Binance statements of agreement.

2.1.2. Neobanking Products

Among the products offered by crypto.com and Binance, there are also cards in different variants, especially for Crypto.com.

Table 2. Crypto.com and Binance cards

<table>
<tr><th colspan="2">crypto.com</th><th>BINANCE</th></tr>
<tr><td colspan="3">Standard cards</td></tr>
<tr><td colspan="2">- without delivery/monthly/annual fees;
- withdrawal limits ATM (200 EUR-unlimited).</td><td rowspan="4">Binance Visa</td></tr>
<tr><td>Midnight Blue</td><td>-cashback=1%;</td></tr>
<tr><td>Ruby Steel</td><td>- stake CRO: 2% cashback + 100% cashback Spotify (= $13,99 monthly); without stake: 1% cashback;
- stake CRO = 350,00 EUR for 180 days, for card issuance.</td></tr>
<tr><td>Royal Indigo & Jade Green</td><td>- stake CRO: 3% cashback + 100% cashback Spotify & Netflix (= $13,99 monthly) + Lounge Aeroport + 10% rewards in stake CRO; without stake: 1,5% cashback + Lounge Aeroport;
- stake CRO = 3.500,00 EUR for 180 days, for card issuance.</td><td>- maximum cashback = 8% BNB;
-payments are made with the support of Google Pay and Samsung Pay;</td></tr>
</table>

Frosted Rose Gold & Ice White	- stake CRO: 5% cashback + 100% cashback Spotify, Netflix și Amazon (= $13,99 monthly) + Lounge Aeroport + 1 guest + 12% rewards in stake CRO + 10% cashback Expedia (=$50 monthly) + 2% extra APR in Crypto Earn; without stake: 1,75% cashback + Lounge Aeroport + 1 guest; - stake CRO = 35.000,00 EUR for 180 days, for card issuance.	- is denominated in EUR and transactions are made in EUR; - cryptocurrencies that can be used are: BNB, BUSD, USDT, BTC, SXP, ETH, EUR, ADA, DOT, LAZIO, PORTO, SANTOS; - funds and transactions are secured; - zero fees for issuing the card, registration and annual.
Obsidian	- stake CRO: 8% cashback + 100% cashback Spotify, Netflix și Amazon (=$13,99 monthly) + Lounge Aeroport + 1 guest + 12% rewards în stake CRO + 10% cashback Expedia and airbnb (= $50 monthly) + 2% extra APR in Crypto Earn; without stake: 1,75% cashback + Lounge Aeroport + 1 guest; - stake CRO = 350.000,00 EUR for 180 days, for card issuance.	

Source: Author's processing, using data from Binance, available on https://accounts.binance.com/en/register-person?ref=S9KUXEF6&gclid=CjwKCAjw7p6aBhBiEiwA83fGus3nqijP60ijAuDe1aOt14B_UZ80MX5l2PcN9ZZ1LJlgapKA4pTt4BoCYwsQAvD_BwE and Crypto.com, available on https://crypto.com/eea.

Based on the adjacent table, the range of products offered by Crypto.com and Binance has been captured, which is a complex one at first, and obtaining each card depends on the level of stable coin (CRO) stored. As the level is higher, the bonuses in the VIP area are accentuated. Both financial apps come with the ability to purchase a gift card, available in digital format, which for Binance features zero fees, and for Crypto.com comes with daily withdrawal limits from $200 to $1000. Moreover, Binance is currently boosting the offer with a completely free card for Ukrainian refugees, who will be offered 75 BUSD (=75 USD)/3 months, to be automatically converted to the local currency.

2.1.3. Inflections of Financial Applications

Inn the table below, we can observe the particularities and generalities of two popular fintech companies.

Table 3. Generalities and particularities of Binance & Crypto.com

	BINANCE	crypto.com
GENERALITIES		
Cryptographic loan (Finance)	- disponibility for transactions on spot/margin/futures market or staking for high APY; - guarantee is allowed for other cryptocurrencies with possibility to stake them;	- loan of 50% from value staking cryptocurrencies; - money and accepted limits: 40.000 USD, 35.000 EUR, 30.000 GBP, 50.000 SGD, 50.000 CAD, AUD 50.000, BRL 250,000 (which can increase by increasing CRO staking);

	- term of the loan begin from 7 to 180 days; - the possibility of early repayment, without charging any penalties; - transaction fees are zero; - interest rate=3x/hour for expired repayment time and by exceeding them by more than 72 hours, the positions are closed automatically; - the creditor takes into account the LTV index like ratio between the loan amount and the collateral value.	- converted from available cryptocurrencies: CRO, BTC, ETH, LTC, XLM, EOS, ADA, ALGO, ATOM, VET, LINK, WBTC, DOT, XTZ, FIL, MATIC, AVAX, KLAY, SOL, ENJ, SAND, HNT, ONE, NEAR can receive $5.000 in stable cryptocurrency:PAX/TUSD/USDC/USDT; - annual interest rate = 8% and monthly rate = $33,33; - without limit terms for declarations, repayment or late fees and unverification of loan.
Flexible/Defi Staking & Locked Staking – Binance and Crypto Earn	- the stake locked offers an higher APY in exchange for depositing coins on fixed terms (7-90 days); -APY varies from 1,49% to 33,12% on a range of 64 locked stakes and 11 total DeFi stake coins.	-APY follows an ascendent tendency in depending on the card used,CRO locked volume and the coins that can be blocked are: EUR, GBP, SGD, CAD, AUD, BRL, with minimum and maximum allocation limits.
Mobile Pay	**Binance Pay** allows sending and receiving cryptos to/from other users, via QR / e-mail / phone / ID Pay. 30+ cryptocurrencies supported.	**Crypto.com Pay** allows users to pay at merchants, buy gift cards, mobile minutes and send others cryptocurrency. Card bonuses = [1.25-10%] and cashback is matched in CR. .
Cryptocurrency withdraw	**Fiat Withdraw** resumes cryptocurrency to currency conversion via SEPA supported bank transfer (1EUR fee, 1-4 days), or VISA bank card (1 fee), or P2P Express (zero fee), or Advcash (zero transfer fee). **Crypto Withdraw:** withdrawing cryptocurrencies from Binance account to another exchange wallet.	**Fiat Withdraw:** cryptocurrency to currency conversion via bank transfer supported by SEPA. **Crypto Withdraw:** withdrawing cryptocurrencies from your Binance account to another exchange wallet by selecting the desired cryptocurrency and amount, then choosing the network and filling in the address.
Transfers	-free from Fiat/Spot to Finance/Futures and vice versa, except transfers from Fiat/Spot to external wallets;	-free from Fiat/Spot to Finance/Futures and vice versa, except transfers from Fiat/Spot to external wallets;

	-3 confirmation speeds that increase directly proportional to commissions: Medium (30 minutes), Fast (2 minutes), Super fast (30 seconds).	-USDC bank transfer, where deposit limits vary: minimum limit=100USDC, daily limit=1,000,000 USDC, monthly limit=10,000,000USDC.
Digital wallet	-offers the Trust Wallet for storing cryptocurrencies.	-offers custodial wallet, which saves merchants' network fees and non-custodial wallet, which aims to access and control private keys.
	Particularities	
	P2P trading allows users to trade with each other without charging fees by issuing sell/buy orders.	**Supercharger** ensures through CRO staking earnings with an APY of up to 38.12%, depending on the event, over a period of 30 days.
	Binance Futures offers users the opportunity to trade cryptocurrency pairs by using high leverage.	**Crypto.com Exchange:** - **Swap:** spot/margin trading 200+ cryptocurrencies with up to 10x leverage. - the **Syndicate** function, which gives users the chance to purchase recently listed tokens with up to 50% discount; - the possibility of trading cryptocurrency pairs on the futures/margin market.
	Farming Liquidity allows the formation of the liquidity pool (consisting of two tokens X&Y), the blockchain offers the possibility to add the pair of cryptocurrency X and cryptocurrency Y (zero fee), or cryptocurrency X or cryptocurrency Y; with minimum and/or maximum limits imposed on the two selected tokens; -generate liquidity panel consisting of: pool size, price, commissions, slippage (0.1-1%), share (commission going to the pool), pool portion (percentage of the transaction commission that belongs to the one entering the pool) and the yield offered.	**DeFi Wallet:** -non-custodial wallet for 100+ cryptocurrencies; - the **Earn** function amplifies interest rewards for over 35 tokens with Yearn Earn V2, Compound, Aave, Crypto.org Chain Staking and Cosmos Staking, without lock-in deadlines being conditioned; - **Swap**: swap: exchange from one cryptocurrency to another cryptocurrency; adding a pair of cryptocurrencies to the liquidity pool; boost: improve yield by CRO staking from 1 month to 4 years, APY depends on the total liquidity brought into the pool and the volume of cryptocurrency stored.
	Farming Swap provides access to convertibility in a stablecoin (BNB/BTC/USDT) with table generation: price, risk (0.1-1%), exchange fee charged by providers, BNB exchange fee and fee as	

	difference between the two previously mentioned.	
	Fiat Deposits currencies that can be deposited are: GBP, USD, EUR, TRK, KZT, AUD, BRL, PER, RUB, UAH, UGX, PHP, by: bank transfer supported by SEPA (fee 1EUR, 1-2 days), bank card VISA/MC (1.8% fee), P2P Express (zero fee), Advcash (zero transfer fee and €1 deposit fee). **Crypto Deposits** accessed by sending cryptocurrencies from other wallets of other exchanges (EGLD Maiar - Binance EGLD), and the fees charged for transactions differ depending on the network (Binance, Elrond, Ethereum) on which they are carried out.	

Source: Author's processing, using data from Binance, available on https://accounts.binance.com/en/register-person?ref=S9KUXEF6&gclid=CjwKCAjw7p6aBhBiEiwA83fGus3nqijP60ijAuDe1aOt14B_UZ80MX5l2PcN9ZZ1LJlgapKA4pTt4BoCYwsQAvD_BwE and Crypto.com, available on https://crypto.com/eea.

By studying the table we can see how both fintechs come with a variety of functions, being similar in terms of transfers, granting loans, staking, mobily pay and withdrawals. And as features, Binance comes with Farming Liquidity, Farming Swap, P2P trading and Binance Futures while Crypto.com comes with Functions such as Supercharger, Syndicate and DeFi Wallet.

2.2. Taxes And Imposed Limits

2.2.1. Fees

In the tables below, I presented the trading fees for Binace and Crypt.com.

Table 4. Trading fees

	Binance	**Crypto.com**
ATM Withroug	up to 0,9%	after monthly free limit: 2%.
Interbank Exchange		after monthly free limit: 0.50%

Close Account	€0	€50
Reissue Card	€25	€50
Inactivity (12 months)	€0	€5

Source: Author's processing, using data from two fintech.

Table 5. Binance trading fees

	Level	**30d Trade Volume (BUSD)**	**Maker/ Taker**
Spot Trading	Regular User	< 1.000.000 BUSD	0.1000% / 0.1000%
	VIP 9	≥ 5.000.000.000 BUSD	0.0200% / 0.0400%
USD-M Futures Trading	Regular User	< 15,000,000 BUSD	0.0200%/ 0.0400%
	VIP 9	≥ 25,000,000,000 BUSD	0.0000%/ 0.0170%
COIN-M Futures Trading	Regular User	< 15,000,000 BUSD	0.0100%/ 0.0500%
	VIP 9	≥ 25,000,000,000 BUSD	0.0090%/ 0.0240%

Source: Author's processing, using data from Binance, available on https://www.binance.com/en/fee/schedule

According to table 4, Binance is the leader in charging the lowest interbank transaction fees as well as free account closure or inactivity compared to Crypto.com. According to Table 5, the trading fees applied by Binance differ according to the types of transactions: spot trading, margin lending, USD-M and COIN-M futures, cross collateral interest (BTC, ETH, EUR), swap farming, P2P. If BNB (Binance Coin) is not used to

pay transaction fees, an additional fee of 0.1% will be charged for each transaction. For spot commissions, a 25% discount applies, and for USDⓈ-M futures commissions, a 10% discount.

2.2.2. Applicated Limits

Binance and Crypto.com have limits for transactions which are presented below depending on the type of card used: SEE card, refugee card (for Ukrainian) or virtual and physical card.

Table 6. Limits of operations for Binance and Crypto.com

	BINANCE	CRYPTO.COM
ATM Limit	SEE Card: €290; Refugee Card: €200.	*Midnight Blue, Ruby Steel, Royal Indigo/Jade Green, Icy White/Rose Gold & Obsidian:* €2,000(DD); €10,000(MM); €75,000(YYYY)
Interbank Limit	€0	*Midnight Blue*- €2,000, *Ruby Steel* - €4,000, *Royal Indigo/Jade Green* -€10,000, *Icy White/Rose Gold* - €15,000, *Obsidian* – without limit.
Top Up Limit	€0	*Credit/Debit Card*: €25,000(DD); €25,000(MM); €250,000(YYYY).
Transfer Limit		*Credit/Debit Card or cryptocard or fiat-card*: €25,000(DD); €25,000(MM); €250,000(YYYY). *Card-card:* €100 (DD); €3,000(MM); €50,000(YYYY).
POS Purchase Limit	Max. €50 (>€150 = enter PIN/security code); - Virtual Card: €870 (EEA Card) or €500 (Refugee Card); - Physical Card: €8.700 (EEA Card) or €2.000 (Refugee Card).	*All card:* €25,000(DD); €25,000(MM); €250,000(YYYY).

Source: Author's processing, using data from Binance and Crypto.com limits

In the table above, it can be seen how Binance is the leader in front of Crypto.com in the commission and limits section, an idea that emerges from the permissiveness and freeness of most operations that can be performed on exchanges. The limits and fees of fintechs analyzed include the European area or the EEA countries, due to geographical restrictions, by Binance, on the US (later concluded an agreement for the legality of Binance transactions, creating Binance U.S., but which still suffers territorial distortions, and on Crypto.com, of some Asian countries.

2.3. Security

If we analyze the security of fintech, we can watch this on three pylons: account security, cryptocurrency security and securing funds.

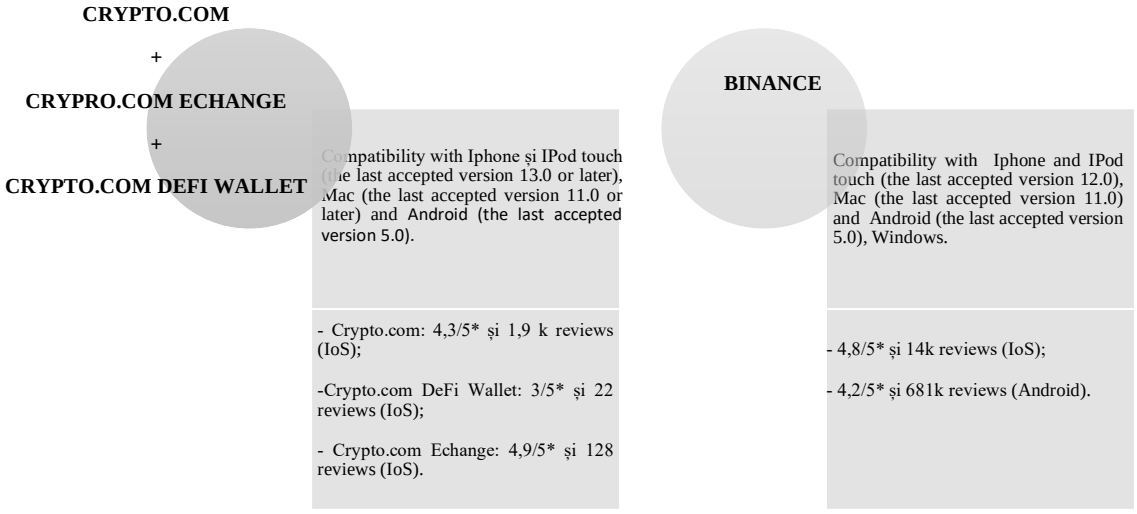
Account security: activating the Anti-Phishing Code; API keys with the recommendation to restrict IP addresses; 2FA (SMS / Google Authentication) and U2F (eg Yubico YubiKey - hardware authenticator), which allows access to the account only if they are connected to the computer or associated wirelessly; mandatory inclusion in the white list of external addresses by checking by email. Crypto.com also comes with advanced privacy protocols.

Cryptocurrency security: 100% of users' cryptocurrencies are kept offline in cold storage, through the integration of institutional-level custody, Ledger Vault and use of hardware security modules (HSM) and multi-signature technologies (just for Crypto.com); the KYC measure, which protects users against identity theft, financial fraud and money laundering; enforcement of AML regulations to combat money laundering and terrorist financing through the use of cryptocurrencies; using a strong private key for decryption; hold a seed phrase (12/18/24 words); se of DeFi, DApps, wallets: hot (software), cold (hardware), with custody (access and control to private keys), without custody.

Securing funds is listed by Binance through SAFU (Secure Asset Fund), an emergency insurance fund for cryptocurrencies (BUSD, BNB, BTC), valued at $1 billion Crypto.com has secured a total of $750 million in insurance for cold storage against physical damage or destruction and theft by third parties, and the user trust is held in regulated custodial bank accounts (insured balances for US residents to date up to $250,000). In addition, it also comes with the ability to expose security vulnerabilities through the external bug bounty program on the main Hacker One platform.

2.4. Scoring Applications

Figure 1. Scoring for Binance & Crypto.com



Source: Author's processing, using data from App Store and Magazin Play

In the figure above, we can see a common point of these fintech alike the compatibility with all operating systems.

3. SWOT ANALYSIS

Table 7. The SWOT analysis of Binance and Crypto.com

STRENGTHS	WEAKNESSES
● Garantees: Binance-SAFU and Crypro.com – custodian bank; ● POS payments at terminals with the VISA logo; ● Functionality on Blockchain technology: speed, security and low costs; ● Compatibility with all operating systems; ● Rewards: moneyback and APY; ● APY savings < APY staking; ● Increased security through repetitive biometric verification requests; ● Wide range of financial products and services; ● *Crypto.com*: enhancing the security system; ● *Binance Academy* - free learning environment and complex; the lowest commissions; variety of cryptocurrencies.	● Binance: non-guarantee of products and services by an authorized institution from the external environment (eg. Bank Deposit Guarantee Fund - FGDB); slightly intimidating learning platform; ● Crypto.com: insufficient information resources; ● Territorial restrictions: Binance (USA) and Crypto.com (China); ● Difficulties in assistance.
OPPORTUNITIES	**THREATS**
● Alternative security = TOR/Brave Browser (security strips) + VPN; ● Reduced commissions by reaching VIP levels; ● *Binance:* free launchpad access and *Crypto.com:* sale 50% through Syndicate; ● Cryptocurrency volatility↑= commission volatility↑ → high risk → high yield; ● Research to improve the security of FinTechs; ● Derivate assets: NFT-uri.	● Possible FinTech competition; ● Reluctance of banks to transfers and withdrawals of fiat currencies - cryptocurrencies; ● Cryptocurrency volatility↑= commission volatility↑ → high risk → high failure; ● Tightening of legal regulations and possibility of cyber attacks.

Source: Author's processing, using data from Binance and Crypto.com

4. CONCLUSIONS AND RECOMMENDATIONS

Creating an overall picture, Binance and Crypto.com are some of the most developed FinTechs, offering a complex range of products and services of a financial nature. After researching these fintechs or crypto asset exchanges, I nuanced the idea of innovation that they bring to society and the magnitude felt through every movement of the crypto market.

The sensitive points of these two fintechs take the form of geographical restrictions and the incubation of the security system they have; these being the dose of recommendation towards which companies should go with improvements.

In closing, the trigger for this research was: *How far can the financial industry go with innovation?*

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Abstract:
This paper deals with a research about organizations in all business and trade sectors, as well as the individuals who make up such organizations, have found the principles of overall quality management to be of great value. In fact, a lot of businesses have realized how much quality and success are related. It is crucial to create a quality strategy by implementing TQM (total quality management) concepts right now more than ever.
The three objectives that form the basis of this paper's goal are: the first is to present theoretical aspects of quality and quality management; the second is to describe the methods and instruments of TQM (Benchmarking, Fishbone chart and Quality function deployment (QFD); and the third is to introduce an example of service (healthcare) using the presented approach. This work will contribute to the field of quality management, as well as a practical overview for companies.

KEYWORDS: quality management, TQM, methods and instruments TQM

1. INTRODUCTION

As its name suggests, total quality management relates to everyone in the organization keeping an eye on quality across the board. This means that if issues are discovered during the manufacturing process, it is the duty of that individual to address them before they affect the rest of the process. By doing this, issues will be discovered before they affect the consumer. And if they occur, every attempt will be made to address them. TQM (total quality management) emphasizes continual improvement and customers, suppliers, employee's satisfaction. The morale of an organization's employees will rise if they are working effectively. If the organization operates like a family, TQM is effective. Each member of a TQM team must take part in improving procedures, goods, services and workplace culture. Quality management can be interpreted in different ways. Peter Drucker (2002) says: "Product quality is not everything, but everything is nothing without quality " while Edwars Deming (1993) states: "Quality is everyone's responsibility ".

Instead, from our point of view quality is when the customer returns, not the product. In recent years, more and more companies aim to offer a superior product quality following the accumulated experiences that claim that the term quality does not depend on luxury, but on the idea of "zero defects".

In this paper we will provide a theoretical perspective on quality management and explain the TQM practice tools and procedures. I'll wrap up by providing a few examples of products made using the suggested technique. Obviously, this paper will contribute to the management and quality management fields, as well as provide a useful overview for businesses.

2. LITERATURE REVIEW

The characteristics of a product that satisfy customers and meet their requirements are referred to as "quality". In this way, quality has a meaning that is tied to money. One hopes that a higher level of quality will result in increased revenue and greater customer satisfaction. However, providing more features or features of higher quality typically necessitates an investment, which typically results in price increases. According this, higher quality typically "costs more".

Quality management is the process of controlling all tasks and obligations necessary to uphold a desired standard of excellence. Quality management includes the establishment and implementation of a quality policy, quality assurance planning and execution, quality control, and quality improvement.

Since recent special issues on humanitarian supply chains and relief operations have highlighted the growing significance of quality management in this crucial new field, quality management has received a lot of attention in the literature. We synthesized some important definitions in the table 1.

Table 1. Quality management (QM)- Definitions

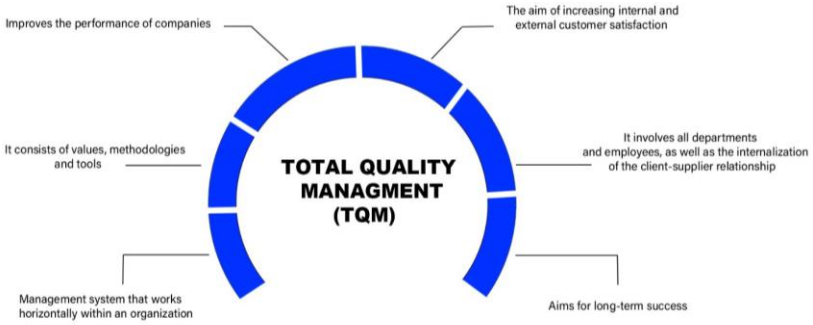
YEAR	AUTHOR	DEFINITION
1979	Philip B. Crosby	„Quality is free"; „Quality means 0 defects."
1994	Joseph M. Juran	„Fitness for use. Fitness is defined by the Customer."
1997	William A. Foster	„Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution; it represents the wise choice of many alternative."
2001	Peter Drucker	„Quality in a product or service is not what the supplier puts in. It is what the customer gets out and is willing to pay for."
2004	Henry Ford	„Quality means doing it right when no one is looking."

Source: adapted by authors according literature review

Numerous research publications on a variety of quality management topics have been published in scholarly journals during the past 20–25 years, demonstrating the topic's high level of interest in both developed and emerging countries. TQM is described as "an all-inclusive business management belief, which consists of a set of guiding principles that exemplifies the foundation for continuous improvement," according to Lin and Ogunyemi (1996). It is regarded as the most "holistic" approach available to date for sustaining the efforts for organizational improvement.

Dar-El (1997) asserts that TQM, which Lin and Ogunyemi (1996) defined as "an all-inclusive set of business management beliefs consisting of a set of guiding principles that exemplify the foundation for continuous improvement," has been the most "holistic" approach to maintaining efforts for organizational improvement. Total quality management (TQM) has generally been known as a "management philosophy and a way of thinking" to transform an organisation's status to a world-class level (Yusof and Aspinwall, 2000).

Figure 1. TQM concept



Source: adapted by authors

A review of the TQM literature revealed that "TQM practices could be maintained in seven areas: leadership, strategic planning, customer focus, information and analysis, HRM, process management, and supplier management" (Sila, 2007).

Table 2. Total Quality Management (TQM)- Concept

YEAR	AUTHOR	DEFINITION
1987	Juray Joseph.	"Quality is not accidental but must be planned "
1990	J. Koller	" TQM is a systematic way of managing an organization
1993	Edwards Deming	"Product quality is not everything, but everything is nothing without quality"
2002	Peter Drucker	"TQM is everyoane's responsibility "

Source: adapted by authors according literature review

In Industry 4.0, the concept of total quality management (TQM) has gained more importance because the survival of the organisation depends on better quality management. Using a review of the literature as a basis, we will present some methods and practice instruments in TQM.

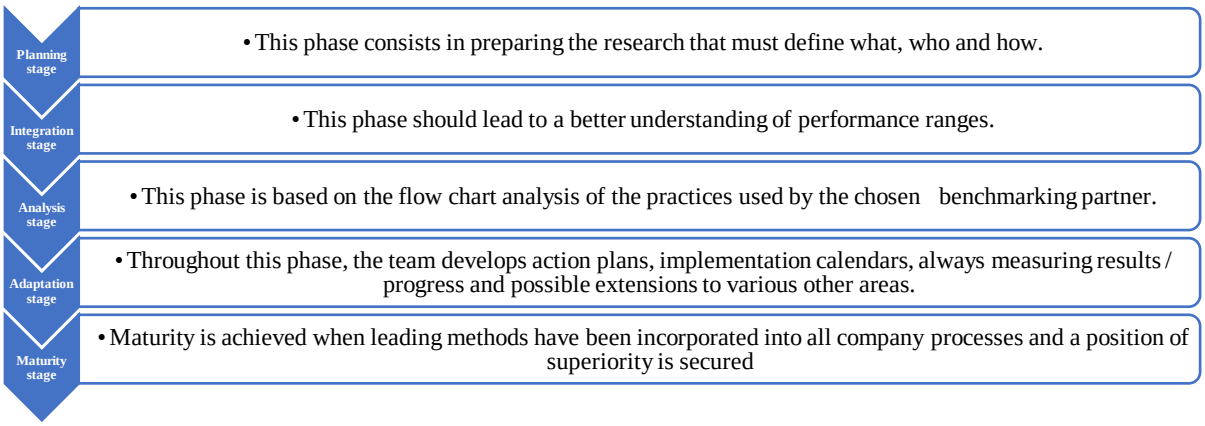
3. METHODS AND PRACTICE INSTRUMENTS IN TQM

The acronym "TQM Tools" refers to instruments for total quality management—not just for one type of organization but for all organizations. It states that all employees, including management, must work toward enhancing the existing business process, increasing productivity and efficiency, and fostering interoperability among the organization's departments.

The key to the success of companies when it comes to the quality management system lies in some measurement methods and techniques. We will highlight some of them.

- **Benchmarking -** It represents a process of comparing the practices used by competitors and implementing new ideas within one's own activity. Benchmarking methods are extensive and differ according to the number of stages (Figure 2):

Figure 2. Benchmarking methods



Source: adapted by authors

When a tool is developed, the subjects used should be those for which the instrument is intended for.

- **Fishbone chart -** is an analysis tool that characterizes a certain procedure. This diagram is also called the "Ishikawa diagram", because it was invented by Kaoru Ishikawa, but it is also known as the "fishbone diagram", because its structure resembles that of a fish skeleton. This diagram generally shows us the main and secondary causes of a certain effect or symptom. With this type of diagram, you work in groups through the brainstorming process, and it is often used to identify the root causes of different types of problems. This feature explains why this tool is also known as a cause-and-effect diagram. It a simple diagram of this kind, the problem to be solved with its help is noted in the "head" of the fish, then along the "bones" the causes are presented and divided into categories. If there are additional causes, they can be added on new branches.

This fishbone diagram has as its main objective the graphic illustration of the connection between the result and the factors that helped its appearance. This tool has main objectives such as:

- finding the root causes of a problem;
- focusing attention on a problem without resorting to complaints and unnecessary discussions;
- finding areas with little information

This diagram is applied when we want to:

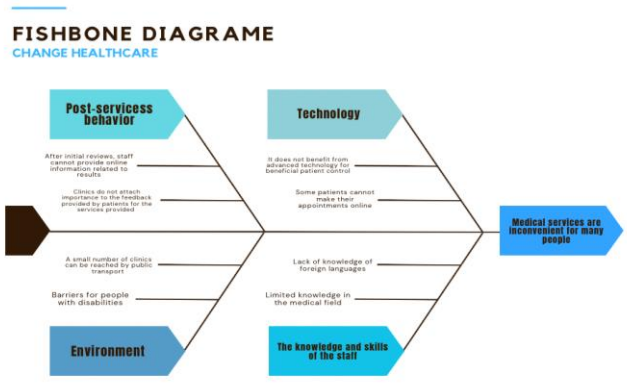
- we focus attention on a problem;
- we focus the team's attention on the causes, not the symptoms;
- we show the relationships between the various factors that influence the problem;
- we understand in the best way how that process works.

This type of diagram provides us with a significant number of advantages such as:

- helps to find out the main causes;
- stimulates the group to active participation;
- it is orderly and easy to work with, highlighting the relationship between cause and effect;
- it shows us what can be replaced;
- it shows us which areas require more information.

The structure of such a diagram is presented below:

Figure 3. Fishbone diagram Healthcare industry



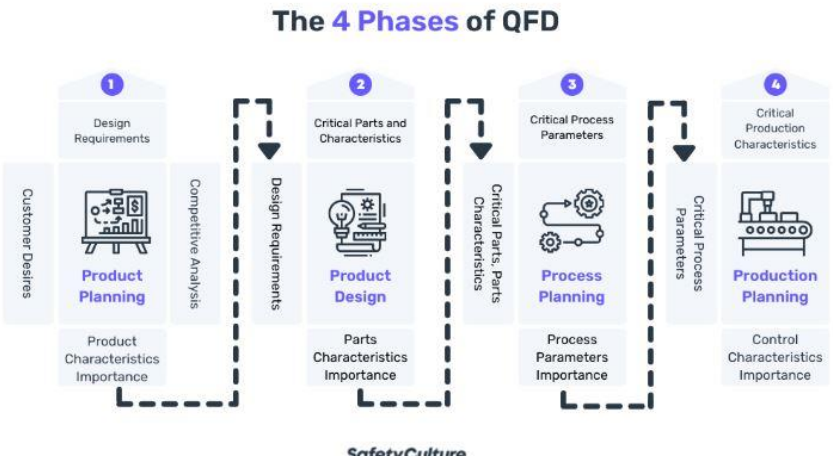
Source: https://www.dmaictools.com/dmaic-analyze/fishbone-diagram/fishbone-diagram-excel-template

The healthcare sector is progressively embracing sophisticated health IT solutions like analytics solutions, population health management solutions, and quality management systems as a result of the transition to value-based treatment and increased quality reporting requirements.

To stay up with evolving regulatory and reporting requirements, the healthcare quality management industry is defined by ongoing technology advancements.

- **Quality function deployment (QFD) -** is used to precisely define client needs and translate them into engineering specifications and production schedules for the goods that meet those requirements. In order to drive customer needs (or VOC) from the assembly level down through the sub-assembly, component, and production process levels, it is necessary to apply quality function design (QFD). A defined set of matrices is provided by QFD approach and is used to aid this process. While working for Mitsubishi's shipyard in the late 1960s, Yoji Akao created QFD for the first time in Japan. Later, other businesses embraced it, including Toyota and its supply chain.
  A quality function implementation emphasizes the design of the product and its process (Figure 4):

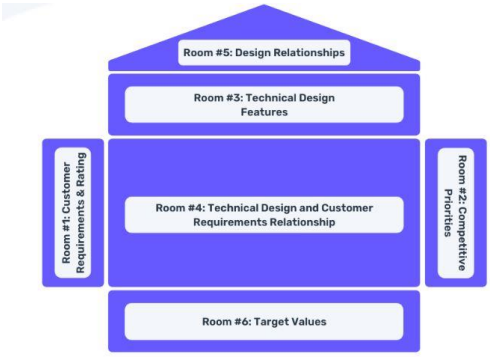
Figure 4. Quality function deployment (QFD)



Source: https://safetyculture.com/topics/qfd/

The process of QFD is structured into 4 phases: Product Planning, Product Development, Process Planning, and Production Planning. Each matrix or visual representation used under each of the 4 phases is related to the previous one.

Figure 5. House of quality



Source: https://safetyculture.com/topics/qfd/

Excellent performance By taking into account customer preferences at the outset of the design phase, deployment helps businesses most by ensuring they promote items that consumers genuinely want. Following that, the design and development process must ensure that these goals and desires are satisfied in every way. In other words, if something isn't produced because a customer wants it (or it supports a consumer need), it won't be built at all, which might avoid technology from guiding strategy when it's not directly useful to the customer experience.

4. CONCLUSIONS

Businesses want to become competitive through differentiation. This occurs when a product has distinguishing features that rivals cannot copy. It is possible to patent a unique product to prevent competitors from copying it for nearly 20 years. This would imply that a business might maintain its competitive advantage over an extended period of time. Customers will hunt for alternatives if a company doesn't live up to their expectations. Customers must be satisfied in order to keep their loyalty and their willingness to purchase in the future. Long-term revenues are significantly impacted by high-quality products. In a crowded market, quality is what sets one company apart from another.

Total quality management, as we've said before, is an organizational strategy built on the premise that performance in obtaining better quality can only be achieved by the consistent involvement of the entire company in processes of continuous improvement. The goal is to improve customer happiness through efficiency and effectiveness. From our perspective, it is one of the key tactics that enables you to sell a perfect good or service right away.

Using technology in implementing quality processes and in improving process controls puts organizations at a great advantage. Having streamlined systems in place gives way for creating products and services that meet market demands and surpass customer expectations.

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