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The Legal System of Transactions and the Challenges of the Metaverse World in Accordance with UAE Law

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ABSTRACT

The world has undergone important technological transformations, making commercial transactions move from normal to electronic and linked to the real world. Still, the new generation of the Internet led to the emergence of the Metaverse world, which attracted many companies and governments, including the UAE, to pay attention to and invest in it. It is based on the use of Blockchain and Artificial Intelligence. This has affected the commercial activities of companies, as it has made contracts done smartly. Its subject will be non-fungible tokens, which is the subject of the study that emphasized the leadership of the UAE government and companies in its interest in the technologies of the Fourth Industrial Revolution and the world of Metaverse and its legislative exclusivity in regulating virtual assets and encrypted tokens and the intelligent agent, but that remains insufficient to control transactions in the Metaverse world.

INTRODUCTION

The world is witnessing several: economic activity has become based on knowledge and e-commerce, social relations are gradually limited to electronic communication connected to the Internet, and even political relations and communications are done electronically and remote meetings, and the Fourth Industrial Revolution based on three-dimensional printing and on automated thinking through artificial intelligence and the use of data and information that its size is increasing, with the documentation of transactions and the protection of information from forgery and modification and its documentation through the Blockchain. These technologies are being used in the real world in which we live and in independent virtual worlds emerging primarily on social media and video games such as Second Life, Instagram, Fortnite, and Roblox. They are all Metaverses, meaning interconnected virtual environments network of three-dimensional virtual worlds, where humans can interact with others socially and economically with virtual characters.

Within this world, companies will have an unprecedented ability to exploit the data they collect, especially as the Metaverse will be the most appropriate place to develop modern business practices since the spread of the Internet (News, 2022). As a pioneer in always encouraging modern technologies and expanding their use, the UAE has adopted many strategies for digitization and artificial intelligence (Government UAE). The launch of the Dubai Metaverse Strategy, especially in Dubai, seeks to become one of the top 10 Metaverse economies (Dubai Gouvernement). The UAE's initiatives in technology and digitization have been numerous, moving from normal dealings of electronic transactions to regular management to electronic management, and what characterizes the 21st century is the trend

toward smart transactions and smart management. This reflects the legislator's interest in establishing a legislative framework to regulate the use of modern technology related to electronic transactions, confidence services (Federal Decree-Law No. (46) of 2021, 2021), and commercial, corporate regulators; intellectual and literary property; protecting industrial property rights; combating rumours and electronic crimes.

The Importance of the Study

The study has a

Scientific Importance

By identifying what is meant by the Metaverse world and identifying the most important technologies on which it is based, such as Blockchain.

Legal Importance

To understand how to deal in the Metaverse world and how this world can be set to be within the framework of the law.

Economic Importance

Virtual assets, non-fungible tokens, and cryptocurrencies will be the objects of future economies and activities that will attract investors and dealers in electronic wallets.

Problematic

As a result of the legislative amendments adopted by the UAE, especially in 2021, to suit its orientation towards artificial intelligence, are they considered sufficient legislation to regulate transactions in the Metaverse, or must the law be to the requirements of the Metaverse world?

The methodology and the approved plan will be answered by adopting several approaches: Descriptive by

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identifying what the virtual world means, smart contracts, and crypto assets, and analytical by studying the UAE legal texts. To study: First: The impact of the Metaverse on the activities of companies; Second: The specificity of contracts within the Metaverse.

First Section: The Impact of the Metaverse on the Activities of Companies

Technological transformations have affected trade, so the transition from normal trade to electronic commerce, regulated by Federal Law No. (46) of 2021 on Electronic Transactions and Trust Services. The current generation of the Internet opens the way for creativity and innovation that links human intervention and the human mind with digital intervention and the artificial mind in Metaverse (1.1). The UAE and its companies were not far from this technological transformation (1.2).

The Concept of Metaverse

The meaning, components, and characteristics of Metavers will be identified to determine their effects on commercial transactions in the UAE. This is within two main sections: the first definition and the second is for features.

The Metaverse World

The Metaverse world is an ambiguous concept, especially from a legal point of view; we need to define and control the moral rules to identify its contribution later to the development of a Metaverse law (Bensoussan, 2022), it is a space that is still in its infancy but is the main engine of future technologies:

- Metaverse was first used in Neil Stevenson's 1992 science fiction novel *Snow Crash*, where humans interact as Avatar characters with each other and with software in a three-dimensional virtual space similar to the real world. Metaverse in English is a two-pronged term (ar. wikipedia) The first is "Meta," which means "beyond" or "Most descriptive," and the second part, "Verse", is drafted from the word Universe, which is intended for "The world," and the combination of the two words makes the meaning "beyond the world" or "beyond the universe," a hypothetical reality in which a person is present with other people in digital spaces by adopting a digital revolution that helps them interact even though they are in multiple places (Saleh, 2021).

- Another aspect of jurisprudence considers Metaverse one of the most popular names of the world's beyond-traditional projects, the Internet as a whole, including the full range of augmented reality (Albabidy, 2021).

- The United Arab Emirates has been interested in augmented reality and metaphors and their definition (Government UAE) (DubaiFutureFoundation), according to the Gartner Foundation, the world of metaphors is a virtual space open to all and arises from the merger of physical and digital reality to create an enhanced virtual environment (Agustin, 2024). It is an independent virtual economy that enables digital

currencies and non-replaceable symbols (NTFs). It requires using many modern technologies: augmented reality, portable projectors, augmented reality cloud, Internet of Things, 5G, artificial intelligence, and spatial technologies. Augmented Reality Technology: A technology that integrates the real world with a virtual latest by adding multimedia content, including audio, images, video, information, and animation, is "a technology that integrates the image generated by the computer into the user's vision of the real world that produces a built-in vision."

Characteristics of Metaverse

The Metaverse is a virtual world that was introduced using virtual and augmented reality devices; it enables people to play games, attend parties, shop, attend classes, and do experiments, but in a virtual way.

- It is a virtual world parallel to the real world, related to using video games connected to the Internet, like the Second Life platform or the Second Life, which portrays the user as a symbol in a three-dimensional world that has integrated many social networking sites (Albabidy, 2021); And it is a series of virtual worlds, by incorporating digital elements into the physical world to make it more digitized (Saleh, 2021) and several generations of the Internet (Al-Sadiq, 2011) from the first to the fourth generation, which employs data and integrates with the Internet of Things and artificial intelligence.

- It is based on modern technologies, such as headsets (headset or wireless), Reality glasses boosters, wearable technology, and three-dimensional techniques to create virtual objects. These technologies are constantly developing to make this world more interesting and dynamic (Albabidy, 2021), and the user interacts with robots and artificial intelligence. The world of Metaverse will allow the user to live the experience; by being an integral part, he will be a digital personality referred to as a Non-Fungible Token (NFT).

- The areas of use of Metaverse are multifaceted with several cons: modern Internet-related video games are its first application, portraying the user as a symbol in a three-dimensional world (such as the Skind Live platform, the Minecraft game, the Roeblocks game, and the Fortnite game); Education and learning the most affected by these technologies consequence of the COVID-19 pandemic, and the orientation of educational institutions for digitization (Saleh, 2021); It is also used in the field of experimental science and medical field; It will also change the profiles of commercial transactions, commercial leakage and entrepreneurship as a whole.

UAE Interest in Metaverse and Investment in Technology and Artificial Intelligence

As a result of the spread of the fifth generation of mobile and the increase of data processing power, especially in the United Arab Emirates, which, like other GCC countries, is the largest market for virtual reality technologies and equipment, with initiatives to support

programmers to consolidate the UAE's leadership in technology and innovation (Lababidi, 2021).

Features of the Emirati Interest in the Metaverse

This is shown through a set of UAE initiatives to enhance its presence in the virtual world, the most important of which can be mentioned as follows:

Dubai Metaverse Initiatives

By launching the Dubai Metaverse Strategy, the Dubai Virtual Assets Authority is the first in the world to establish its headquarters in the Metaverse under the name "The Sandbox" (AlAinNews, 2022b).

With Other Initiatives

- The Global Collaborative Village, a village in the Metaverse world that constitutes a site for work and cooperation (AlAinNews, 2022a); including the use of the Dubai and Abu Dhabi Police for the Metaverse; the establishment of the Dubai Blockchain Center; and the Metacon Dubai; allocation of a portfolio to the Minister of State for Artificial Intelligence Digital Economy and Remote Work Applications.

- Dubai Virtual Assets Regulatory Authority (DFA) launches The Sandbox, the world's first government regulator to enter the Metaverse, reflecting confidence in DFA as part of the integral to the strength of Dubai's economy" (Moneim, 2022).

- The UAE's adoption of a digital transaction strategy confirms its reliance on Blockchain (UAE Government, 2022)

- Dubai Emirate's adoption of the Blockchain system through the Land Department (dubai-land, 2017).

- The Global Blockchain Council was established by the Dubai Museum of the Future Foundation to research and explore current and future applications of innovative technologies (wam.ae) .

- The adoption of Blockchain-based projects as a vehicle life cycle management project implemented by the Dubai Road Transport Authority (RTA) (UAE Government).

- Issuing legislation regulating the dealing of virtual assets following Law No. (4) of 2022 regarding the regulation of virtual assets in the Emirate of Dubai, which considers Blockchain as one of the distributed ledger technologies approved in digital transactions, with the decision of the Chairman of the Board of Directors of the Securities and Commodities Authority No. (23/Chairman) of 2020, dated 01-11-2020, regarding regulating crypto asset activities concerned with crypto assets, their producers, dealers, and trading.

Orientation of the Companies in the UAE to Practice Activities within the Metaverse

The field of this world has not remained limited to team games only. Still, it has attracted the attention of major commercial companies, whether specialized in technology or social media: Facebook was the first company after the announcement of the transformation

of its name and strategy towards the Metaverse to become a Meta company –announced on 28-10-2021 (Roose, 2021); (Zakaria, 2021) And Microsoft bought Activating in Games intending to provide the foundation stone for the Metaverse, and in 2021 it launched the world's technology in one room Microsoft Mesh after launching Microsoft Teams (Albabidy, 2021), and major commercial companies have reserved for themselves and their brands a place in this space, such as Nike and Adidas (Bensoussan, 2022).

Emirati Companies were not Far from Such Interest (Albabidy, 2021)

- DAMAC Properties: which first focused on real estate and then built its virtual assets, to later combine the real world with the virtual world (virtual homes, digital real estate, digital devices, and digital jewellery) (Dabousi, 2021);

- Emirates Airlines: announced its accession to the Metaverse and launch of non-fungible codes and digitize its services and maximize presence in the virtual world;

- Commercial International Bank (CBI): First UAE bank to launch a virtual website in the Decentral Metaverse; Emirates NBD launched a global accelerator program for Metaverse startups in partnership with the Dubai International Financial Centre (DIFC) Fintech Hive and supported by Microsoft Technologies (Emirates Bank).

Second Section: The Privacy of Contracts within the Metaverse

Metaverse platforms will facilitate commercial transactions and contribute to increasing the volume of consumption of digital contents and data by ten times what is usual (Zeidan & Saif), with using of artificial intelligence and three-dimensional digital copies and intervening smart agent; with defining the concept of Blockchain, the basic component of the transactional infrastructure in the Metaverse (2.1); then learning about the applications of Blockchain in Smart contracts and crypto assets (2.2).

A Subsection Sample Blockchain Technology, the Basic Component of the Transactional Infrastructure in the Metaverse

The real launch of the Blockchain dates back to the beginning of the current century, especially in 2008, by its developer, Mr. Satoshi Nakamoto. It was applied in 2009 as a comprehensive record of transactions using the digital currency Bitcoin. Still, the boom was in 2014, as a result of separating the Blockchain from the currency in Blockchain 2.0 by expanding its field of application. To understand it, what it means, and its most important features will be identified.

Defining What is Meant by Blockchain

There are many definitions of Blockchain:

- Blockchain (a distributed database characterized by its ability to manage a constantly growing list of records called blocks). Each block contains a timestamp and a link to the previous block. The Blockchain is designed

to preserve the data stored in it and prevent it from being modified; that is, when information is stored in the Blockchain, it cannot be modified later (Corea). It is similar to a shared, decentralized ledger (DLT) that stores and transfers value with data over the Internet transparently, securely, and independently of a central body. This technology is based on three principles: trust, transparency, and mutual control over the data that is circulating (Baker).

- Blockchain is a system of a common, real-time, encrypted, and decentralized electronic ledger to process and record financial transactions, contracts, physical assets, and supply chain information (Hossain, 2023). This chain is open to everyone in the chain, can see the details of each record (block) and track the information over a secure network that does not require third-party verification (Rahman, 2021); This technology is a digital record book of transactions that are repeated and distributed over the entire network of the system on In blocks of encrypted records, each of them is a block, which is linked to each other and secured by a special cryptographic code, and each block contains Hash, which is a mathematical algorithm that records a small part of the data for transactions included in the record as a whole (Jaber, 2020).

- As for the UAE law, it did not intervene with special provisions to define the Blockchain, but it paid attention to them when regulating virtual assets, as Law No. (4) of 2022 regarding the regulation of virtual assets in the Emirate of Dubai, considers the Blockchain a distributed ledger, which defines it as: “A public or private digital database through which Actions on virtual assets, and their creation, preservation, and sharing, so that they are validated and owned in a network of automatic nodes from multiple locations and locations, including “Blockchain” technology (Article 1/12).

Advantages of Blockchain

Blockchain has several advantages (Latarsh & Ahmed, 2021)(Rahman, 2021):

- It is based on a decentralized distributed network of transactions: data is stored and approved in a distributed manner among all members of the chain without focusing on one responsible person;

- It provides security for its unchangeable privilege. Once the data is entered into the blocks, they are saved and approved by the rest of the users, making them rigid and cannot be modified.

- It has several types. The public Blockchain is a distributed network that anyone can join and participate in the preservation, unlike the private Blockchain, in which a person manages the chain and approves the preservation of data and transactions following the controls it sets, a type that guarantees more privacy and is often adopted by financial institutions and companies by identifying the parties of the network and the chain;

- Blockchain has several functions: saving data as a decentralized distributed record while tracking the

saved information and data saving within the blocks in a chronological sequence; sending and circulating data between members of the chain safely and soundly without third-party intervention; and one of the functions is trading assets and cryptocurrencies.

Smart Contract and Encrypted Tokens, Applications of Blockchain in Digital Business Transactions

Today's embodiment of the world of the Metaverse is through electronic games, especially multiplayer games played by players from different countries brought together by the game arena and the Internet. Their relationship during the game are real legal transactions, from buying and selling or renting, and may reach innovations that require protection to make their virtual characters more unique to win the game(Youssef, 2016). These transactions are considered smart contracts (the first branch), and those clothes, currencies, weapons, and even virtual people are considered virtual tokens or virtual money (the second branch).

The Smart Contract links the Parties' Trade Relations in Metaverse

The most important feature of the contracts in the world of Metaverse is the dominance of the principle of absolute authority of will. As a digital image stored with computer memory, virtual funds protect the appearance of physical money transferred and real estate and have a virtual value within the virtual game world can have a real exchange in the real world, for example, transfers of virtual currency in the world of Second Life amounted to \$115 million in 2009.

If online games are multiplayer, players' goal is not limited to entertainment from purchasing the virtual man or Avatar processing supplies they will represent and play through. Rather, it may go beyond the pursuit of profit and material gain as a driver of play and not merely entertainment; transactions occur during this virtual world using technical contracting programs or the electronic agent who will be the person's deputy in play and contracting.

The emergence of the smart contract coincided with the second generation of Blockchain (2.0) associated with yttrium, with which the field of use of the Blockchain (ledger) is defined:

- A program integrated into the Blockchain carries out conditional transactions automatically without human intervention or trusted external parties, so the information and assets are distributed through it completely in advance in the code and are operated by meeting certain conditions.

- A smart contract is a self-executing contract resulting from the use of Blockchain, which has led to the automation of contracts in the sense of making them automatic, which increases your efficiency and accelerates the process further. Once the predetermined conditions are met, the contract is executed automatically and automatically (Latarsh & Ahmed, 2021); it excludes

reliance on a neutral third party to verify the contract's terms were met.

- It is not a contract in the legal sense of the term but a computer program based on BlockChain. The smart contract will ensure the automatic and automatic execution of the agreement in the application of the principle of peer-to-peer dealing or in the application of the rule of “if, the result will be,” which is informed by the computer of these conditions after translating the legal agreement into the computer language.

- The UAE law has regulated such type of contract under the name of automated electronic transactions and defined them as: “transactions that are concluded or executed in whole or in part by an automated electronic intermediary” and defined the automated electronic intermediary as “an electronic information system that operates automatically autonomously in whole or in part, without interference from any natural person at the time the work is done or responded to, “while the electronic information system means “a set of information programs and information technology means prepared to create and to process, manage, store and exchange electronic or similar information.”.(Article 1, Federal Decree-Law No. (46) of 2021). The existence of such a contract is based on a program or information system that may interfere wholly or partially with the transaction.

Non-Fungible Token and Encrypted Assets, System Transaction Engine in Metaverse

Suppose the second generation of Blockchain is the self-executing smart contract. In that case, the third generation has the advantage of extending its scope to government departments, health, literature, art, and culture, and it is not limited to financial industries. It will be considered a platform to contribute to the development of the smart world by allocating resources to the physical world (A & Maximilian, 2018) (Latarsh & Ahmed, 2021) . If Metaverse does not exist widely, the non-replaceable symbols are already present and used in multiplayer electronic games as unique data encryption modules with Blockchain adoption that create non-replaceable digital files containing images, drawings, or videos embedded in the premium centre that will be valuable in the virtual market and are often used in the field of play, entertainment and Metaverse (Ramos, 2022).

- The NFT (Non-Fungible Token) are unique, non-replaceable data units stored in a digital record based on Blockchain technology, representing images, videos, or digital files as similar unique elements. They are smart ownership contracts for digital assets or sometimes real assets, representing single consumable digital units within the game or in the virtual world in the form of unique digital assets located in the Blockchain (such as Ethereum, Tezos, or Cosmos) by a smart contract (Schlumberger, 2021).

- The UAE has paid attention to non-fungible tokens, as follows: Regulating Crypto Assets following the decision of the Chairman of the Board of Directors of

the Authority (Securities and Commodities Authority) No. (23/Chairman) of 2020 regarding the Regulation on Crypto Asset Activities, defined tokens are considered crypto assets: “a record within an electronic network or distribution database that acts as a medium of exchange, storage of value, unit of account, representation of property, economic rights, or a right of access or usufruct of any kind, which may be transmitted electronically from one person to another through the operation of a computer program or an algorithm regulating its use.” (Article1/8). Dubai’s Virtual Assets Legislation gives a broad concept of virtual assets.

- It is considered an intangible object and fund that can be dealt with within the meaning of Article 97 of Federal Law No. (05) of 1985 promulgating the Civil Transactions Law of the United Arab Emirates: “Everything that can be acquired materially or morally and used legitimately and does not depart from dealing by nature or under the law is correct to be subject to financial rights”, and possession will be immaterial with the possibility of dealing with encrypted codes between the parties within the virtual world, following the provisions of the market allocated by the UAE to deal with it, and it is a moral movable even if it represents real estate assets that have their privacy derived from their nature(Youssef, 2016).

- They are considered intellectual property rights, and they must respect the legal procedures established to protect these rights, obtain a license or request permission to use the trademark or license to use the trademark for a company in a digital element. These symbols will be understood based on existing legislation, with some adjustments needed soon to regulate human interaction with the virtual world. But who would be her owner? Jurisprudence has conflicted between(Youssef, 2016): being considered derivative or common classifications and granting ownership to the owner of the game or platform. To be considered a computer program covered by legal protection (Articles 1, 2/2, Federal Decree Law No. (38) of 2021) as a right of the author owned by its author (Owner of the game or platform in the virtual world).

CONCLUSION

Every new technology that appears strange and incomprehensible quickly changes our perception of it and becomes a self-evident thing in our ordinary lives. Technology and its development are designed to facilitate human life. This is what the near future will show regarding using the Metaverse. However, the technologies used in this world will combine the virtual and real worlds, remaining subject to the legislation and legal texts in force without special legal provisions. This has been confirmed by the study, which produced a set of results: The world of the Metaverse is based on the technologies of the Fourth Industrial Revolution with the Internet, and it did not remain just science fiction but was embodied in reality. The United Arab Emirates is one of the first Arab countries to pay attention to the

Metaverse through its Metaverse strategy and encourage technological innovation. Major UAE companies tend to invest and gain a place in the virtual world. Blockchain is the main engine of the Metaverse world; it is a distributed ledger that documents transactions, preserves information, and protects it from forgery because it is based on cryptography and cryptocurrencies and is used as a modern technology for contracting and representing assets. UAE law regulates automated contracting or Smart contracting with the adoption of the electronic agent, which is one of the first legislations regulating crypto assets and related activities. Every new technology that appears strange and incomprehensible quickly changes our perception of it and becomes a self-evident thing in our ordinary lives. Technology and its development are designed to facilitate human life. This is what the near future will show regarding using the Metaverse. However, the technologies used in this world will combine the virtual and real worlds, remaining subject to the legislation and legal texts in force without special legal provisions. This has been confirmed by the study, which produced a set of results: The world of the Metaverse is based on the technologies of the Fourth Industrial Revolution with the Internet, and it did not remain just science fiction but was embodied in reality. The United Arab Emirates is one of the first Arab countries to pay attention to the Metaverse through its Metaverse strategy and encourage technological innovation. Major UAE companies tend to invest and gain a place in the virtual world. Blockchain is the main engine of the Metaverse world; it is a distributed ledger that documents transactions, preserves information, and protects it from forgery because it is based on cryptography and cryptocurrencies and is used as a modern technology for contracting and representing assets. UAE law regulates automated contracting or Smart contracting with the adoption of the electronic agent, which is one of the first legislations regulating crypto assets and related activities.

RECOMMENDATIONS

- The success of the Metaverse environment requires the intervention of all technological companies active in this field, whether related to financial transactions and virtual assets, digitization, cloud computing, and cybersecurity.
- The a need to establish a legal regulation of the work of experts and content creators of digital technologies and artificial intelligence; they work to keep abreast of technical developments in the field of Metaverse.
- The need for specific legislative texts in this area has become urgent, guaranteeing a balance between technological creativity and rights protection.

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