Market Updates

OCC on banks' use of stablecoins

Based on new guidance issued by the US federal banking regulator, the use of stablecoins is approved for the settlement of financial transactions by banks. The Office of the Comptroller of the Currency (OCC) issued an interpretive letter in which it clarified that national banks and federal savings associations may use certain stablecoins or cryptocurrencies for regular banking transactions such as payment operations. It explained that banks in a block will engage in the validation of stablecoins or in Independent Node Verification Networks (INVNs). The OCC also noted a growing demand in the industry for faster and more effective payments through the use of decentralised technology, such as autonomous node authentication networks. As such, the use of stablecoins will provide both the reliability and speed of digital currencies and the consistency of actual currencies in payment settlements, the OCC stated.

Ukraine deploys Stellar-based CBDC

Ukraine's Ministry of Digital Transformation is collaborating with the Stellar Creation Foundation to develop a virtual asset strategy in the region. According to a 4 January 2021 statement, the Ministry of Digital Transformation of Ukraine and the Stellar Growth Foundation signed a Memorandum of Understanding and Cooperation to mutually establish a local ecosystem of digital properties.

Oleksandr Bornyakov, Ukraine's Deputy Minister of Digital Transformation for IT Development, said: "What is important about this cooperation is contributing to the development of the infrastructure for a Ukrainian national digital currency. Most of the world's leading countries are developing their own national digital currencies. The National Bank of Ukraine has been researching the possibility of CBDC implementation since 2017. It demonstrates Ukraine's movement towards one of the major financial trends. At the ministry, we aspire to ensure our country's adaptation to technological innovations and competitiveness in the financial market in Eastern Europe."

The memorandum outlines the partnership's central emphasis as follows:

1. Cooperation concerning the growing demand for virtual assets in Ukraine;
2. Provision of funding support for virtual asset based projects;
3. Implementation and enforcement in Ukraine of stable coin circulation;
4. Facilitation of the creation of the Central Bank's digital currency in Ukraine.

UK asks crypto industry about rules for cross-border stablecoins

The United Kingdom is committed to retaining a role of global technical leadership. This means building a regulatory environment in which companies can innovate, while maintaining the highest regulatory standards so that citizens can reliably and safely use new technologies. This is crucial for trusting, not only digital payments, but also the legacy financial system as it transitions and incorporates these advancements.

In order to ensure such opportunities, the government is proposing a phased and proportionate regulatory approach that is sensitive to the risks posed and responsive to new market developments. The Treasury published a paper titled “UK regulatory approach to crypto assets and stablecoins”. It is a first step in the advisory process and focuses on creating a sound regulatory environment for stablecoins in which the government assesses the most urgent risks and opportunities.

The Treasury outlines a number of factors to monitor, including who is licensed to run stablecoins and how they may have to manage and disclose assets. This is in addition to trying to create a fundamental legal concept for stablecoins.

Testing of Digital Yuan with ATMs

A pilot program allowed the first digital yuan ATMs to be launched by the Agricultural Bank of China (ABC). The first machines were installed across the Shenzhen region. The pilot is part of the second digital yuan trial that is ongoing, consisting of 200 yuan to 100 000 individuals in Shenzhen.

The ATMs provide an opportunity for the digital yuan to be deposited and withdrawn through a smartphone application for the pilot program. This app helps clients to transfer cash and savings to and from the token. It is not surprising that the ABC is evaluating the digital yuan ATMs as the digital yuan pilot projects begins to be introduced in other parts of the world. The bank is, in fact, a partner of the People's Bank of China (PBoC), which is the issuer of Digital Yuan.

The first launch has been widely described as successful. In fact, the Shenzhen local authorities and the PBoC are paving the way for another $3 million digital yuan giveaway to be released.

Turkey announces digital currency pilot in 2021

In a speech before the parliament, Turkey’s Central Bank President Naci Agbal announced that Turkey will plan for the official launch of a central bank digital currency in 2021. His announcement is not a big surprise. Since 2019, Turkey has been studying a national cryptocurrency and exploring a potential digital currency of the central bank (CBDC). As the country's central bank struggles with inflation as high as 14%, the advancement on CBDCs seems even more reasonable. Agbal noted that the bank is “determined” to reduce inflation and meet a 9.4% year-end target.

The government included the adoption of "Blockchain-based digital central bank money" in its 2019-2023 economic roadmap published last July.

COVID-19 vaccines stored on blockchain

To track the handling of COVID-19 vaccines, the UK hospital network has been one of the first in the world to use a blockchain database technology, which has many properties that are similar to (and potentially interoperable with) major cryptocurrencies.

Various tech firms have suggested the use of blockchain technology in recent weeks. This type of distributed database is managed across a network rather than in one specific location. This ensures data on the COVID-19 vaccine doses is protected and easy to disseminate across organisations which usually use various record keeping systems.

It is particularly important to accurately monitor the status and handling of vaccine doses since the vaccines produced by Pfizer and Moderna need to be stored at ultra-low temperatures.

Therefore, blockchain can play an important role for distribution of vaccines as long as:

- It is not operated by anyone, but also offers a structured common protocol that can be entered and exchanged by all members in the supply chain.

- It is permanent, meaning current information cannot be erased, only appended, which ultimately pushes each participant who writes new data to a greater degree of transparency.

For more information, read about two British hospitals using blockchain technology to keep tabs on the storage and supply of COVID-19 vaccines.

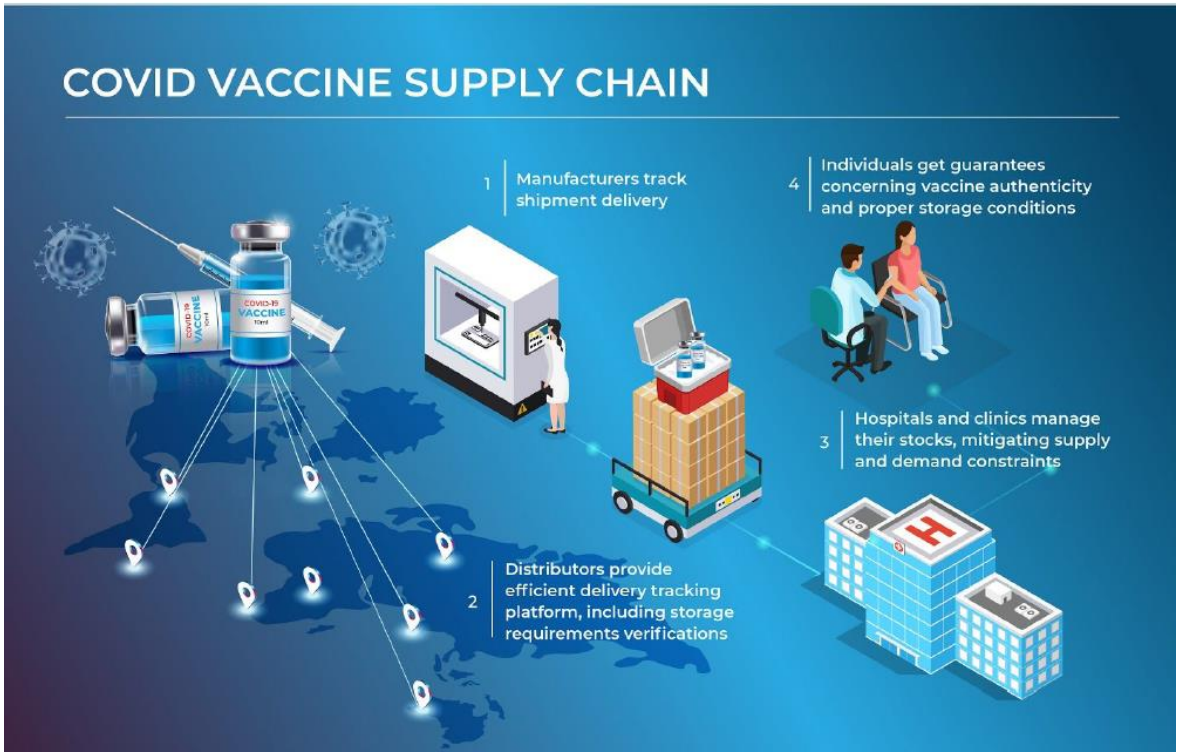

Image: Hexa Foundation

Technological Trends & Developments

Ethereum Developer Survey Report – 2020

The Ethereum Developer Study, which was conducted by the ETHGlobal team, engaged with 723 developers to gain valuable data and useful insights about the Ethereum developer community. Here are several key highlights from the survey:

- Poor documentation is the greatest barrier to blockchain adoption for newcomers, as well as doubts about their capacity to contribute to the space.
- The majority (67%) of the developers were interested or involved in Bitcoin before getting involved in the Ethereum community
- In terms of geographical distribution, most participant developers are based in the United States (25.1%), Canada (7.3%), India (6.9%), the United Kingdom (6.4%) and Germany (3.6%).

- Ethereum developers are younger than the average age of industry professionals. The vast majority is in their 20s (46.2%) and 30s (37.9%).
- While nearly a third (31.1%) of Ethereum developers have practised their coding skills in the past five years, 24.5% of them have between 5 and 9 years of coding experience.
- More than half (57%) of Ethereum developers hold a full-time job in the cryptocurrency/blockchain industry. Nearly 25% work as independent contractors/freelancers.
- Impact is cited as a key motivation for Ethereum developers. Nearly a quarter (24.1%) selected “How widely used or impactful my work output would be” as the most important value. A large number (16.6%) said they consider the option to work remotely as an important motivation, while 14.8% said they value the opportunity for professional development. Only 2.9% said they assign the most importance to the company's financial performance or funding

status. An even smaller proportion (1.2%) of the Ethereum developers said diversity or organisation is most important for them.

- 34% said their work schedule is typically longer than industry average (40 hours per week)
- 82% said they have side gigs (software development) aside from their full-time job.
- 81.3% said they actively contribute to Open Source Software.
- 37.6% identified themselves as "Developer, Full Stack", 12.9% as "Developer, Back End", 7.3% as "Student" and 6.1% as "Developer, Front-End".
- Respondents said the programming language used most often is JavaScript (37.1%), followed by Python (21.4%), Go (6.5%), typescript (5.8%), Java (5.5%) and HTML/CSS (5.3%).
- Respondents said the most adopted web frameworks are Reat.js (49.8%), Express (9.0%), Vue.js (7.8%), Angular (6.4%), Django (6.4%) and jQuery (6%).
- Asked how they found out about Ethereum, 34.7% said “a friend told me”.
- While 58.4% listed Web3.js as the Ethereum library they use most often, 97.1% said they use solidity for developing Ethereum applications. As regards the most frequently repeated tool Ethereum developers use, the list includes Metamask, Truffle, Etherscan, Infura, Ganache, Remix, OpenZeppelin SDK, Ethers.js and CryptoZombies.
- Answering which market event will contribute to the 10x growth of Ethereum developers, most participants responded "a Mainstream App", followed by Better dev tooling, decentralised finance (DeFi), and ETH price increase.

Cloudflare launched a Name Resolver for the Distributed Web

Web infrastructure company, Cloudflare, announced support for the distributed web. Cloudflare will service domains hosted on the Ethereum Name Service and the Interplanetary File System. The post explains how Domain Name System (DNS), which is used to visit a web page, shares similarities to Ethereum and IPFS naming system. Despite the similarities, however, the DNS resolvers’ attributes are unlike those of the distributed Web properties. To address this issue, the EthLink was introduced as a first version to provide a gateway to the distributed web.

Connecting IoT & all ROS compatible devices to the digital economy

Blockchain could pave the way for an economy based on transactions between machines. The case of the M2M economy is appealing in IoT where devices do not just communicate but create the value of their action. In this context, an announcement was published in January 2021 to collaborate with Robonomics network and the OCEAN protocol. The Robonomics platform could transform IoT agents and allow them to enter a futuristic era where they could monetarise data. The OCEAN protocol offers the opportunity of monetising data. One of the collaboration's initial milestones would be to establish a course on connecting devices to the OCEAN protocol.

Bitcoin: Stale block candidates as height 666,833

Numerous articles have been published online about a possible “double-spending” error in the Bitcoin network. Multiple blocks were produced as height 666833. As the name suggests, the double-spend refers to the case of spending the same Bitcoin twice. If such an incident is validated, it would render Bitcoin obsolete.

Reorganisations are frequently repeated and are an integral component of Bitcoin's architecture. According to Bitcoin's consensus algorithm, all nodes automatically switch to the heaviest valid chain. This ensures local ledgers are in sync with all the other ledgers within a ledger group.

Lukas Nuzzi, Network Data Product Manager at CoinMetrics, provided an overview of the events and explained the concept of stale blocks. On 18 January, a user broadcast a transaction with minimum transaction fees. When users underpay fees, their transactions are delayed. While miners search for more profitable opportunities, users may proceed with one of two options: wait until the gas fee levels drop or increase the fee they are willing to accommodate. The process of increasing fees of an already-broadcast transaction is through a new Replace by Fee (RBF) transaction. RBF consists of an identical transaction with higher fees and proceeds with the latter transaction instead of the initial one. In this case, the transaction is not included by the miners for one day. Meanwhile, the user issues a RFB with higher fees. This, however, cannot be processed by the network again. As such, the transaction is stuck once again.

Later, however, the user tries again with a second RBF transaction, with fees that are good enough. The Bitcoin network has been split into two versions, a fundamental part of how Bitcoin works. In these cases, the miners need to converge on a single version of the truth, usually taking one block (10 minutes). When the user has broadcasted the second RBF transaction, the fees slow down, and the chain is split. In this case, one miner may pick the low fee transaction for their version, and another miner may pick the second highest fee RBF transaction.

The chain was split for one block, but the miner on the branch with the low fee emerged the winner. While there have been different versions of the same transaction, only one is ultimately accepted by the network.

RBFs in stale blocks are common, and there was no "double-spend" confirmed, as initially reported by numerous publications covering the cryptocurrency markets. Detailed research for those wishing to deep dive into Stale Blocks is available here.

Policy and Legal Developments

Germany gives green light to blockchain-backed securities

Following its draft introduction in August 2020, new legislation in Germany does away with requirements obliging asset holders to maintain paper certificates for documenting security transactions. The new law, part of the country's national blockchain strategy, provides a framework for all-electronic securities and paves the way for their blockchain and distributed ledger technology (DLT) versions. German regulators promoted all-electronic securities to facilitate legal clarity, cut costs, reduce red tape, and promote innovation, all while protecting investors by ensuring the transparency and integrity of financial markets.

"The paper certificate may be dear to some for nostalgic reasons, the future belongs to its electronic version," said Finance Minister Olaf Scholz said.

Christine Lambrecht, BaFin's Minister of Justice explained: "The digitisation of the financial market is already well advanced and will be accelerated even further through the use of technologies such as blockchain. Today's cabinet decision significantly expands the innovative potential of these technologies for the German financial centre. At the same time, we create legal certainty in an area that is characterised by constant change through technological innovations".

Estonia tightens the vice on crypto-businesses

Since 2017 Estonia has emerged as one of the trailblasers in the blockchain and digital assets space. Estonia is one of the first countries to adopt distributed ledger technology (DLT) in government and public sector infrastructure, as well as in exploring the issuance of a national digital curreny. Estonia also embraced businesses active in the digital assets and blockchain space during a period of growth fuelled by the bloom of Initial Coin Offerings (ICOs). In this capacity, Estonia issued more than 1,000 crypto-licenses since, attracting investors and companies from all over the world and becoming a global epicentre for blockchain and digital asset entrepreneurship.

However, the shifting regulatory landscape in the country has rendered it difficult for companies to comply with regulations. In response to an alleged money laundering scandal in June 2020, the country's Financial Intelligence Unit revoked more than 500 crypto-licenses, in what was characterised by Madis Reimand, head of the FUI, as a "first step in tidying up the market". In mid-December 2020, news site Postimees reported that the FUI revoked 900 crypto-licenses (this is an estimated 70% of all crypto-licenses). Veiko Tali, Deputy Secretary General of the Government Commited for the Prevention of Money Laundering and Terrorist Financing, said Estonia needs to "to monitor the development of new technologies and manage the associated money laundering risks". He also noted that the remaining 400 crypto-related firms will be subject to "close attention".

South Korea revises for digital asset gains

In early January 2021, South Korea's Ministry of Economy and Finance announced an amendment to the country's 2020 revised taxation rules on listed shares, stock funds and profits from digital asset

investments. Starting 2023, gains of $50 million oringinating from listed shares and stock funds will be classified as financial investment gains and taxed at 20%. For profits over $300 million, the tax will increase by 5% to a total of 25%. At the same time, taxes on profits from digital asset investment will also be introduced. Specifically, annual incomes over $2.5 million from digital assets will be taxed at a fixed rate of 20%, with the acquisition price of assets owned prior to the introduction of the scheme calculated as the highest value between market and actual acquisition price.

US SEC cracks down on Ripple

The US Securities and Exchange Comission (SEC) issued an announcement on 22 December 2020 that took the entire blockchain and digital assets space by storm. SEC charged Ripple, the third largest cryptocurrency (after Bitcoin and Ethereum) in terms of market capitalisation, and two of its top executives with conducting a $1.3 billion unregistered securities offering.

Specifically, the SEC alleges that, from 2013, Ripple raised funds through the sale of its native digital currency, XRP, in a process similar to Initial Coin Offerings (ICOs). According to the SEC's complaint, the company distributed XRP amounting to billions of dollars in value as non-cash consideration. Also, Ripple CEO Brad Garlinghouse and Ececutive Chairman, Chris Larsen allegedly "failed to register their offers or satisfy exception from registration, in violaton of the registration provisions of the federal secuirites laws". In a press release, SEC explains that security registration requirements are to protect potential retail and institutional investors by ensuring that critical information regarding the business operations, practices and relevant risks are documented in a transparent and public manner.

In a fiery response, Ripple publishised on its website the internal note that Garlinghouse sent to the company's employes. In the note, the CEO says Ripple is not only on the right side of the law, but will also be on the right side of history. He also quoted his company's attorneys. Specifically, top firms Devevoise & Plimption and Kellogg, Hansen, Todd, Figel & Frederick, representing Ripple, noted respectively that the SEC is "completely wrong on the facts and law" and that the complaint is "wrong as a matter of law".

Garlinghouse also highlighted the company's open communication and high level of transparency, describing it as "over-communication". He argued that SEC's actions are "an assault on crypto at large" using XRP as a proxy.

Ripple's counter-argument revolves around the following three main facts.

1. The company does not share voting rights, profits, dividens, connections with purchasers or holders of XRP.
2. The potential investors in Ripple can become shareholders not through XRP, but with regular shares.
3. There is a lack of XRP's price correlation with Ripple's activities as a company.

The SEC press release followed announcements made by major digital asset exchanges, including Coinbase, Kraken and Binance US, informing customers of the suspension of XRP's trading. As a result, the price of XRP tumbled by more than 65% from over EUR 0.6 to below EUR 0.15.