

The Initial Explosion of Metaverse Technology's Impact on Accounting

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Abstract: Contemporary Metaverse programs all over the world demonstrate an upward trend, opening up a glorious prospect of the development of the digital economy. The meta-universe is achieved through and by using communication and arithmetic power, VR/AR devices, and artificial intelligence technology to virtualize and digitize the real-world process, which also provides a new imagination for the digital transformation of financial accounting. This paper aims to analyze how to transform and upgrade finance because of the principle of blockchain technology through reference and diagram analysis. The results of the research indicate that digital transformation like digitalization and intelligence of finance will be the trend, and the difference between financial accounting departments and sales departments might disappear. On this basis, it can be concluded that the accounting work would not be replaced or overturned, instead, workflow enhancement and a changing of work means occurred under the metaverse.

Keywords: metaverse, accounting, finance, accounting transformation, Web 3.0

1. Introduction

In the science fiction novel *True Name*, written in 1981, Vernor Vinge first proposed a virtual world accessed by a brain interface, which started the great wave of metaverse ideas. Forty years later, in 2022, the full-scale metaverse is not a distant future for humans or only in the future. The meta-universe is not a real physical but a digital virtual world. The core of the future metaverse will be the digitization, and it is not only the meta-universe that emphasizes the role of digitization, but also being infinitely enlarged at present. From the Internet to the digital economy, the metaverse impacts enterprises to develop in the direction of sharing, interconnection, and intelligence to realize digital transformation as soon as possible, and finance is undoubtedly at the front of the road of enterprise digital development. Especially for the financial industry, the metaverse contains an immeasurable financial value.

However, the metaverse probably also brings some changes to the accounting industry. The author explores the necessity and feasibility of transforming the finance industry from digital finance to financial metaverse through literature analysis, chart comparison, and financial economic principles to promote the financial practitioners' initiative to master the metaverse technology.

2. Contemporary Metaverse Project in the World

Tuvalu, the world's second smallest island nation, is located in the southern Central Pacific Ocean between Australia and Hawaii, and consisting of nine islands with a population of about 12,000. There are over 40% of the nation's land is submerged by the rising tide and the entire country is expected to be underwater by the end of the century because of climate change and global warming [1]. On November 17th, the minister of Foreign Affairs of Tuvalu, Simon Kofe, decided to transfer the whole country into the metaverse to pass down and preserve the culture and religion, replicating every architecture and landmark into the digital vision, which makes Tuvalu becomes the first digital nation in the world. Nowadays, Simon Kofe is concentrating on the international acknowledgment of Tuvalu.

Tuvalu is not the first country that handles its issue in the metaverse. In November 2021, Seoul Mayor Shixun Wu proposed The Seoul Vision 2030, a plan to make Seoul a city of coexistence, a global leader, a safe and enjoyable city of the future. The five-year metaverse Seoul Capital Plan is part of the vision to build the city of the future, which aims to improve social mobility among citizens and enhance Seoul's global competitiveness. Currently, Seoul plans to invest 3.9 billion won in the project. In 2022, the government plans to replicate the famous tourist attraction from reality into the virtual world, including public services, and digital devices for disabilities. Moreover, the most important part of the whole plan is the education part of Seoul. The Seoul Metropolitan Government will establish a virtual campus of Seoul Open City University (SOU). Seoul Learn, an online education platform operated by the Seoul Metropolitan Government, will provide various immersive content such as lectures, mentorship programs, and job fairs for youth [2].

Roblox, there are a bunch of world-renowned celebrity musicians who perform virtual concerts on the Roblox which has many virtual experiences for people, like video games, shopping, and social activity. The whole platform also has 3D engines, multitasking UI, and geospatial mapping, and people access the platform through VR/AR/XR technologies. Finally, decentralization is achieved by using blockchain technology. It also has its internal token which can be received by topping up or creating games in Roblox to buy more in-game costumes and equipment.

3. The Economy of Metaverse

3.1. The Media of Fact and Fiction—Cryptocurrency

In the metaverse world, commercial activity can break through spatial limitations and physical distance is no longer an obstacle to the development of finance and economy. Besides, the metaverse virtual world should not be isolated from and opposed to the real world. In fact, with technology developing rapidly in recent years, economic connection and affinity between the reality and virtual world increases sharply.

Accounting is a kind of economic management work that uses money as the main unit of measurement to reflect and monitor economic activities. Therefore, the currency for reality and the metaverse becomes the issue that appealed to the public's mounting concern. As Marx states that: "In addition to satisfying people's specific needs with its natural properties, money is a universe equivalent and has the ability to express and measure the value of all other commodities and to directly exchange them" [3]. As a result, as a token that is used to exchange products, money is merely a medium through which wealth is circulated [4]. In other words, the only value of cryptocurrencies is hype since cryptocurrencies that rely on algorithms or proofs of interest are vulnerable to volatility, while the lack of a store of value prevents them from replacing centralized currencies, so cryptocurrencies are only considered speculative assets. and which originate from consensus.

Although bitcoin and other cryptocurrencies offer fast and immutable transactions, their use as a medium of exchange is severely limited by their price volatility and low trade efficiency [5]. But the price of stablecoin often remained stable since they are relevant to fiat currency which suggested stablecoin can be regarded as a safe zone by investors. According to Figure 1 below, during the period from 2020 to 2021, the price of Bitcoin increased dramatically from 5000 dollars in 2012 to above 60k in 2018, which experienced rapid fluctuation. In Figure 2, the line chart demonstrates the price fluctuation of BUSD which is the most popular stablecoin in recent years. Compared with Bitcoin, the price of BUSD is around the \$1. Stablecoins can use blockchain to ensure the security and decentralization of transactions, or not use blockchain and focus on improving the efficiency of transactions.

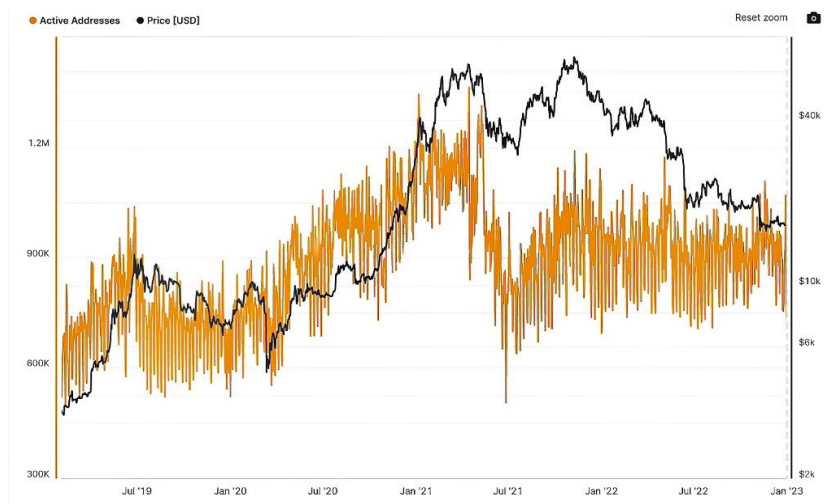


Figure 1: The price fluctuation of Bitcoin over the past year.

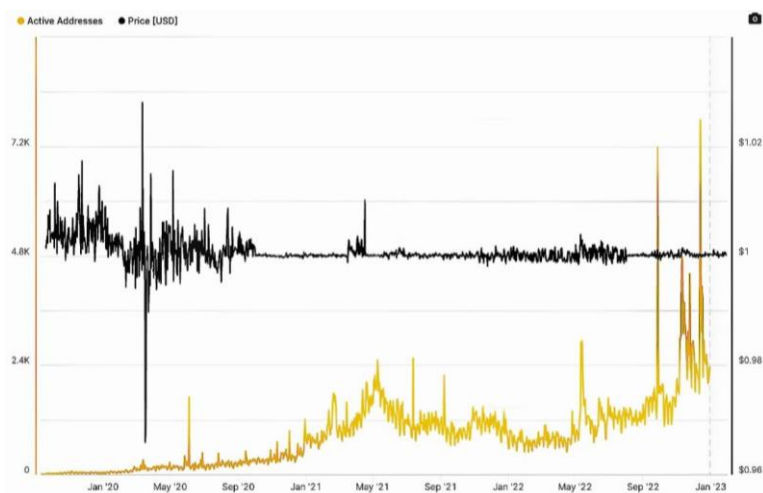


Figure 2: The price fluctuation of BUSD (a kind of stablecoin) over the past year.

3.2. Fictitious Assets in the Metaverse

The transaction of virtual assets can be done directly through blockchain. Moreover, the whole process should obey the agreed-upon and recognized fixed rules which can be taken as a system[6]. In Figure 3, it shows the future of metaverse decentralization. Unlike the system was one in which all individuals traded around a center in the past, the new decentralization might like each individual in this system does not take action under the unified order of the system, but rather communicates between themselves, and decides whether and what actions to take based on their own internal logic and the information from the outside [6].

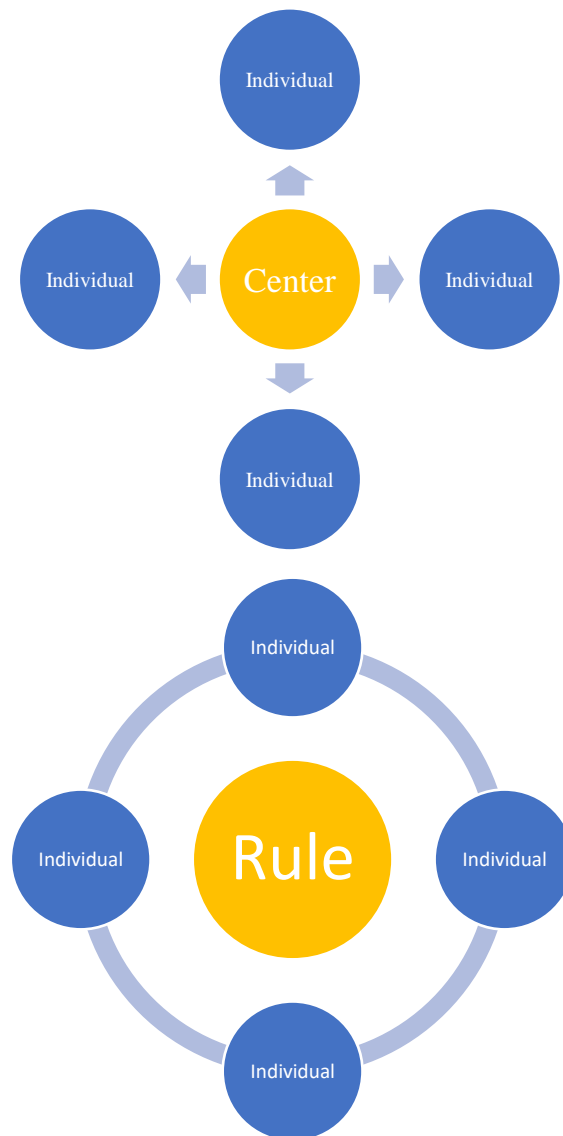


Figure 3: The difference between centralization and decentralization.

Because of the work mode of the metaverse, every fictitious asset can be freely set, edited and executed to suit the user's needs [7]. For a counterexample, if a boss of a company wants to loan from the bank, he takes his studio as collateral to the bank. In this process, the boss should prove and give written certification that he is the owner of the studio. The bank also needs to make an asset evaluation

of the boss and the studio. This is a common example in the real life, to be compared with tangible assets, the fictitious asset is more convenient to use in such a process. As long as the transaction trigger conditions are typed in the smart contract, the ownership of the property will be changed automatically once the default occurs.

The virtual assets are built on the underlying architecture of the blockchain. When the virtual studio was bought by the boss in the past time, this trade will be verified by the network to form a block, which is then added to the existing chain of transactions through cryptography [8]. In a blockchain, each participant can keep an automatically updated copy of the ledger that remains unchanged without the center, and users can have complete peace of mind about on-chain transactions [8].

4. The Relationship Between Metaverse and Blockchain

4.1. Metaverse Finance Fundamental Technology

Due to the immutability of blockchain, this technology can secure the transactions of many digital assets such as NFT and Bitcoin. Under the safeguard of blockchain technology, transactions are verified, executed and recorded chronologically in a database where new data (blocks) can only be added but not modified, the entire data formed is open to the public for access and verification at any time. Blockchain is like a global financial statement that is used to record all assets and as an accounting system to trade them globally, which allows blockchain to cover all forms of assets of all parties to a worldwide transaction.

Therefore, the parties in the network transaction can see the information of trade transparently through blockchain. For the accounting industry, the use of digital currency instead of fiat currency for settlement and trade can make the entire transaction process completely transparent. The virtual currency of the metaverse is not issued by central banks but is a form of person-to-person cryptocurrency. It is a decentralized digital currency with a cryptographic design to ensure the security of all aspects of the monetary payment system [9]. In the future, based on blockchain technology which aims to create a brand-new decentralized financial system without government supervision or charge, individuals can participate at any time. Under blockchain technology, every transaction would happen on blockchain's open-sourced ledgers, and because every single transaction is recorded on them, all data cannot be tampered with at will, avoiding financial data falsification [10].

Besides, new financial products or services would take place with the further improving connection between the metaverse and reality. Financial accounting will participate in the construction of the metaverse financial architecture and provide support for related financial services. In the past, accounting is supposed a system of recording and summarizing business and financial transactions and analyzing, verifying, and reporting the results [11]. It can only analyze the data that has happened, but there is no effective judgment on the future economic benefits, then after entering the metaverse, accountants can predict real-world financial market movements through statistics and records, with accurate financial data and business behavior as the basis, the function of financial forecasting will be strongly enhanced.

4.2. Metaverse Offers a New Path for Innovation in Financial Accounting

For enterprises in the future, business departments update the business operation and simulate the probable future events and the resulting impact in the metaverse space through the time-space connection of the metaverse can be combined with historical data, thus making the digital portrait of the enterprise more predictive and more targeted to minimize the probability of loss by managing risk in a more targeted manner.

When the future financial system is placed on the blockchain, the modern financial system with the company as the main accounting body may also change accordingly, and the division of labor in the financial and financial system based on the tamper-evident nature of blockchain information will also have the possibility of reshaping [11]. After the parallel world of the metaverse is gradually improved, the financial metaverse will also allow finance and business personnel to be more closely integrated and promote a higher degree of business-financial integration [12].

In future, such digital transformations as informatization, digitization and intelligence of finance will be the general trend [13]. Under the premise that financial data is rich enough and financial intelligence is strong enough, a data decision-making system similar to Baidu navigation can be formed: the CEO makes a decision-making logic, makes the corresponding algorithm, and then provides the corresponding in-depth data, which can directly gain insight into risks and realize intelligent "unmanned decision-making".

Under the digital financial system, a set of agile reimbursement fee control and aggregated consumption platform should be established to realize the whole process of application-order-reimbursement-checking-payment-accounting, and seamlessly connect with enterprise CRM and OA system to break the information silo and activate greater data value [14].

5. Conclusion

For the accounting industry, the metaverse era that may come will be an important development. The future of finance is to achieve the digital transformation of enterprise finance with the help of metaverse technology, such as cryptocurrency and VR devices, which is a kind of work means and workflow enhancement, rather than fundamentally overturning and replacing financial accounting. However, this shift places a higher demand on the future finance staff in terms of cognition of the monetary and financial systems. The future finance staff needs to have a deeper understanding of the new technologies that are constantly iterating and be able to grasp the technological dynamics in a timely manner.

Of course, the interpretation of the metaverse and the analysis of the accounting industry are just an initial attempt, to provide some perception for the accountants in the company to stimulate the upgrade of career ability. In the future, we will try to deepen the study of the effects and development of the metaverse's accounting system to provide insights into the operation of enterprises.

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