Chapter 12
Investigating Forensic Evidence in Metaverse:
A Comparative Analytical Study

Ramy Metwally El-Kady

iD https://orcid.org/0000-0003-2208-7576

Police Academy, Egypt

ABSTRACT

The chapter deals with the issue of investigating forensic evidence in metaverse. The importance of the chapter stems from its handling of the Metaverse technology, as one of the most prominent technological topics on the global scene at present, which is expected to shine in the coming times as the most prominent form of the development of the internet, which moves humanity to new technological dimensions. Spatial and temporal boundaries. The importance of this chapter is evident in light of the legislative vacuum that exists in the face of all forms of violations that occur in the Metaverse. The chapter aims to shed light on ways to collect digital evidence in the Metaverse. The chapter concluded with a set of recommendations, most notably: the need for concerted international efforts to amend international conventions on cybercrime, led by the Budapest Convention, or to aspire to develop a new international convention that regulates the responsibility of Metaverse service providers and obliges them to comply with cooperation in combating crimes.

INTRODUCTION

Metaverse is one of the vast technological transformations that humanity is witnessing during the twenty-first century. This new technology launched by Meta or Facebook previously, without a doubt represents a great revolution in human life. It transforms the individual from a user of technology, such as the Internet, to a participant and contributor to its development through the use of virtual reality tools that allow him to access the Internet and transform it into a community or virtual environment in which the sexes can live and interact with others in a new life experience that is sure to turn the life of humanity upside down (Marshall, 2023: 1).

There is no doubt that the current witness indicates the extent of the interest of the countries of the world in this technology to find some countries are moving to adopt their virtual experiments on the application of the Metaverse technology; Japan, the United States, South Korea, Singapore, and Indonesia (Egyptian Cabinet Information and Decision Support Center report, 2022: 55), and some other countries are developing strategies to expand the use of this technology; As Dubai's strategy for Metaverse in the UAE, third countries are starting to enhance their experiences in using this technology, such as Egypt.

Positive economic indicators highlight the trend of the global economy towards expanding the use of this technology; According to Some international estimates, the market for Metaverse is estimated to be $39 billion in 2021 and $47 billion in 2022 and is expected to rise during 2023 to $56.6 billion until reaching $679 billion in 2030 (Egyptian Cabinet Information and Decision Support Center report, 2022: 6), which highlights the positive economic outlook associated with Metaverse technology and its significant impact on the global economy(El-Kady, 2023: 5).

Amid the growing optimism of the majority of supporters of this technology, some expect the potential for VR environments (the Metaverse) to become new environments for criminal activity (Marshall, 2023: 1), so some question whether the metaverse opens new dimensions to the already known Internet criminality, and expect the danger of a quantitative increase of criminality in the Internet, but only low potential for the development of completely new forms of criminality (Laue, 2011: 19).

Other concerns have emerged about the appearance of some types of virtual crimes created by this technology, and then questions have become about how to prove this new type of virtual crime and collect and extract the evidence obtained about it. In light of the Metaverse technology, which opens the way to enter a virtual world of 3D using virtual reality (VR) and augmented reality (AR) tools, as well as the risks of privacy violations for users in light of the novelty of this technology and it is still under development (Abdel Majeed, 2023:76), with the expectation that the potential threat of crime in the world of Metaverse will be a concern in human reality; Given its great similarity to the real world, the real world can be influenced by events that take place in the virtual world (Seo et al., 2023:9468).

THE IMPORTANCE OF THE STUDY

The study focuses on the Metaverse, which is expected to shine during the coming period as the most prominent image of the development of the Internet, which will move humanity to new technological dimensions(Marshall, 2023: 1), despite the existence of legal provisions governing the confrontation of crimes in cyberspace, However, these rules are perceived to be incapable of confronting modern criminal phenomena across Metaverse, which are based on non-traditional alphabets and different elements in terms of people, facts, and spatial and temporal limits (Jibril, 2023: 103).

The importance of this study also is evident in light of the legislative vacuum that exists in the face of all forms of violations that occur in the world of Metaverse, There is no doubt that the current criminal laws are idle in the face of successive technological developments that cannot be dealt with criminally, except through existing criminal provisions due to the principle of criminal legality, that means only the law can define a crime and prescribe a penalty, not to mention that all criminal proceedings to confront all forms of violations that occur in the world of the Metaverse must be by law due to the same principle (procedural legitimacy), Metaverse is seen as taking the world to different and unconventional horizons that will undoubtedly raise unlimited problems from the perspective of criminal law(El-Kady, 2023: 6).

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