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CRYPTOCURRENCIES, OTHER PAYMENT METHODS, AND NEW TECHNOLOGIES: INTERACTION BASICS

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КРИПТОВАЛЮТИ, ІНШІ ЗАСОБИ ПЛАТЕЖУ ТА НОВІ ТЕХНОЛОГІЇ: КЕЙС З ОСНОВ ВЗАЄМОДІЇ

The research focused on the main directions and outcomes of cryptocurrency and new technology development in the financial sector of Ukraine, which demonstrate a correlation whose nature is determined by their interdependence, manifested through the development of the fintech ecosystem. Specifically, the essence of such dependence lies in the fact that as changes occur in the direction of developing new financial technologies, there are predictable changes in the spectrum of funds available within the financial services ecosystem. It is important to understand that the correlation between variables in such an ecosystem does not imply causality but rather indicates the interdependence of these parameters, which can have different characteristics. Specifically, it can lead to the emergence of complex solutions for clients, either improving or disrupting the traditional financial sector. Thus, the research aims to identify the characteristics of the interaction between cryptocurrencies, other payment methods, and new technologies based on methods of system analysis and synthesis. Based on the research results, it is observed that the directions and outcomes of financial technology development in the financial sector contribute to the evolution of financial services ecosystems, which play a crucial role in the modern economy and provide numerous advantages for users, businesses, and society as a whole. Among such advantages, several can be

highlighted, which are based on the interaction between cryptocurrencies, other payment methods, and new technologies. Namely: iintegration of various products and services in user-friendly formats; formation of a wide range of products and services, allowing users to find the best solutions according to their needs and capabilities; stimulating innovation and the development of new financial products and services, leading to an improvement in the quality and efficiency of financial services and enhancing user experiences. Furthermore, financial services ecosystems contribute to enhancing financial literacy among users through access to information and resources that help them better manage their finances.

У рамках дослідження акцентується увага на основних напрямках та результатах розвитку криптовалюти та нових технологій у фінансовому секторі України, які показують кореляцію, природа якої зумовлена їх взаємопов'язаністю, що проявляється через розвиток фінтех-екосистеми. Зокрема, суть такої залежності полягає в тому, що в міру змін у напрямках розвитку нових фінансових технологій (як конкретних векторів технологічного вдосконалення фінансових послуг та процесів фінтех-стартапів) відбуваються закономірні зміни у спектрі коштів, які доступні в екосистемі фінансових послуг (зокрема, можуть використовуватися для оплати товарів та послуг та інших операцій). Важливо розуміти, що взаємозв'язок між змінними у такій екосистемі не обов'язково вказує на причинно-наслідкові зв'язки, а лише на взаємопов'язаність даних параметрів, яка може мати різний характер (а саме зумовлювати появу комплексних рішень для клієнтів для покращення чи руйнування традиційного фінансового сектору). Таким чином, дослідження спрямоване на ідентифікацію особливостей взаємодії криптовалют, інших засобів платежу та нових технологій грунтуючись на методах системного аналізу та синтезу. Виходячи з результатів дослідження констатовано, що напрями та результати розвитку фінансових технологій у фінансовому секторі забезпечують еволюцію екосистем фінансових послуг, які відіграють важливу роль у сучасній економіці та надають безліч переваг для користувачів, бізнесу та суспільства загалом. Серед таких переваг можна виділити ті, що грунтуються на взаємодії криптовалют, інших платіжних засобів та нових технологій. А саме: об'єднання різних продуктів та послуг у користувальницькому форматі; формування широкого вибору продуктів та послуг, що дозволяє користувачам знаходити найкращі рішення відповідно до їх потреб та можливостей; стимулювання інновацій та розвиток нових фінансових продуктів та послуг, що сприяє підвищенню якості та ефективності фінансових послуг та покращенню досвіду користувачів. Крім того, екосистеми фінансових послуг сприяють покращенню фінансової грамотності користувачів на основі доступу до інформації та ресурсів, які допоможуть їм краще управляти своїми фінансами.

Key words: financial products, financial services, information, blockchain, robotization, payments.
Ключові слова: фінансові продукти; фінансові послуги; інформація; блокчейн; роботизація; платежі.

TARGET SETTING

The study focuses on the main directions and results of cryptocurrency and new technology development in the financial sector of Ukraine, which demonstrate a correlation driven by their interconnectedness manifested through the development of the fintech ecosystem. Specifically, the essence of such interdependence lies in the fact that as the directions of development of new financial technologies change (such as specific vectors of technological advancement in financial services and processes of fintech startups), there are corresponding changes in the spectrum of instruments available within the financial services ecosystem (particularly those that can be used for payment of goods, services, and other transactions). It is important to understand that the interrelation between variables within such an ecosystem does not imply causation but rather highlights the interconnectedness of these parameters, which can have various characteristics. Specifically, this interconnectedness may lead to the emergence of comprehensive solutions for customers aimed at improving or disrupting the traditional financial sector.

ANALYSIS OF RESEARCH AND PUBLICATIONS

The authors refer to classic research on the functioning of the domestic financial services ecosystem conducted by Melnyk V. M., Lomachynska I. A., Borysova L. Ye., Kolesnyk O. O., Shramko O. O. By the findings of these studies, it is most appropriate to adopt the classical understanding of the financial services ecosystem as a set of interrelationships and interactions that occur within the financial sector between financial intermediaries and other economic agents requiring the distribution of monetary or other assets used to meet financial needs and goals [1; 3]. Given the specific interpretation, it is important to note

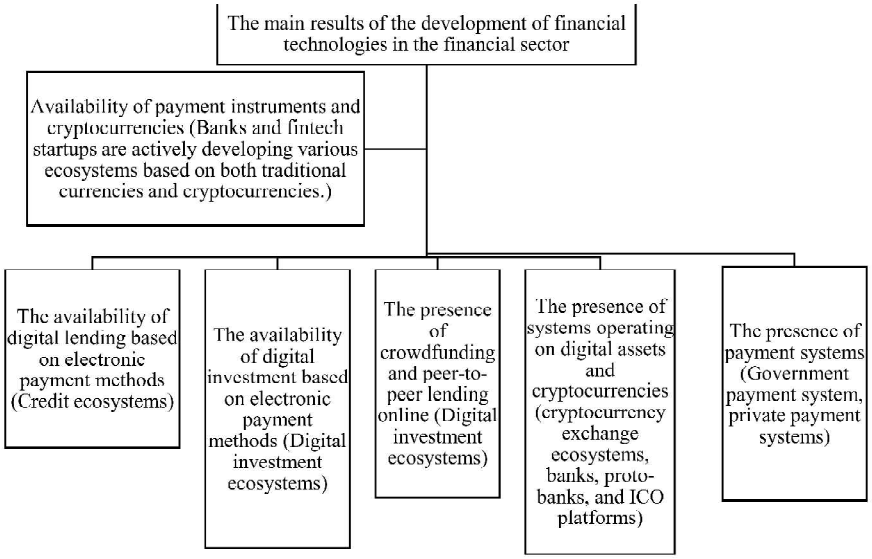

Figure. 1. The variable of the final outcome of the functioning of the financial services ecosystem in Ukraine

Source: formed based on [1; 2; 4; 6].

that the interaction between cryptocurrencies, other payment instruments, and new technologies can be considered the foundation of the ecosystem. It functions as a distinct set of variables representing technological advancements in financial services and processes of fintech startups and banks, as well as the variable of the outcome (which is determined by the development of the financial services ecosystem). The current research focus on this aspect is relevant and yet to be fully explored.

THE WORDING OF THE PURPOSES OF ARTICLE (PROBLEM)

The objective of the article is to identify the characteristics of the interaction between cryptocurrencies, other payment instruments, and new technologies.

THE PAPER'S MAIN BODY WITH FULL REASONING OF ACADEMIC RESULTS

Within the chosen research focus, the article highlights the importance of considering:

— the variable of the outcome of the financial services ecosystem in Ukraine through the lens of its development (Figure 1).

Indeed, examining the variable of the outcome through the lens of the development of the financial services ecosystem requires identifying specific financial products and services as its components. Specifically, the composite elements of the outcome include specific products based on the interaction of new technologies, cryptocurrencies, and payment instruments, such as digital lending, investment platforms, crowdfunding and peer-to-peer lending platforms, digital assets and cryptocurrencies, payment systems, and so on;

— the variable of technological advancements in financial services and processes of fintech startups and banks (Figure 2). Indeed, examining the variable of technological advancements in financial services and processes of fintech startups and banks requires identifying the vectors that shape the characteristics of the interaction between specific financial products and new technologies. These vectors include service and process automation, digitalization of services and processes, roboticization of services and processes, security and transparency of financial transactions, and communicative-informational and operational interaction.

Taking into account the highlighted points, the author has depicted the schematic representation of the interrelation between new technologies, cryptocurrencies, and other payment instruments in the financial sector of Ukraine in Figure 3.

Based on the highlighted schematic representation, it can be concluded that in Ukraine, the main directions of development for new financial technologies in the financial sector are focused on services related not only to traditional payment instruments but also to cryptocurrencies. These directions are determined by the National Bank of Ukraine (NBU), the government itself, and several fintech startups.

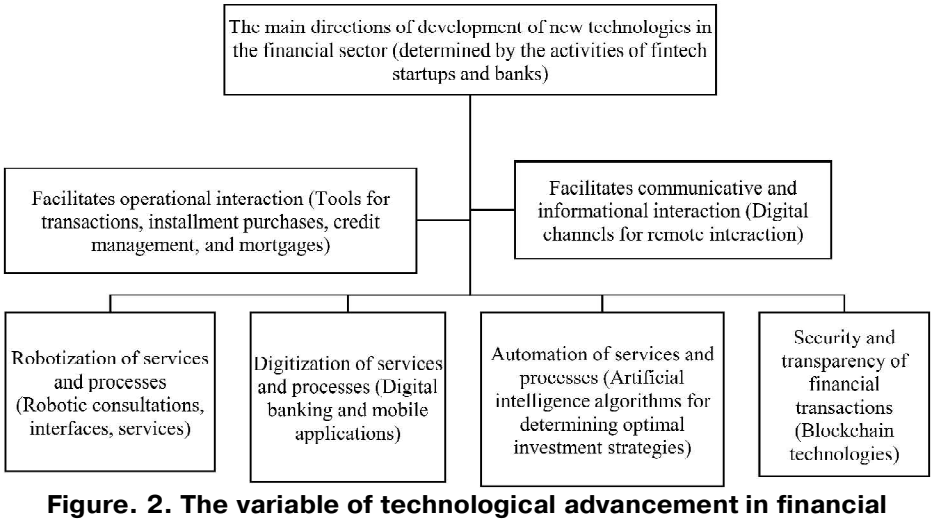

Figure. 2. The variable of technological advancement in financial services and processes of fintech startups and banks

Source: formed based on [1; 3; 6].

Until 2010, the financial sector of Ukraine was relatively underdeveloped, including a lag in the adoption of modern technologies. Despite the reforms conducted in the early 1990s, the infrastructure and technological foundation of the financial sector remained outdated. Banks and other financial institutions in Ukraine relied on outdated accounting and data processing systems, as well as traditional methods of service provision.

In the era of technological progress and Internet development, such backwardness became a significant obstacle to the competitiveness of Ukraine's financial sector. However, by 2010, the financial sector of Ukraine began undergoing significant changes. The number of intermediaries in the financial sector providing financial services reached 182, making it highly competitive. In the battle for customers, PrivatBank emerged as a pioneer in Ukraine, actively implementing new financial technologies. Later, other banks in Ukraine followed the trend of actively developing an innovative infrastructure for payment methods and cryptocurrencies, which involved the development of new interfaces and services, as well as a shift towards remote channels. FinTech startups, which are small companies utilizing new technologies to create innovative financial products and services, along with private banks, played an active role in this process. In 2017, PrivatBank also became the first Ukrainian bank to offer services for the transfer and storage of cryptocurrencies to its clients.

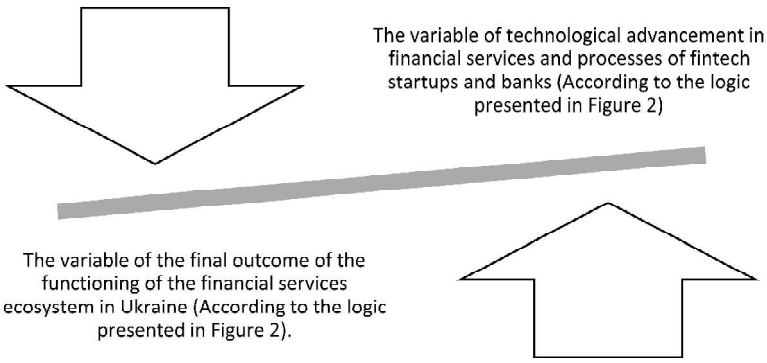

Figure 3. Schematic representation of the interrelation between new technologies, cryptocurrencies, and other payment instruments in the financial sector of Ukraine

Source: formed based on Figure 1-2.

In addition, in 2015, the National Bank of Ukraine (NBU) also embarked on the path of developing financial technologies in the Ukrainian market. This included the initiation of a special working group within the NBU, which focused on researching and implementing innovative financial technologies. The NBU also initiated collaborations with financial startups and innovative companies, providing them with support and consultations on the adoption of new technologies. Furthermore, until 2020, regulatory changes were developed and implemented to promote the development of electronic payment systems, online banking, and digital and mobile payment solutions. Official statistics regarding the number of fintech startups and banks developing innovations and technologies related to the fintech industry to enhance their services and competitiveness in Ukraine are not available. However, some of the most well-known ones include Monobank, PrivatBank, Kredobank, and First Ukrainian International Bank (FUIB). Numerous other fintech startups in Ukraine offer innovative products and services, implementing various types of technologies. Some examples include [7]:

— Technologies improving financial accounting, analysis, and management capabilities.

— Technologies enhancing lending and investment management capabilities in securities and other assets.

— Technologies enhancing transaction security and control for each transaction.

— Technologies improving customer interaction in the financial services industry.

— Technologies improving the operational efficiency of transactions (interpreted as the ability of a transaction system or process to perform tasks with minimal resource costs and time delays).

Thus, the development of fintech startups drives the advancement of financial technologies in Ukraine's financial sector and defines the algorithm based on which cryptocurrencies and other payment methods interact with new technologies. Among the main directions of such interaction, we have identified [2, 3; 4]:

Direction 1: "Digital Banking and Mobile Applications". Ukrainian fintech startups provide their customers with the ability to manage their finances through: mobile applications for account operations and payments; payment applications linked to digital wallets (simplified alternatives to traditional bank accounts); contactless payment technologies (NFC, QR codes); online banking and internet banking; digital financial management tools (budgeting, expense analysis, investment, etc.).

Direction 2: "Robotic Consultations and Interface Services." Ukrainian fintech startups offer their customers the opportunity to receive robotic educational and informational-analytical consultations, personalized financial recommendations, and accounting-analytical services with minimal need for interaction with real consultants.

Direction 3: "Automated Services and Processes." In the financial sector, this direction is associated with the implementation of artificial intelligence algorithms by fintech startups to determine optimal investment strategies in securities and other assets with minimal portfolio management costs and reducing the human factor in investment decision-making.

Direction 4: "Security and Transparency of Financial Transactions." Domestic fintech startups, utilizing blockchain technology, provide their clients with the ability to establish the uniqueness and authenticity of each transaction, as well as ensure its visibility and control at all stages. This technology is used for issuing their own digital currencies and conducting Initial Coin Offerings (ICOs), enabling the attraction of investments from a wide audience.

Direction 5 "Communicative-Informational Interaction." Ukrainian fintech startups create customer digital channels for remote interaction in the field of financial services, including: loyalty program platforms, online banking and mobile applications, platforms for joint investments and e-commerce, online lending platforms, asset management platforms, and others. The main goals of this development direction are to continuously improve the convenience and simplicity of the user interface for communicative-informational interaction, as well as to

Table 1. Characteristics of lending ecosystems based on electronic payment methods being developed in Ukraine

Types of ecosystems	Characteristic of Services:	Domestic practice of presenting services	Advantages of ecosystems
P2P lending	Borrower receives credit directly from multiple private investors, rather than from a bank.	A potential borrower registers on lending platform[1], fills out an application, and waits for investors to express interest in the request. Some platforms may require verification of the borrower's identity and financial standing. [1].	Lower processing costs for potential borrower Fast credit decision making process expansion Access to credit for people who cannot access it through traditional channels
Microcredit lending	Borrower receives a small amount of money for a short term; online lending is available for both businesses and individuals.	A potential borrower registers on lending platform [2], fills out an application, and waits for the system to make an automated decision on loan approval.	
Cryptocurrency-based lending	Borrower receives credit in cryptocurrency from a lender through cryptocurrency platforms.	Currently, there is no specific legislation regulating the provision of loans based on cryptocurrencies.	
Smart contract-based lending	Operates based on smart contracts, which programmatically define the loan terms and repayments.	A potential borrower registers on lending platform [4], and all their loan terms are recorded in a blockchain.	
Open Banking-based lending	Borrower receives credit based on the use of data about their income, expenses, and credit history from banking sources.	Open Banking data is used to determine the borrower's credit rating. Some platforms[3] in Ukraine use Open Banking technology for automated loan decision-making and interest rate calculation.	

Note:
1 Popular P2P-lending platforms in Ukraine: "Kviku (formerly known as Moneyveo), Monobank, Credit7, etc.
2 Popular microcredit platforms in Ukraine: Miloan, Alex Credit, "Credit7, etc.
3 Popular lending platforms based on Open Banking in Ukraine: MoneyHub, Plaid and Zelf
4 Popular Smart Contract Lending Platforms in Ukraine: Kuna Platform
Source: by author based on [3; 5].

enhance the financial literacy of users by providing them with access to information and resources that help them better manage their finances.

Direction 6: "Communicative-Informational Interaction." Ukrainian fintech startups create customer digital channels for remote interaction in the field of financial services, including loyalty program platforms, online banking and mobile applications, platforms for joint investments, and e-commerce, online lending platforms, asset management platforms, and others. The main goals of this development direction are to constantly improve the convenience and simplicity of the user interface for communicative-informational interaction, as well as to enhance the financial literacy of users by providing them with access to information and resources that help them better manage their finances.

Direction 7: "Operational Interaction." Ukrainian fintech startups create tools such as electronic accounts, wallets, terminals, and other devices that enable more efficient transactions, installment purchases, and working with loans and mortgages. "Operational interaction" determines how well a specific ecosystem can process transactions, including executing them in full, without errors and with minimal delay. Operational interaction is a key element for technological advancement in financial services, contributing to the creation of an environment in which cryptocurrencies and other payment methods interact with new technologies.

Each direction of development of financial technologies in the financial sector shapes a variable end result that significantly transforms the ecosystems of financial services. Among these results, we can identify:

1. Availability of payment instruments, including electronic ones (under Law No. 2888), bring changes to the tax legislation as well as a series of other regulatory acts related to the regulation of electronic money. Specifically, the changes legalize the use of electronic money (digital payments and electronic wallets, bank cards). Additionally, the circulation of cryptocurrencies is being legalized in Ukraine (by the Law on Virtual Assets, which has not yet come into force). Currently, electronic payment instruments are being developed based on networks (LiqPay, Portmone, EasyPay) and card-based systems (Privat24, Monobank, etc.). Essentially, this result creates opportunities for Ukrainian banks and fintech startups to actively develop various ecosystems based on traditional currencies and cryptocurrencies, thereby offering a wide range of products and services.

2. Availability of digital lending based on electronic payment instruments. Many financial companies offer online loans based on electronic payment instruments. Thanks to this approach, Ukrainian banks and fintech startups are actively developing credit ecosystems based on electronic payment instruments and offering services such as P2P lending, micro-lending, cryptocurrency-based lending, Open Banking-based lending, and smart contract-based lending (see Table 1). Each of these systems simplifies the loan application process for customers.

In combination, all of the aforementioned credit ecosystems based on electronic payment instruments allow:

Table 2. Characteristics of Crowdfunding and Peer-to-Peer Lending Ecosystems Based on Electronic Payment Instruments Developed in Ukraine

Types of ecosystems	Service characteristic	Domestic practice of providing services	Ecosystem benefit
crowdfunding	Platform for raising funds for projects of various formats. Fundraising, possibly for projects of both legal entities and individuals in exchange for rights to your product or service.	On platform, a project page is created where the project description is presented, and the required fundraising amount is specified.	Fundraising for project implementation without involving major investors and banks. Establishment of transparent and fair conditions for project participants. Attracting attention to the project and expanding the pool of potential clients.
crowdlanding	A platform for investing in loans and providing loans to borrowers through the platform. Loans can be extended to both legal entities and individuals with interest rates.	On the platform, investors can choose projects in which they want to invest and provide loans based on the project's profitability and risks.	It allows investors to earn income in the form of interest from the loans they provide. It helps businesses and startups gain access to loans that they may not obtain from traditional banks. It enables companies to establish transparent and fair conditions for borrowers and investors.
crowdinvesting	A platform that allows investors to allocate their funds to small and medium-sized business projects, startups, and other investment opportunities.	A project page is created on the platform, which includes a description of the project and the required funding amount.	Attracting investments for businesses. Investing in companies and projects. Allowing investors to profit from their investments through dividends, capital gains from the sale of shares, etc. Expanding the pool of investors.

Source: by author based on [2—3; 5—6].

1) reducing the costs of processing applications from potential borrowers;

2) expediting the loan decision-making process;

3) expanding access to credit for individuals who may not qualify for loans through traditional channels, for example, due to insufficient credit history.

However, in order to effectively harness the advantages of the highlighted lending ecosystems, it is important to carefully examine the terms and interest rates before utilizing them to avoid unforeseen expenses and repayment issues.

3. The presence of digital investing based on electronic payment methods. Many financial companies in Ukraine are developing digital investing ecosystems (based on new online platforms) and offering investment services in various financial instruments such as stocks, bonds, ETFs, funds, IPOs, SPOs, and more. For example, platforms like Finline, MOIN, and Concorde Capital provide access to the stock market, bonds, funds, and other financial instruments. Overall, electronic payment-based investing ecosystems enable investors to:

— diversify their portfolios;

— invest in a wide range of financial instruments;

— simplify and enhance the investment process.

4. The presence of online crowdfunding and peer-to-peer lending (based on electronic payment methods).

In Ukraine, ecosystems for crowdfunding and peer-to-peer lending are developing, enabling companies and individuals to access crowdfunding, crowd investing, and crowd lending services (see Table 2).

Overall, online crowdfunding and peer-to-peer lending ecosystems allow:

Businesses and startups to access loans (which they may not obtain from traditional banks) and investments (without entering the stock market), while establishing transparent and fair conditions for borrowers and investors.

Investors to earn profits from their investments in the form of interest, dividends, or capital gains from the sale of shares.

However, it should be noted that crowdfunding and peer-to-peer lending ecosystems in Ukraine have not reached a high level of development yet. As a result, there are certain limitations and drawbacks that may restrict their effectiveness and attractiveness for entrepreneurs and investors. In particular, we have identified the following [3; 4]:

1. Low level of trust in ecosystem operators.

2. Lack of clarity in legislative regulation of crowdfunding, crowd investing, and crowdlending, with undefined legal relationships and status of participants in such financing methods at the legislative level.

3. Low readiness of crowdfunding platforms due to insufficient functionality, performance, reliability, and security for users.

4. Limited circle of investors, related to low levels of financial literacy, lack of access to information and resources necessary for successful investment.

5. Presence of systems operating on digital assets and digital currency. In Ukraine, new ecosystems for digital commerce and investment are emerging (Table 3).

Table 3. Characteristics of ecosystems for digital trading and investing developed in Ukraine

Types of ecosystems	Service characteristic	Domestic practice of providing services	Ecosystem benefit
cryptocurrency exchanges 1	Buying and selling of cryptocurrencies.	Enable buying or selling goods for cryptocurrencies or the cryptocurrencies themselves. Allow the use of various tools for analysis and trading, which can increase investment profitability.	Enable users to maintain anonymity and protect their personal data. Provide a convenient way to buy, sell, and exchange digital assets.
cryptocurrency banks (also known as decentralized financial platforms) or protobank 2	Buying and selling of cryptocurrencies, storage and exchange of cryptocurrencies, payments and settlements based on crypto-processing.	Provide services for storing cryptocurrencies, ensuring a high level of security for funds and convenience of use. Offer services for exchanging cryptocurrencies into fiat currencies without the need for third-party platforms.	«…»/ Offer a wide selection of digital assets. Charge low fees for financial transactions.
ICO Platform 3	Issuance of cryptocurrencies by companies and startups in exchange for investments.	Provide information about Initial Coin Offering (ICO) projects, including details about the price, sales volume, and campaign end date.	Provide a convenient way to attract investments in exchange for digital currencies.

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1 in Ukraine there are several platforms for cryptocurrency trading, such as Binance, Bybit. Coinbase Exchange, Kraken, WhiteBIT.

2 Ukraine does not yet have cryptocurrency banks, but some banks are beginning to provide cryptocurrency exchange services for fiat money (for example, MinexBank).

3 in Ukraine there are several ICO-platforms Forklog, Kuna ICO, ICOBox.

Source: by author based on [4; 5; 6].

Specifically:

— Cryptocurrency exchanges, cryptocurrency banks, and proto-banks (which provide services similar to cryptocurrency banks) are present in Ukraine. These ecosystems are currently operating outside the legal framework of Ukraine but allow companies and individuals to access payment and settlement services (including cross-border transactions) based on crypto-processing, buying and selling cryptocurrencies, storing and exchanging cryptocurrencies, and investing in digital financial assets (as defined by the Law on Virtual Assets);

— ICO platforms (identified in academic literature as cryptocurrency crowdfunding platforms)).

Cryptocurrency exchange ecosystems in Ukraine are already operating, including several platforms for trading cryptocurrencies such as Binance, Bybit, Coinbase Exchange, Kraken, and WhiteBIT. There are currently no domestic cryptocurrency banks, but proto-banks are emerging that have started to provide similar services, including cryptocurrency-to-fiat currency exchange. For example, MinexBank offers cryptocurrency exchange services. Additionally, several ICO platforms are operating in Ukraine, such as Forklog, Kuna ICO, and ICOBox.

The highlighted ecosystems of cryptocurrency exchanges and crypto banks and proto-banks allow users to maintain anonymity and protect their data. Additionally, they provide a convenient way to buy, sell, and exchange digital assets through website interfaces and mobile applications. Cryptocurrency banks and proto-banks also offer a wide selection of digital assets, allowing investors to diversify their portfolios and reduce the risk of losses. They also have low transaction fees and flexibility, enabling users from different countries around the world to utilize them without any limitations.

ICO platform ecosystems provide a convenient way to attract investments in exchange for digital currencies. However, it is worth noting that the aforementioned ecosystems for digital trading and investing operate under high-risk conditions associated with crypto-currency market volatility, potential cyber-attacks, and fraud.

6. In Ukraine, several ecosystems provide services for processing and transferring various types of payments between market participants (between individuals, legal entities, shops and customers). Unlike cryptocurrency exchange ecosystems, banks, and ICO platforms, these ecosystems work with traditional currencies such as UAH, USD, EUR, and others. Among them are private payment systems: iPay.ua, PSP Platon, NovaPay, EasyPay, Portmone, and City24. In addition to private payment systems, Ukraine also has a state payment system called "PROSTIR" (the prototype of which, known as NSMEP, was launched in February 2003) to facilitate payments for goods and services, cash withdrawals, and other transactions using payment smart cards based on the technology developed by the National Bank of Ukraine.

According to the specificity of result formation, the key element of their differentiation is the development of modern payment instruments.

CONCLUSIONS FROM THIS STUDY AND PROSPECTS FOR FURTHER EXPLORATION IN THIS AREA

Based on the research findings, it is evident that the directions and outcomes of financial technology

development in the financial sector contribute to the evolution of financial service ecosystems, which play a crucial role in the modern economy and offer numerous benefits to users, businesses, and society as a whole. Among these benefits, particular emphasis is placed on those derived from the interaction of cryptocurrencies, other payment instruments, and new technologies. Specifically, these benefits include:

1. Integration of multiple diverse products and services in a convenient and user-friendly format.

2. Provision of a wide range of products and services, enabling users to find the best solutions according to their needs and capabilities.

3. Stimulating innovation and the development of new financial products and services, leading to improved quality, efficiency, and enhanced user experience.

4. Enhancing financial literacy among users through access to information and resources that assist them in better managing their finances.

Based on the obtained results, several promising directions for further research in the field of financial technologies can be identified:

1. Research can be focused on the development of new interfaces, interaction methods, and technologies that will allow users to manage their finances more easily and efficiently.

2. Research can be directed towards the development of algorithms and data analysis methods that will enable the determination of individual user preferences and provide them with the best solutions.

3. Research in this field can be aimed at studying new technologies as well as developing financial models that contribute to improving the quality and efficiency of the provided services.

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