Leading Blockchain Hubs Across Europe

Byline: Lucy Motshwane

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Blockchains, the foundation and design manual for all cryptocurrencies, is gaining popularity not just in the world of digital assets but also in a wide range of other sectors that have adopted and integrated the technology into their operations. The whole network of computer systems on the blockchain is connected to and duplicates this digital log of transactions. Moreover, it serves as an information-recording system, making it difficult or impossible to alter, hack, or cheat the system. The fundamental objective of blockchain technology, aside from keeping track of transactions, is to decentralise peer-to-peer networks within companies and organisations, making it simpler and more secure to purchase, sell, and provide services.

Blockchain technology relies on encryption and cryptography as essential components to enable safe communication. Combining cryptography with hashing may make the Blockchain even more secure. Cryptography is the finest approach for protecting data from any unauthorised access. Also, it safeguards user privacy, transaction information, and data consistency, all of which are vital for the blockchain's continued development.

The above-mentioned affirms the buzz and hype surrounding blockchain technology, as it is evident that the principal functions of the technology enable efficiency and a fortified form of digital security, which can immensely aid systems used within traditional industries by adopting the technology. As exclaimed by http://bitai-method.com/, a leading crypto news source - blockchain technology bridges the gaps that have been growing larger within different industries

and acts as a solution that can be applied to bridge the gaps. Due to the mentioned and the prevalent global need for blockchain technology, various institutions have been conducting research and integrating blockchain technology as an educational course. Furthermore, numerous hubs centred around blockchain have been and still are being developed across the globe.

What is a Blockchain hub?

A blockchain hub is a physical or virtual venue where people, companies, and organisations interested in blockchain technology assemble to work together, share ideas, and create new blockchain-based applications and solutions.

Co-working spaces, incubators, accelerators, meetups, online forums, and educational facilities are just a few examples of the many different shapes and sizes that blockchain hubs can take. Usually, they offer a venue for connecting, networking, and exchanging knowledge among business people, developers, investors, and enthusiasts.
Blockchain hubs frequently provide a variety of resources and services, including funding, community events, mentorship, training, access to the newest blockchain tools, and access to the latest technology.

Additionally, within Blockchain hubs - research, education, and technological innovation are the key components used to help business professionals, organisations, and various global markets utilise Blockchain to its full potential as a catalyst that transforms industries and pushes them to be more functional, efficient, innovative and secure.

The best Blockchain Hubs In Europe

1. **Switzerland (Zurich)**

Due to its friendly regulatory environment, competent workforce, and tradition of innovation, Switzerland, commonly called a "crypto valley," is a hub for the blockchain industry. An experiment in the Zug canton in the country's centre marked the beginning of Switzerland's ascent as a cutting-edge blockchain powerhouse. The Zug authorities gave a loose group of businesspeople permission to establish a base for their new digital project in 2014. The result was Ethereum, the second-largest blockchain operating system behind bitcoin. The Cardano foundation and Web3 are two further cryptocurrency and Blockchain start-ups that were created and established in Switzerland. In addition to the mentioned, Sygnum, Polkadot, Dfinity and Tezos are other notable blockchain projects and crypto companies part of an additional 950 prominent blockchain projects and companies hosted by the country.

Zurich is a dominant blockchain and cryptocurrency centre in Europe for a variety of reasons. According to Nomura - a global financial services company with an integrated network spanning more than 30 countries and regions, some of these factors include the fact that the nation is "an established destination with a robust regulatory regime for digital assets and blockchain projects and an attractive talent pool". The nation is a thriving centre for innovative business ideas in the realm of distributed ledger technology because of its long history of financial security, strong privacy laws, and practical regulatory approach (DLT).

This is clear from the multiple efforts made by the nation's central authorities to introduce, integrate, and have the general public use crypto in a dynamic and forward-thinking local economy. The existence of expanding entrepreneurial and coworking services, the existence of favourable tax laws and financial regulations, the reformation of tax laws to accept Bitcoin and Ethereum as tax payments, a thriving economy with a flourishing investment ecosystem, and a country with a thriving investment ecosystem are just a few factors that have propelled this country into being a dominant and leading force in crypto and blockchain.

2. **London**

London has the world's second-best blockchain hub and ecosystem, which is still developing and growing in traction. This is due to an interrelation and communication between the government, educational institutions, research centres, start-up companies and various industries that significantly influence and contribute the economy, which is open to adopting, integrating and developing innovative blockchain technology across different spheres.

The UK government intends to establish their nation as a global centre that dominates in the trading and investments of digital assets. As a means to accelerate this, various measures were put in place, some of which include - the legislation of an emerging ‘financial market infrastructure sandbox’ to help companies innovate, the formation of crypto asset industry engagement groups and plans to regulate stablecoins (a type of cryptocurrency where the value of the digital asset is supposed to be pegged to a reference asset, which is either fiat money, exchange-traded commodities (such as precious metals or industrial metals), or another cryptocurrency), as announced by the UK Government in April 2022.

London is currently one of the top crypto centres in the world, ranking second in the world for having the biggest amount of crypto enterprises, with 25% of its population owning cryptocurrency, over 800 crypto businesses, and over 1,000 industry professionals. Investments in blockchain technology have also increased. A total of £280 million was invested in blockchain startups with offices in London in 2018. London's cryptocurrency ecosystem attracted $707 million in venture capital funding in 2021, and $292 million was invested in the first quarter of 2022, with $292m spent in the first two quarters of 2022, and has kept up its progress.

Key factors that contribute to London being a dominant blockchain hub:

- Innovative authority figures and organisations
- A thriving ecosystem
- Leading-edge technology
- An incredible investment hub
- A wide market for international blockchain job openings
- A large number of software developers as compared to other European cities.

3. Berlin

Berlin is one of the cities with a blockchain hub that contributes significantly and substantially impacts the whole blockchain ecosystem in Europe. Urlike Lierow-Schad believes that Berlin is a fantastic location for blockchain. This is due to Berlin's reputation as one of Europe's top technological hubs, where one can access highly skilled and qualified industry pioneers, enjoy comparably low living expenses, and attract a lot of venture capitalists who support and accelerate innovation in a variety of industries. In this metropolis, numerous concepts are created and brought to life. Different concepts are created and tested, allowing mistakes, lessons to be learned, and concepts to be revised.

Berlin hosts a few prominent Blockchain companies. Almost 180 businesses are actively working on blockchain technologies, including start-ups, large organisations, tech accelerators, innovation hubs, research institutions, and investors. Among these well-known businesses are Parity Technologies, the IOTA Foundation, Gnosis, Bitwala, Aragon, Tangany, Finoa, and many others.

The development and active integration of blockchain across a variety of sectors, including energy, Fintech (banks and insurance companies), health, transportation and logistics, the creative industry, the legal sector, information technology, and more, is perhaps the most significant development in Berlin.

4. Estonia

Despite being a relatively tiny country, Estonia dominates the world's digital asset market. The world's most technologically advanced country is this one. Blockchain is an emerging idea currently a hot subject in many countries. However, Estonia began experimenting with the technology even before the Bitcoin white paper, which popularised the term "blockchain," was released in 2008. This technology was known as "hash-linked time-stamping" at the time in Estonia. Estonia became the first Nation-State in the world to implement blockchain technology in production systems through the Succession Registry maintained by the Ministry of Justice in 2012. Since then, Estonia has used blockchain to protect national data, e-services, and smart devices in the public and private sectors.

To ensure that networks, systems, and data are secure while maintaining complete data privacy, the world uses KSI, a blockchain technology that was developed in Estonia. NATO and the United States Department of Defense make use of KSI blockchain technology. The integrity of

public data and services is upheld in Estonia using blockchain technology. In order to ensure that the State Agencies have access to the blockchain network via the X-road infrastructure, the Estonian Information Systems Authority (RIA) is a crucial service provider for the Government.

The following state registries are among those supported by blockchain technology:

- State Gazette
- Official State Announcements
- Healthcare Registry
- Property Registry
- Business Registry
- Succession Registry
- Digital Court System

Living in a digital society exposes you to cyber risks; hence Estonia has made significant investments in cybersecurity infrastructure and has acquired a wealth of knowledge in this field, making it one of the most renowned and esteemed international cybersecurity experts. Data is never transferred outside of the system; only hashes are sent to the blockchain service. The KSI Blockchain can scale to guarantee immutability for petabytes of data every second because no data is kept on it. Nowadays, it takes an average of seven months to find a data breach due to technological advancements and strengthened cybersecurity. However, data breaches can be found immediately using Estonian KSI Blockchain technology.

What is so significant about Blockchain?

Because it can be trusted, blockchain technology is extremely important. How? As a cyber security technology, it can be created and implemented in various systems across various industries, increasing the effectiveness and security of those systems by making it possible to instantly and errorlessly identify any and all alterations made to digital data, regardless of how small they may be or who may have made them. Blocks, nodes, hash codes, and a ledger, which are the foundational elements of a blockchain, all play a significant role in storing and protecting data to the point where, should there be any change in the data or the pattern of data, a trace will be left enabling one to detect a breach in security and trace it back.

Types of Blockchains

There are four basic types of blockchain technology, which are all connected, perform similar tasks, and have a few features in common yet differ from one another. These blockchains all fall into one of two categories: "permissioned" blockchains or "permissionless" blockchains, as described by Bitcoin Decode a leading crypto news resource.

1. **Private Blockchains (permissioned):**

While it is not as centrally controlled by a single entity, and only a limited number of nodes are allowed to access it and participate in the process, this blockchain is safer than others. Information can be safely secured using this blockchain without being made public. For internal auditing, voting, and asset management purposes, businesses utilise them as a result. The Hyperledger and Corda blockchains are two examples of private blockchains.

2. **Consortium Blockchain (permissioned):**

A group of people with authority over this platform, often known as a federated blockchain, has the authorisation to use it. Here, transactions are both initiated and validated (the blockchain receives transactions). The main features of this blockchain are its function as a public and private blockchain administered by several organisations, as well as its role as an innovative way to tend to an organisation's demands. Businesses, banks, and other payment processors in the real world have a lot of potential for this blockchain. Food tracking is a federated solution that is perfect for these organisations to employ because they constantly work with their sectors. Tendermint and Multichain are examples of consortium Blockchains.

3. **Hybrid Blockchains (permissionless):**

Public and private blockchains are combined to coexist in hybrid blockchains. The process in charge of them, though, lacks permission. In this case, a group of people controls some of the blockchains, while a public blockchain can see other parts of the blockchain. For example, hybrids may offer a better answer for the government, financial institutions, real estate, and healthcare sectors. It also offers a solution for situations in which data is shielded privately but accessible to the public. Instances of hybrid blockchains include the Ripple network and the XRP cryptocurrency.

4. **Public Blockchains (permissionless):**

As these blockchains are entirely decentralised, anyone with a device that can access the internet can take part in the network. Since no one owns the network, anyone with a computer can access a copy or hold of any other nodes or blocks in the network. Additionally, this blockchain allows for the verification of transactions and records. Public blockchains are protected by Proof of Work or Proof of Stake and can be used to replace conventional financial systems. This blockchain is more advanced since smart contracts are enabled within it to encourage decentralisation. Bitcoin and Ethereum serve as two examples of public blockchains.

The world as we know it, including how different businesses and the global economy operate, has undergone significant change as a result of blockchain technology and its integration into everyday life. Moreover, societies' organisational and operational structures and practices are evolving.

The world as we know it is changing; more and more things are going digital, partly as a result of the fundamental capabilities of blockchain technology, which are revolutionising global

networks and bolstering cyber security. It is clear that this type of technology has a significant impact on many different industries. In addition, we can be sure that there will be additional revolutions that affect not only the economy and industries but also the lives of people all over the world.

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