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The Reality of Blockchain Technology in the Financial Sector: Experiences from Some European Countries

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Abstract :

This study aims to explore the utilization of Blockchain technology within the European region amidst the rapidly evolving global dynamics. It assesses the benefits that Switzerland, the Netherlands, Germany, and Belgium derive from the multifaceted advantages of blockchain technology and its applications.

The findings indicate that these countries provide conducive environments for the development of blockchain and cryptocurrency technologies. Moreover, blockchain technology's application extends beyond digital currencies, encompassing critical sectors such as healthcare, government services, and real estate. Zurich, Geneva, and Zug emerge as prominent hubs for blockchain-related enterprises, fostering innovation and knowledge exchange among startups in this domain

Keywords: Blockchain Technology, Financial Sector, FinTech.

1. INTRODUCTION:

Digital transformation is increasingly becoming central to the strategic vision of nations, serving as a pivotal driver for economic diversification and the enhancement of economic resilience and competitiveness. This transformation is steering economies from industrial to technology-driven paradigms, predominantly powered by digital innovations.

At the forefront of these digitalization waves is blockchain technology, distinguished by its capacity to redefine trust, transparency, and inclusivity on a global scale. Numerous initiatives are underway to harness blockchain technology, especially within financial services, to refine offerings and captivate a broader customer base.

1.1. Statement of the Problem:

This paper seeks to illuminate the reality of blockchain technology in the financial sector across Europe, guided by the inquiry:

How Has blockchain technology been utilized in the financial sector of the European region amidst rapid global changes?

1.2. Research Questions:

To answer this query, it was divided into the following research questions:

- What is the blockchain network and is it safe?
- What is blockchain used for?
- Does the rupee region have a role in promoting innovation in the financial sector**?**

1.3. Hypothesis/ hypotheses:

To navigate this query, the study posits the following:

- The blockchain network is secure and stable, with data loss being nearly impossible even if a block in the chain is compromised.
- Cryptocurrency trading, especially with Bitcoin and Ethereum, is the primary use of blockchain technology.
- The European Economic Area plays a significant role in financial sector innovation, impacting the financial sector.

1.3. Significance of the Study :

2. The significance of this study is underscored by the increasing prominence of blockchain technology, which is capturing the attention of financial institutions worldwide. These entities are keen to harness this technology to enhance their service offerings and attract a larger clientele.

1.5. Objectives of the Study:

- To clarify the features of blockchain technology: its definition, characteristics, functioning mechanism, etc.
- To present some European experiences in the application and use of blockchain technology and their benefits.
- To derive important conclusions and recommendations regarding the successful application of blockchain technology in the financial sector.

1.6. methodology of the Study:

This study relied on the descriptive and analytical approach, as it describes and analyzes the reality of blockchain technology in some European countries such as Switzerland, Germany, etc.

1.7. previous researches :(literature review)

Among the most important previous studies on the subject are the following:

- Safar, M., & Chercham, M. (2022). Reality and challenges of blockchain technology in the financial and banking sector (Experience of some Arab countries). Journal of Economics and Sustainable Development, 05(02).
- Kemiti, A. (2023). Reality and prospects of using blockchain technology in the economies of the Arab region. Journal of Contemporary Economic Research, 06(01).

The difference between the previous two studies and this study is that the previous two studies dealt with the reality of blockchain technology in Arab countries, while this study addressed its reality in some European countries.

1.8. Organization of the Study :

The study was divided into two main parts:

- First: Conceptual Framework of Blockchain Technology
- Second: Experiences of Some European Countries in Applying Blockchain Technology in the Financial Sector

2. Conceptual Framework of Blockchain Technology:

2.1 Definition of Modern Financial Technologies::

The term 'FINTECH' encapsulates the technological innovations employed to deliver and access financial services, aiming to optimize benefits for both providers and users. Financial technologies encompass a suite of novel and innovative financial applications and products facilitated through technological advancements.

The Financial Stability Board characterizes financial technologies as technology-driven innovations within financial services that can lead to new business models, applications, processes, or products, markedly influencing the provision of financial services. These innovations are pivotal in enhancing the delivery and quality of services due to their efficiency, user-friendliness, and cost-effectiveness, thus enabling a wider demographic to access them (kemiti, 2023, p. 13).

2.2 Blockchain Technology:

Blockchain technology emerged in 2008, introduced by Satoshi Nakamoto of Japan in conjunction with the digital currency Bitcoin. Nakamoto dispatched an evaluative study via email to a group renowned for their interest in cryptographic transactions, delineating the core principles of Bitcoin and its underlying blockchain technology. In 2009, Nakamoto implemented the first blockchain, mining the inaugural Bitcoin and launching it into the market.

This cryptocurrency swiftly gained fame and acceptance, becoming a recognized currency in numerous locales. Nakamoto mined the first 50 units, facilitating the initial transaction between Nakamoto and Hal Finney. By 2011, Bitcoin's value reached parity with the dollar, spurring trading platforms to offer services for the buying, selling, and exchanging of cryptocurrencies with fiat currencies.

Although blockchain technology debuted alongside Bitcoin, it is essential to distinguish between the two; blockchain serves as the ledger for Bitcoin transactions but also possesses broader applications. Blockchain technology enables the crafting of sophisticated smart contracts, such as self-executing invoices upon shipment delivery or the automatic transfer of certificates to their rightful owners.

The second generation of blockchain technology promises to store individual identities (offering a persistent and personal digital identity) and address social inequality through mechanisms for wealth redistribution (Safar & Cherchem, 2022, p. 04).

2.2.1. Definition of Blockchain:

Blockchain technology enables the sharing of data without a single entity claiming ownership. Every participant in a blockchain possesses an identical copy of the data, with the ability to contribute additional information. Its decentralized nature enhances the security of the database. Furthermore, the data within a blockchain is encrypted, ensuring compliance with financial sector regulations. Don & Alex Tapscott, in their book "Blockchain Revolution" (2016), describe blockchain as "an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually anything of value" (Trusted Magazine, 2021).

The term "blockchain" is derived from its structure, where data is organized in blocks, securely linked together in a chain. Modifying data in a particular block necessitates alterations in all subsequent blocks, thereby maintaining the integrity of the chain.

Despite its openness to numerous users, reversing or altering the recorded data within a blockchain is challenging. A potential hacker would need to simultaneously access every computer holding a copy of the blockchain database to effect any change. Additionally, the software safeguards against unintended data alterations by regular users (Shashank, 2023).

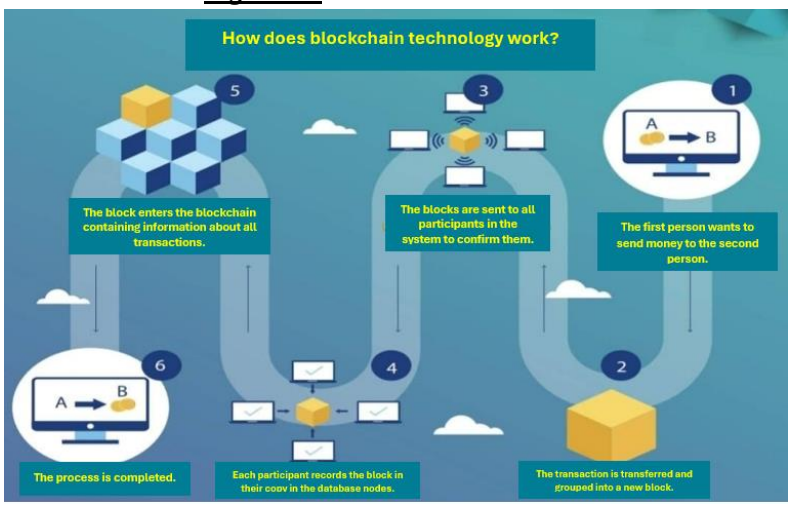
At its essence, blockchain technology is a distributed database or a public ledger, documenting all digital transactions or events that have been executed and shared among the participants. Each transaction in the ledger undergoes verification by the majority of the system's participants. After recording a financial transaction, it becomes immutable, with blockchain maintaining a precise, verifiable record of every transaction ever conducted. While Bitcoin exemplifies a decentralized digital currency, blockchain technology has found extensive applications across both financial and non-financial sectors.

Blockchain represents a "decentralized" technology, where no single entity has the authority to modify or regulate its data, in contrast to central banking systems that maintain exclusive control over transaction records in their databases and impose service fees. Decentralized blockchain systems offer transparency, security, and data integrity, enabling feeless transfer services. They ensure high stability, transparency, and security, as the data is distributed across numerous computers worldwide, thus providing robust security and privacy (Ibrahim, pp. 12-13).

Blockchain stands as a revolutionary technology that is beginning to redefine the future of the internet, simplifying and securing transaction processes (Digital Dubai, 2023).

The following figure provides a simplified explanation of how blockchain works:

Figure 01: How Blockchain Works



Source: (Dunya, 2022, p. 5)

Blockchain technology operates through a sophisticated sequence of interconnected processes that ensure secure and transparent transactions within a distributed network. The workflow commences when an initiating party (Party A) expresses the intention to conduct a monetary transaction with a recipient (Party B). This transaction request catalyzes a complex chain of events within the blockchain infrastructure. Upon initiation, the transaction data undergoes encapsulation within a new block, which serves as a digital container for transaction information. This block is systematically integrated into the existing blockchain architecture, incorporating cryptographic elements and temporal metadata. Subsequently, the

newly generated block is disseminated across the distributed network to all participating nodes, each of which maintains a complete copy of the blockchain ledger. This distribution mechanism implements a consensus protocol, whereby network participants must validate and confirm the legitimacy of the transaction through sophisticated algorithmic verification processes. Once consensus is achieved, each participating node records the validated block within their respective database, effectively creating multiple synchronized copies of the same transaction record. This redundancy and distributed nature of data storage significantly enhances the system's security and resistance to unauthorized modifications. The process reaches its culmination when the block is permanently integrated into the blockchain, creating an immutable record of the transaction. This comprehensive procedure exemplifies the fundamental principles of blockchain technology: decentralization, transparency, immutability, and consensus-based validation. The entire process operates within a peer-to-peer network architecture, eliminating the need for intermediary authorities and establishing a trustless system for conducting transactions. This technological framework has profound implications for various sectors beyond cryptocurrency, including supply chain management, healthcare records, and smart contracts.

2.2.2 Features of Blockchain Technology:

- **Security:** Blockchain employs high levels of security and encryption on its database, making breaches nearly impossible due to its decentralized nature.
- **Time-Saving:** With blockchain technology, sending and receiving money and documents can be done within minutes, unlike the current banking sector system.
- **Decentralization:** The recorded data is not stored in one location but on every device participating in the blockchain network, preventing any network breaches.
- **Ownership and Source Rights Protection:** Blockchain technology facilitates tracking the origin of any item since it records every operation on the network from the start, helping to preserve intellectual property and prevent theft.
- **Reduced Operating Expenses:** Blockchain technology is the least expensive model compared to other prevalent technologies, especially within the banking sector. Statistics indicate that adopting it could save over $100-150 billion by 2025.
- **No Intermediaries in Transactions:** There are no intermediaries in a transaction on the blockchain network, which is a fundamental principle of its operation.
- **Transparency:** Any operation on the network can be tracked, eliminating the chances of fraudulent activities.
- **Prevention of Data Leaks and Hacking:** It aids in detecting any discrepancies in transactions and verifying their accuracy (RMG, 2023). Furthermore, blockchain technology is characterized by the following elements:
    - As an open database or ledger, it allows all its users, whether public or private, to record and manage their data and information.
    - As a distributed ledger or decentralized network (DLT 'Distributed Ledger Technology'), it is spread across all user devices connected to the network, known as nodes, with transactions automatically executed via blockchain technology.
    - The mining process in blockchain technology is a mechanism for verifying the validity of the unique code (hash) for the operation (Ousat, 2022, p. 6).

2.2.3 Types of Blockchain Technology: Blockchain technology includes the following types (Report, 2021, p. 7):

- **Public Blockchain:** A technology based on a network accessible to everyone, operating on a peer-to-peer system, allowing direct interactions between users without a neutral intermediary securing the transactions.
- **Private Blockchain:** Relies on a closed and restricted network, controlled by an intermediary who can change the network's usage rules at any time, typically used by banking institutions.

2.2.4 Blockchain Operation Mechanism:

Blockchain technology operates as follows (Kemiti, 2023, p. 15):

- **Stage 01:** When someone initiates a transaction with another party, the required transaction is recorded in a distributed ledger, including information about each completed transaction, shared and accessible among all nodes.
- **Stage 02:** After recording the transaction in the ledger, it is broadcast to the P2P network consisting of computers (nodes). This network of nodes provides access to synchronized copies of the information, constantly replicated, making the network highly secure and resistant to interruptions and attacks. Although all entries can be viewed by

anyone in the blockchain, they are encrypted. Simultaneously, the network of nodes also verifies the transaction and the user's status using advanced algorithms.

- **Stage 03:** Once the transaction is verified, it is combined with other transactions to create a new data set in the ledger. This continuously growing list of blocks (forming a chain) contains each block with a timestamp and a link to the previous block (the data within the block is encrypted and cannot be altered). A new block is permanently added to the existing blockchain, and the transaction between the parties is completed quickly and securely.

3. Application of blockchain technology in the financial sector in European countries:

3.1 The Role of the European Economic Area (EEA) in Innovating the Financial Sector:

The European Economic Area (EEA) plays a vital role in innovating the financial sector, as evidenced by the following points (Faster Capital, 2023):

3.1.1 Enhancing the Single Market for Financial Services:

The primary objective of the European Economic Area is to enhance the unified market for financial services. This means that all financial service providers, regardless of their location, must have equal opportunities to access the European Economic Area market. The European Economic Area achieves this goal by adopting common rules and systems that apply to all member states in the European Economic Area. These common rules and regulations ensure that financial service providers can operate in the European Economic Area market without facing any discriminatory barriers. For example, the Payment Services Directive (PSD2) within the European Economic Area ensures that all payment service providers have access to the European Economic Area market, regardless of their location.

3.1.2 Ensuring the Integration of Financial Systems:

The European Economic Area also plays a crucial role in ensuring the integration of financial systems. Financial systems integration means that financial service providers can operate smoothly across borders. The European Economic Area achieves this goal by adopting common standards and protocols that apply to all member states in the European Economic Area. For instance, the Single Euro Payments Area (SEPA) within the European Economic Area enables all euro-denominated payments to be made using a single set of standards and protocols across the European Economic Area.

3.1.3 Supporting the Development of New Financial Technologies:

The European Economic Area also supports the development of new financial technologies. It recognizes that innovation is essential for the growth and sustainability of the financial sector. Therefore, the European Economic Area supports the development of new financial technologies by providing funding, regulatory support, and expertise. For example, the Horizon 2020 program within the European Economic Area provides funding for research and development in the financial sector.

3.1.4 The Impact of the EEA's Role in Financial Sector Innovation:

The European Economic Area's role in financial sector innovation has had a significant impact on the financial sector. The initiatives of the European Economic Area have led to increased competition, improved consumer protection, and reduced costs for financial service providers. For example, the adoption of common rules and regulations has increased competition in the European Economic Area market, leading to cost reductions for consumers. Financial systems integration has also improved consumer protection, as financial service providers can operate smoothly across borders, reducing the risks of fraud and other financial crimes.

3.1.5 Comparing Options: The EEA vs. Other Regional Organizations

While the EEA plays an important role in financial sector innovation, other regional organizations also promote innovation in the financial sector. For example, the Association of Southeast Asian Nations (ASEAN) encourages financial sector innovation in Southeast Asia. However, the EEA has many advantages over other regional organizations. First, the EEA covers a larger geographical area than other regional organizations, meaning it has a more significant impact on the financial sector. Second, the EEA has a more comprehensive regulatory framework than other regional organizations, ensuring that financial service providers can operate smoothly across the EEA market.

The EEA's role in financial sector innovation is crucial for the growth and sustainability of the sector. The EEA's initiatives have led to increased competition, improved consumer protection, and reduced costs for financial service providers. The primary goal of the EEA is to enhance a single market for financial services, ensure the integration of financial systems, and support the development of new financial technologies. While other regional organizations also promote innovation in the financial sector, the EEA offers many advantages compared to these organizations.

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3.2 Experiences of some European countries with blockchain technology:

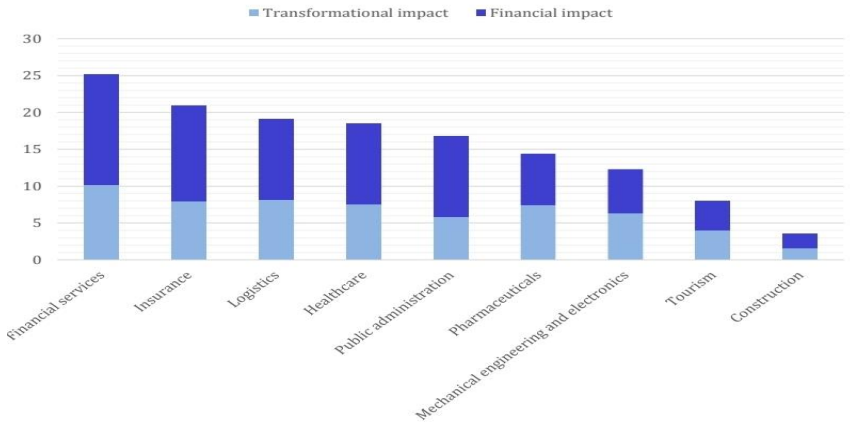
3.2.1 The Swiss Experience with Blockchain Technology:

The emergence of the first cryptocurrency companies in Switzerland dates back to around 2013, yet the industry truly thrived following Bitcoin's remarkable surge in value in 2017 (Matthew, 2021). Switzerland, with its conducive environment, has positioned itself as a prominent player in the global Blockchain industry, benefiting from:

- ✓ Advanced, high-speed network infrastructure.
- ✓ Ranked fifth in the 2018 Global Digital Competitiveness Index by IMD.
- ✓ Highly advanced data security and protection.
- ✓ High level of knowledge in blockchain technology.
- ✓ Long-standing reputation as one of the most innovative countries in the world, which commits it towards blockchain technology.

The potential sectors for blockchain applications in Switzerland are nearly limitless. Deloitte Switzerland analyzed the short-term possibilities of blockchain for the Swiss market. The analytical matrix developed by Deloitte Switzerland gauges the impact of blockchain across various sectors in Switzerland. Leading sectors include financial services, logistics, insurance, and healthcare, indicating that blockchain technology is likely to transform these industries. This is illustrated in the following figure:

Figure 02: The Transformative Impact of Blockchain Technology Across Different Sectors in Switzerland



Source: (Manon, 2018, p. 20)

The figure above depicts the transformative impact, which is the expected amount of change that blockchain technology can bring to this sector, and the financial impact, which is the expected cost savings.

It should be noted that the Swiss financial sector is characterized by the followingFinancial Services:

- The financial sector is highly important in Switzerland, known for its excellent reputation. Zurich is also referred to as the "financial center of the world."
- Switzerland is a leading hub for financial technology (fintech): The most exciting cities for fintech in Switzerland are Zurich, Geneva, and Zug.
- Fintech companies are growing and maturing, as evidenced by factsheets about Swiss companies operating in fintech.
- Zurich ranked second and Geneva third in the global IFZ rankings for fintech in 2018, making them the second and third most powerful cities globally in terms of fintech capabilities. Zug, known as "Crypto Valley," is a city where payments with cryptocurrencies like Bitcoin are possible. Many important fintech companies and developers are based in Zug.
- Swiss banks participate in blockchain technology. Swissquote and Falcon offer investment in Bitcoin for clients. Swiss banks collaborate with fintech companies instead of competing with them, similar to banks in Liechtenstein. Some regional and online banks like Swissquote provide ICO offerings for companies identified for growth in the coming years, each case being assessed individually.

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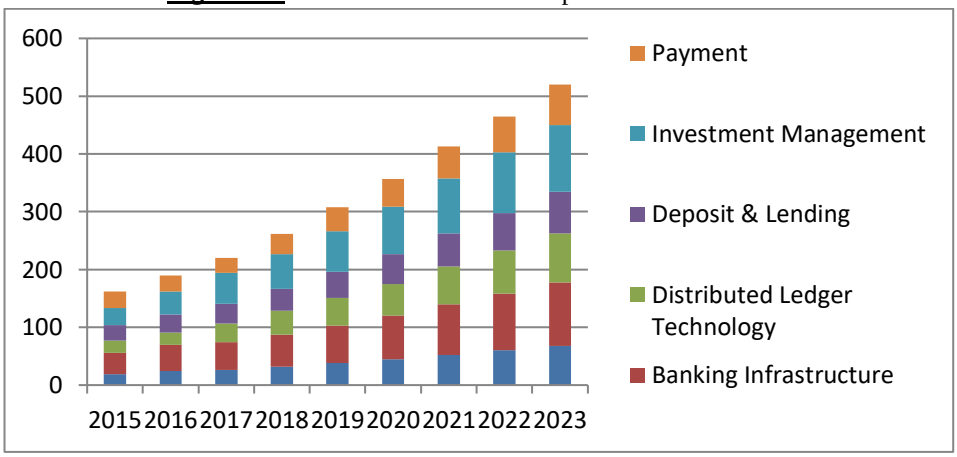
Figure 03: Number of FinTech Companies in Switzerland



Source: (Swiss FinTech Innovation Association (SFTI) , 2024)

The Swiss FinTech ecosystem demonstrated remarkable growth and transformation from 2015 to 2023, with the number of companies expanding from 162 in 2015 to approximately 550 companies by 2023, representing a 240% increase over this eight-year period.

Investment Management maintained its position as the leading segment, growing from 29 companies in 2015 to approximately 120 companies in 2023, capturing roughly 22% of the market share. Banking Infrastructure exhibited similar robust development, expanding from 37 to around 115 companies, representing approximately 21% of the market.

Distributed Ledger Technology (DLT) demonstrated particularly strong growth, increasing from 21 companies in 2015 to approximately 90 companies in 2023, reflecting Switzerland's emergence as a significant blockchain and cryptocurrency hub. The Deposit & Lending sector showed steady progression, reaching an estimated 75 companies, while Analytics and Payment solutions both displayed consistent growth, expanding to approximately 70 and 75 companies respectively.

This development trajectory highlights Switzerland's successful establishment as a leading FinTech hub, supported by its favorable regulatory environment, robust financial infrastructure, and supportive innovation ecosystem. The balanced distribution across segments indicates a mature and diverse FinTech landscape, with each sector making substantial contributions to Switzerland's digital financial ecosystem.

This comprehensive growth across all segments through 2023 reinforces Switzerland's commitment to fostering financial innovation while maintaining stability and regulatory compliance, solidifying its position as one of Europe's premier FinTech destinations.

3.2.2The Dutch Experience with Blockchain Technology:

The Netherlands boasts a robust digital infrastructure, ranking ninth in IMD's 2018 Global Digital Competitiveness Index. This ranking reflects the country's adoption and exploration of digital technologies in government and business sectors. A strong digital infrastructure is essential for companies competing in the digital society.

With an open economy, the Netherlands is keen on developing new technologies to accelerate cash flows. New technologies and innovations have always played a significant role in the country. The role of information and communication technology in financial services continues to grow due to the massive digitization of this sector. Blockchain is a technology that can be utilized for new information and communication technology services.

Amsterdam is a leading city in financial technology, combining a continuously growing tech sector with startup capabilities and a large financial sector, making it an ideal blend for FinTech. This positions it as the fifth strongest city globally in financial technology, entrepreneurship, and innovation. Over 350 companies actively operate in the FinTech sector in the Dutch capital. Four reasons make Amsterdam an attractive environment for FinTech companies:

- ✓ Strong entrepreneurial environment.
- ✓ Excellent digital infrastructure.
- ✓ Reliable and cooperative regulatory bodies.
- ✓ Access to highly skilled talent (Manon, 2018, pp. 8-11).

Blockchain technology is being integrated into various projects by Dutch banks and financial institutions, forming part of broader digital innovation agendas in innovation labs, experimenting across different areas using various

technologies. Alongside existing digital identity authentication platforms like iDIN, many banks are conducting blockchain-based trials for this purpose.

The aim is to leverage blockchain's encryption, storage, and decentralized security, integrating it with existing digital identification applications like iDIN and verification systems. Despite ongoing efforts, the main commercial rationale behind blockchain experiments with digital identities is still to evaluate the feasibility of replacing the current digital identity infrastructure with a blockchain-based one, adapting existing verification and authentication programs to unlock business potential and reduce costs.

Dutch banks are responding to markets shaped by policies and regulations but are also pursuing a path to increase rent-based revenue by establishing a broad presence in the digital economic and governmental landscape (Inês, 2021, p. 07).

3.2.3The German Experience with Blockchain Technology:

Germany, being the largest national economy in the European Union and the fourth-largest globally after the USA, China, and Japan, maintains strong ties with the global economy. The innovative prowess of German companies is a driving force behind economic progress. To bolster and advance this strength, Germany allocates over three percent of its GDP towards research and development (Innovative Economy, 2023).

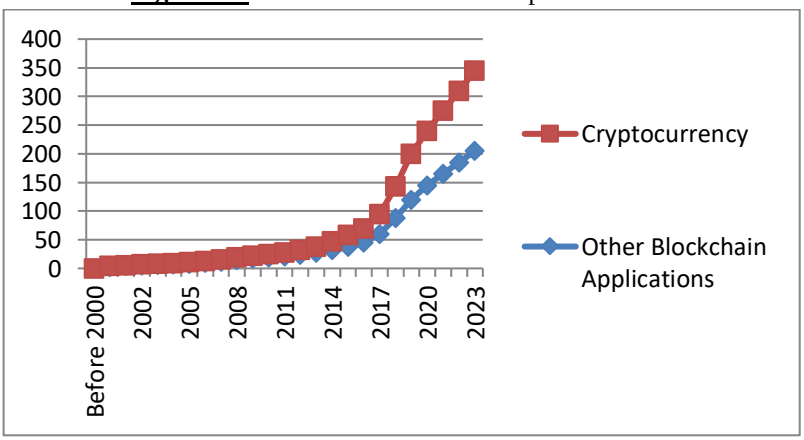
A total of 433 FinTech companies are identified in Germany, categorized into sectors and sub-sectors within the FinTech market. The majority are active in the payments sector, followed by 65 companies in the donation and reward-based crowdfunding sectors. The third-ranking sector, excluding insurance, comprises 59 companies with diverse business models.

These models include analytics tools for legal compliance in crowdfunding portals, online platforms promoting investor education, and gateways for evaluating and rating financial institutions. Additionally, the crowdfunding investment sub-sector is represented by 58 companies, while 37 other FinTech companies operate in the insurance sub-sector.

Public financial management and related sub-sectors such as technology, information technology, and infrastructure collectively host 24 FinTech companies. This group includes firms offering white-label solutions for other FinTech entities, with an additional 23 companies active in the FinTech domain (Gregor Dorfleitner & Lars, 2016, p. 14).

The following figure illustrates German blockchain companies:

Figure 04: German Blockchain Companies



Source: (Reports German Blockchain Association, 2024)

Based on the temporal evolution depicted in the graph of blockchain companies in Germany from 2000 to 2023, a comprehensive analysis reveals significant market dynamics and sectoral convergence patterns:

Market Structure Analysis: The ecosystem demonstrates a clear bifurcation between cryptocurrency-focused enterprises and broader blockchain applications, with the latter showing more robust growth trajectories. By 2023, blockchain applications reached approximately 210 companies compared to 140 cryptocurrency enterprises, indicating a market preference for diverse blockchain implementations beyond digital currencies.

Sectoral Integration and Market Concentration: A notable feature of the market structure is the high degree of vertical integration, with about 40% of companies operating in the cryptocurrency segment (equivalent to 100 firms by latest

count). The data indicates significant market overlap, with 37% of firms simultaneously operating in both cryptocurrency and traditional financial services sectors, demonstrating strong market convergence.

Cross-sectoral Synergies: The ecosystem exhibits strong technological-financial synergies, with 64% of companies operating in the software development sector, while 52% maintain operations in financial services. This cross-sectoral integration suggests significant economies of scope, particularly in technological infrastructure development and financial service delivery.

Market Diversification: The payment systems segment captures 38% of market participation, while information technology services account for 36%, indicating a balanced market distribution across complementary sectors. This diversification reflects market maturity and robust competitive dynamics within the blockchain ecosystem.

Technological Diffusion and Market Penetration: The exponential growth post-2016 indicates accelerated market penetration and technology adoption, with compound annual growth rates (CAGR) showing marked acceleration through 2023. This trend suggests increasing market efficiency and reduced barriers to entry, particularly in blockchain application development.

Industry Concentration Ratios: The data reveals high industry concentration in the software and financial services sectors, with concentration ratios (CR4) suggesting oligopolistic market structures in these segments. However, the presence of firms in peripheral sectors indicates potential market contestability and dynamic efficiency.

This analysis demonstrates the blockchain ecosystem's evolution from a niche technological innovation to a mature market with significant cross-sectoral integration and diverse application domains, characterized by both vertical and horizontal market expansion patterns through 2023.

3.2.4 The Belgian Experience with Blockchain Technology:

Belgian banks launched the "KUBE" platform, allowing financial institutions to share corporate data as part of the "Know Your Customer" (KYC) process. The main objective of the "KUBE" platform, launched by four Belgian banks: Belfius, BNP Paribas Fortis, ING Belgium, and KBC, is to facilitate and speed up the service provision to companies, intensifying the fight against fraud and money laundering. In fact, to prevent money laundering and fraud, banks must regularly verify the identity of board members and major shareholders when opening corporate accounts.

This platform enables them to share this information with each other. It is worth mentioning that the verification of professional customers is mandated by the European directive against money laundering (Anti-Money Laundering or AML). For banks and their clients, it's a time-consuming process conducted individually by each bank and must be repeated frequently.

To simplify this process for all parties involved, the four Belgian banks and the Isabel Group created a platform that allows sharing company identification data, explains a joint press release. This solution also aims to simplify the process for the client, who from now on will only need to enter their data once on the platform. This data will then be verified and validated by the bank and securely shared between the affiliated organizations.

When a company opens an account with another bank, the KYC process is expedited because the required data is already available. As a result, the company will be able to open accounts without any paperwork or delays. Furthermore, changes to company data will be shared, ensuring that the affiliated banks have the most up-to-date information available at all times, says the same source (Trusted Magazine, 2021).

Belgium also proposes the relaunch of the European Blockchain Services Infrastructure (EBSI) project, initiated by the European Commission in 2018, in collaboration with the European Blockchain Partnership, comprising 27 EU member states, Norway, and Liechtenstein. The partnership selected initial use cases for the infrastructure, including mutual recognition of diplomas, document traceability, and funding for small and medium-sized enterprises.

EBSI will be renamed to Europeum and organized into the European Digital Infrastructure Consortium (EDIC), a legal framework established in December 2022 to enable member states to implement multi-country projects. This is based on the model of the European Research Infrastructure Consortium, where member states pool resources to build and operate large, costly scientific facilities.

EDIC centers, contributing to the EU's 2030 Digital Decade goals, were established by the Commission in response to requests from at least three member states. Applicants are given a leading role in project management, which may rely on new or existing infrastructure.

Europeum will be used in public administration, for instance, enabling the recognition of driver's licenses and other documents across the bloc, and facilitating processes like VAT declarations. It could also support applications like the digital euro or digital twins of cities to help identify issues like flood risks (Shashank, 2023).

4. CONCLUSION: This study's conclusion underscores the widespread acceptance and adoption of blockchain technology, driven by its key attributes of decentralization, rapid execution, transparency, trust assurance, and cost-effectiveness. These qualities have positioned blockchain as a focal point of interest for institutions and governments across diverse sectors. The key findings of the study are as follows:

- Blockchain technology demonstrates applicability across numerous sectors, including finance and banking, trade finance, services, and government operations.
- European countries such as Switzerland, the Netherlands, Germany, and Belgium have emerged as fertile grounds for the development of digital currency and blockchain technologies.
- Switzerland leads among European nations as a crypto-friendly environment and stands out as the most attractive location in Europe for blockchain startups.
- Switzerland and the Netherlands enjoy stellar reputations in financial services, benefiting from open economies and advancements in technology that enhance money flow efficiency.
- Zurich, Geneva, and Zug are identified as highly attractive regions for blockchain-related companies, with Zug earning the moniker "Crypto Valley" and serving as a particularly appealing area for blockchain ventures.
- The utility of blockchain technology extends beyond digital currencies, encompassing critical sectors like healthcare, government services, and real estate.

The study proposes several recommendations to effectively harness the benefits of blockchain technology and expedite its implementation:

- Maintain ongoing updates on standards, advantages, and implementation requirements related to blockchain technology.
- Draw insights from successful practical experiences in utilizing blockchain technology.
- Foster private sector investment in the development and application of blockchain technology across various domains.

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