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Getting to know Non-Fungible Tokens (NFT) and Decentralized Finance (DeFi) In The Era of Society 5.0

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Abstract

Background: In 2022 a student traded his selfies for a profit of 1.7 billion rupiah and managed to attract the attention of the world community.
Objectives: This research aims to review the concepts of NFT and DeFi and to determine their utilization value.
Novelty: Value of benefits (*Maqashid Sharia*) in NFT and DeFi
Research Methodology / Design: The method used is a literature study with a phenomenological approach and the grand theory is analyzed using a constant comparison technique (qualitative).
Findings: The research results explain that NFT is a digital work such as art, music, and photos that are traded using blockchain technology. DeFi is a financial ecosystem built by blockchain technology by providing financial services using cryptocurrency as an investment tool with easy and transparent access without being controlled by any financial institution. DeFi and NFT will build a more advanced financial industry by presenting decentralized financial services in the era of society 5.0. With just an internet connection and a compatible device, people can access various financial services without having to rely on account books, mobile banking, and so on.
Implication: Its presence will open up new avenues for digital financial technology in the future. NFT and DeFi contain beneficial values in terms of maqashid sharia, namely *hifzu al-din* (protecting religion), *hifzu al-'aql* (protecting reason), *hifzu al-nafs* (protecting the soul), *hifzu al-nasl* (protecting offspring, *and hifzu al-mal* (protecting property).

Keywords:
Non Fungible Token (NFT), Decentralized Finance (DeFi), Maqashid Sharia, Society 5.0.

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A. Introduction

Industrial and technological advancements are now inevitable. In fact, by resisting these advancements, we will become economically backward beings. Every country is currently transitioning into the fourth industrial revolution period, which has the consequence of one of them being the study of blockchain as a method to accelerate the transmission of information. Thus, the growth of various business domains can be affected

by the speed of information dissemination in this modern age (Amrita & Setya Marsudi, 2021).. Financial institutions are one of the business sectors that are now heavily impacted. As the current digitalization era develops, business people involved in the financial sector are increasingly empowered by it. One of the technological advances that has been the focus of research in Indonesia recently is financial technology. This is interesting because Indonesia has considerable resources to help fintech grow, including a population of 45 million middle-class individuals and 150 million internet users overall, making the country's digital economy very important and vital to development (Nurhidayati et al., 2019). The large population in Indonesia has a major influence on how people conduct and use financial services, such as e-commerce and fintech (Aziz, 2020). All of these financial services are still under the control of financial institution authorities such as Bank Indonesia and the Financial Services Authority.

As for the new financial system becoming phenomenal among people who are fond of digitalization, it is an invention that uses Blockchain, Cloud, and Data Analytics to improve efficiency and generate solutions for financial business models. Blockchain innovation was developed and realized by Satoshi Nakamoto 2018 (a pseudonym whose whereabouts are currently unknown), which became the basis for the creation of the very famous cryptographic currency / digital currency Bitcoin (Satoshi Nakamoto, 2009). With the use of cryptocurrencies, transactions of goods and services can be made using digital assets that cannot be produced, modified, or destroyed, cannot be manipulated, and are not limited by a third party (such as a central bank), but rather a distributed system that embraces blockchain innovation that controls it (Nurussyifa, 2020). There are many types of cryptocurrencies in use today, but one of the most interesting is Ethereum, which is based on decentralized blockchain technology. Therefore, blockchain technology for digital money is currently a new area of study.

Blockchain technology is interesting to discuss in the current era of the Internet of Things (IoT) and Artificial Intelligence (AI) due to its decentralized nature and safety from data modification or hacker operations. Decentralized Finance, also known as Decentralized Finance or DeFi, is one of the financial technologies created by blockchain. Decentralized Finance is a digital financial service or service, or the transfer of financial activities that previously used the traditional system (banking) to utilize decentralized blockchain innovation. This means automating transactions with transparency, speed, effectiveness, automation, and efficiency without the involvement of any financial institution. Decentralized Finance / DeFi will be a big dream for the financial sector. It offers several advantages, such as the ease of borrowing, saving, investing, exchanging, and buying digital assets, as well as other unregulated financial markets and services. The traditional banking system is currently threatened by the rise of Decentralized Finance (DeFi), one of the latest developments in financial technology. In addition to Decentralized Finance (DeFi), which stands on the Ethereum cryptocurrency blockchain to make a financial service on cryptocurrency trading and investment, there are non-financial services that are also built by blockchain technology, namely Non-Fungible Tokens.

Non-Fungible Tokens (NFT) began to be glimpsed by the wider community in Indonesia starting with the emergence of the phenomenon of a student who had made a large profit in trading selfie photos as a digital asset in the form of Non-Fungible Tokens (NFT) in early 2022. This phenomenon arose when Ghozali with the name Ghozali Everyday on the Opensea account managed to trade his selfie photos with a profit of 1.7 billion Rupiah. The phenomenon attracted a lot of attention from the world community and without exception the Islamic community in Indonesia, to flock to try new fortunes. In Indonesia, Ghozali is not the only person or community who is struggling as a creator or investor in digital assets in the form of Non-Fungible Tokens (NFT), there is also a well-

known artist, Syahrini, who has a digital work entitled Syahrini's Metaverse Tour. Apart from a well-known artist, there is also a writer Denny Januar Ali who is also involved in the NFT business. Denny Januar Ali himself has a digital work entitled A Portrait of Denny Ja - 40 Years In The World of Ideas, this work has been sold with a profit of 27.5 WETH or 1 billion rupiahs (Fauza Mayana, 2022). The enormous public enthusiasm of the Ghozali, Syahrini, and Denny J. This phenomenon is influenced by the fact that Indonesian people since 2021 have been heavily involved in the digital world, especially in the world of crypto digital assets. In the annual report of the Commodity Futures Trading Supervisory Agency (BAPPEBTI), it is explained that the development of physical trading of crypto assets in Indonesia in 2021 has reached IDR. 859.4 Trillion or grew significantly by 1,223% when compared to 2020 IDR. 64.9 Trillion, and with total crypto asset customers registered as of December 2021 reaching 11,203,758 customers (BAPPEBTI, 2020).

The enthusiasm of the global community regarding the benefits obtained from the NFT business turns out that it also creates problems in the future, namely that no regulation can guarantee data protection and ownership of the NFT itself. In the blockchain system where NFTs live, it has not been able to strictly distinguish the subject between the NFT Owner (the party doing the conversion/minting) and the creator of the prior art that was converted into the NFT and how the rights of each party are protected. Several cases show the seriousness of the problems of protection and enforcement of copyright law related to NFTs. The first example is the case experienced by Derek Laufman, a Professional Digital Artist whose identity was copied and then attached to digital artwork that was traded as an NFT in the marketplace (Fauza Mayana, 2022).

Today's and future business challenges require more detailed and specific economic measures/values to be able to maintain company values, make a major contribution to the country, and achieve maqashid sharia for all parties. Scholars define aspects of economic activity from its social welfare function in terms of a hierarchy of definite individual and social utilities or what is called Maqashid sharia, namely necessity (daruriyah), pleasure or comfort (hajiyah), and luxury (tahsiniyah). The key to the maintenance of these three basic objectives lies in the provision of the first level, namely fulfilling the needs of daruriyah, which contains maintaining the value of religion, soul, mind, offspring, and property. The purpose of the Islamic economy itself in this case is not only focused on commercial goals that are reflected in the achievement of maximum profit alone but also considers its role in providing broad welfare for the community (Kadir et al., 2019). For this reason, economic activities must have maqashid sharia values.

Based on the description above, it shows that non-fungible tokens (NFT) and decentralized finance (DeFi) are starting to be in demand by the world community because they have a financial system that is different from the banking system. A decentralized financial system using blockchain technology. Moreover, this topic of discussion is still under-researched by the Indonesian people and there is no fatwa from the ulama assembly in providing legal views even though the Indonesian government has legalized crypto trading. For this reason, this research is very interesting to discuss to obtain an overview of the concepts of NFT and DeFi, as well as the benefits that exist in both financial technology systems.

B. Literature Review

According to a recent report by the World Bank Group, about 1.7 billion people around the world still do not have access to banks. While the Internet has helped transfer information from one part of the world to the other in a matter of milliseconds, time and cost are still required when it comes to financial assets. In recent years, the growing trend toward decentralization in the financial system has been driven by blockchain and

technological innovations. Satoshi and his unique invention, the Bitcoin Blockchain, began calling for peer-to-peer transactions without any intermediaries or centralization whatsoever. Six years later, another blockchain invention, Ethereum, emerged and has become the backbone of decentralization that promises decentralized finance (DeFi) (Abdulhakeem & Hu, 2021).

Satoshi Nakamoto has proposed a system for electronic transactions without relying on trust. It starts with the usual framework of coins made from digital signatures, which provides strong control of ownership but is incomplete without a way to prevent double-spending. To address this, Satoshi proposed a peer-to-peer network that uses proof-of-work to record a public transaction history that quickly becomes computationally impractical for an attacker to alter if honest nodes control most of the CPU power. The network is powerful in its unstructured simplicity. Nodes work all at once with little coordination. The nodes do not need to be identified, as messages are not routed to a specific place and only need to be sent on a best-effort basis. Nodes can leave and rejoin the network at will, receiving a proof-of-work chain as evidence of what happened while they were away. They vote with their CPU power, expressing their acceptance of valid blocks by working to extend them and rejecting invalid blocks by refusing to work on them (Satoshi Nakamoto, 2009).

Blockchain is a distributed shared ledger that fulfills these requirements. Due to its characteristics of decentralization and immutability, it prevents any member from unilaterally making decisions on the network. Members are required to seek consensus before adding any transactions to the ledger and transactions are transparent to all members. Transaction history of assets on the blockchain can be readily traced for establishing provenance. Blockchain implementations can be broadly categorized as permissioned or permissionless. Blockchain platforms such as Bitcoin and Ethereum are permissionless and allow anyone to join the network and perform transactions. Due to the anonymity inherent in these systems, computationally expensive consensus mechanisms such as Proof of Work are used due to the lack of any trust between transacting parties. Permissioned blockchain platforms such as Hyperledger Fabric only permit authenticated parties to join the network and can have defined access permissions to dictate the privileges of each network member. As transactions are traceable to the invoking member, dependence on resource-intensive consensus mechanisms is eliminated, thus reducing the operating cost (Karandikar et al., 2021).

According to Alex Huges et. all, several important considerations should serve as the basis of the decision-making process for using blockchain system transactions (Hughes et al., 2019):

1. Trust: Addressing the lack of trust between parties in an ecosystem is arguably the most important aspect of blockchain. The notion of trust operates in a broad spectrum and there are several ways in which blockchain enforces trust between stakeholders on various exchanges. Most notably the removal of intermediaries between cash transactions, which is the current model of digital currencies, but can be adapted in any intermediary business model (e.g. peer-to-peer auctions, insurance, banking). Due to the implementation of consensus algorithms and cryptography, parties in the network can interact and transact with each other relatively securely and with the assurance that their transactions and their identities will not be stolen or tampered with.
2. High uptime requirements: ensure high uptime since they have no single point of failure.
3. Immutability: If a business needs an immutable and chained record of transactions, then a blockchain can be a suitable solution for future auditing purposes.

4. Variability of transaction speed: Transaction speed can vary depending on the blockchain used. If slow transaction times can detract from the stakeholder experience, then a blockchain should be evaluated more carefully, as blockchains operate at different speeds. Examples of time-varying currency blockchains range from between seven transactions per second (TPS) in the case of Bitcoin to nearly 3,000 TPS, in the case of EOS.

Ethereum blockchain technology builds a new system and has a decentralized finance nature, namely DeFi (Decentralized Finance). One of the thousands or hundreds of blockchain networks active today is the Ethereum network. The blockchain itself is a shared networked ledger that records financial transactions within a business network. These assets, which include intellectual property rights, patents, copyrights, and trademarks, can be physical or intangible. According to (2), blockchain networks enable the tracking and tracing of any entity that has value. In the field of blockchain technology, the term "decentralized finance" (DeFi) refers to various financial services platforms and applications that operate on decentralized networks such as Ethereum. These financial services that do not rely on banks, financial organizations, authorities, or even governments are a new method of spending money due to their ability to save costs and leverage blockchain technology to build decentralized, open, and accessible systems. By utilizing smart contracts, which are self-executing algorithms that autonomously enforce the terms of the parties' agreement, DeFi eliminates the need for intermediaries such as banks and brokers (3). This is what distinguishes between conventional (traditional) financial institutions that already exist in the banking industry and centralized finance, more commonly referred to as Centralized Finance (CeFi) for example Central Banks, which are financial services with a centralized structure (Kadir, 2023). With the advent of blockchain and its decentralized and permissionless nature, new currencies have emerged that should be considered. One of the strongest innovations of blockchain is the transfer and trade of financial assets without trusted intermediaries. In addition to this goal, Decentralized Finance (DeFi), a new sub-area of blockchain, specializes in the development of financial technologies and services on top of smart contract-enabled ledgers (Kadir, Kara, et al., 2023).

In the meantime, An NFT is simply a set of data stored on a digital ledger that we know as a blockchain digital ledger that we know as blockchain. Just like digital currencies like Bitcoin (Satoshi Nakamoto, 2009), NFTs run on a blockchain platform. The difference is, in cryptocurrencies like bitcoin, the coin, which is a collection of code, can be broken down into many parts, while NFTs are non-fungible. That is, it cannot be broken down like a coin. Because in NFTs, the code set can be embedded with digital archives, making the code set in NFTs unique from one another. This is the most basic difference between NFTs and conventional cryptocurrencies (Noor, 2021).

Decentralized finance, or DeFi, is an emerging ecosystem within the world of blockchain technology. It refers to a set of financial applications and platforms that operate on decentralized networks like Ethereum. In simple terms, DeFi is a new way of accessing financial services that does not rely on traditional banks or financial institutions. Instead, it uses blockchain technology to create a decentralized and transparent system that is accessible to everyone. One of the key benefits of DeFi is its ability to democratize finance. In traditional finance, access to financial services is often limited to a select few who have the means and resources to navigate the complex system. DeFi, on the other hand, is open to anyone with an internet connection, regardless of their location or income level (Nath, 2023). Decentralized Finance (DeFi) is an application that uses smart contracts, runs on the Ethereum blockchain to get loans and collateral in the form of crypto assets. With the existence of Bitcoin blockchain technology, one can transfer crypto assets around the world without having to have a bank account. So DeFi users can perform financial services on their own without the need for bank intermediaries or other financial services companies because

all transactions are carried out automatically through the smart contracts system (Sektiyaningsih, 2022).

C. Research Methodology

This research uses a type of research in the form of a library study (library research). Library studies are related to theoretical studies and several references that will not be separated from scientific literature. Research findings are taken from various articles, and research documents which are the main reference data sources (Sugiyono, 2019). The data collection technique used in this library research is to find data about things or variables in the form of notes, books, papers or articles, journals, and so on. This research analysis technique uses an inductive/qualitative constant comparative method. Comparative Analysis Technique is a technique used in comparing events that have occurred when a researcher analyzes the event and is continuously carried out throughout the research (Sugiiyono, 2019). The phenomenon of NFT and DeFi which has received worldwide attention requires evaluation in seeing the value of the benefits of Maqashid sharia it contains, namely the value of benefits in protecting religion, reason, soul, offspring, and property by collecting literature data related to the benefits of using NFT and Defi, then analyzed in a comparative analysis to compare the benefits, in general, to specifically (maqashid sharia).

D. Result & Discussion

The Concept of Non-Fungible Tokens (NFTs) and Decentralized Finance (DeFi)

A Non-Fungible Token (NFT) is a unique certificate of authenticity on a blockchain that is usually issued by the creator of an asset. The asset can be digital or physical. The term fungible means that if the user exchanges or trades with other bitcoins, the user will have the equivalent or the same thing. While the term non-fungible means the opposite, the user will get something completely different. NFTs are used in the Ethereum blockchain, Solana, Polygon, Cardano, and others, which are cryptocurrencies, such as bitcoin. The Ethereum blockchain supports NFT trading by using ETH as their currency (Aletha, 2021). Ethereum is a technology built to support ether (ETH) cryptocurrency transactions and has a blockchain that is different from Bitcoin.

The certificate of ownership of the NFT is in the form of a digital token. NFTs are used in the same programming as cryptocurrencies, such as Bitcoin or Ethereum. NFTs have only one digital signature, which does not allow NFTs to be interchangeable or equivalent to each other. For example, one NFT clip will not be the same as another NFT because they are both NFTs. The way NFTs work is to provide tokens to create digital certificates of ownership that can be traded. NFTs are like traditional works of art. For example, Leonardo Davinci's Monalisa Painting, Monalisa Painting is valuable because there is only one. Even though many people can see it for free on the Internet, they cannot sell it because the item only exists on the Internet, not in tangible form. In NFTs, the original owner of these digital assets will be recorded about who the original owner is in a ledger called Blockchain. People cannot falsify the records in this ledger because it will be maintained by thousands of computers in the world (Sundari et al., 2022). Mark Cuban in Lawrence observed that NFTs are just one application of smart contracts. For example, a book that becomes an NFT is then traded and the publisher gets royalties on each sale (Trautman, 2022).

Decentralized finance, also known as Decentralized Finance (DeFi), can be DeFined as a digital financial ecosystem built on blockchain technology with smart contract protocols

and distributed ledger technology (DLT) that provides more accessible and transparent financial services for people and companies. Smart contracts, are self-executing contracts with conditions and agreements between buyers and sellers that are entered directly into lines of code so that the transaction automatically runs through the internet network. Meanwhile, a distributed ledger is a decentralized peer-to-peer (P2P) digital system that aims to record all transactions between parties in all places at the same time across countries and regions. In simple terms, decentralized finance (DeFi) is very likely and has the potential to revolutionize the financial industry sector both traditionally and digitally because services in DeFi are faster, accessible, open (transparent), cheap, and safe. DeFi is still said to be a new financial industry, but DeFi has been popular in applications or platforms such as Decentralized Exchange (DEX), which is an application for decentralized exchanges for trading digital assets such as cryptocurrencies without the help of central institutions or authorities in overseeing these transactions. With this, DeFi is an alternative to financial services/services in the future and makes it possible to replace traditional financial services. So it can be said that DeFi is the evolution of finance in the metaverse era and the future financial ecosystem.

Ethereum blockchain technology builds a new system and has a decentralized financial nature, namely DeFi (Decentralized Finance). One of the thousands or hundreds of blockchain networks active today is the Ethereum network. The blockchain itself is a shared networked ledger that records financial transactions within a business network. These assets, which include intellectual property rights, patents, copyrights, and trademarks, can be physical or intangible. According to (Gupta, 2018), blockchain networks enable the tracking and tracing of any entity that has value. In the field of blockchain technology, the term "decentralized finance" (DeFi) refers to various financial services platforms and applications that operate on decentralized networks such as Ethereum. These financial services that do not rely on banks, financial organizations, authorities, or even governments are a new method of spending money due to their ability to save costs and leverage blockchain technology to build decentralized, open, and accessible systems. By utilizing smart contracts, which are self-executing algorithms that autonomously enforce the terms of the parties' agreement, DeFi eliminates the need for intermediaries such as banks and brokers (Nath, 2023). This is what distinguishes conventional (traditional) financial institutions that already exist in the banking industry and centralized finance, more commonly referred to as Centralized Finance (CeFi), for example, Central Banks, which are financial services with a centralized structure.

The concept of CeFi in crypto asset trading refers to financial services that use systems and procedures similar to traditional financial institutions that run. Therefore, using centralized financial institutions will incur administrative, service, and other fees in the traditional banking system. This idea of centralized physical cryptocurrency trading can be compared to the current banking system or traditional financial services (Sektiyaningsih, 2022). DeFi is considered the opposite of the CeFi system. Customers will be charged a fee in the CeFi system for every transaction involving financial services. While DeFi on the other hand, lowers costs or reduces costs because it is supported by decentralized blockchain technology in which there are smart contract protocols and distributed ledgers (DLT) that are not controlled by banks or other organizations. This concept is very relevant and supports the formation of the era of society 5.0 because the concept of the system that runs on NFT and DeFi connects all people who access these financial services without having to open an account at a bank and do not need to register with a financial authority institution. The NFT and DeFi systems are the latest digital financial systems that rely on internet connections and compatible devices to access all financial services on the blockchain.

Legal Position of Non-Fungible Tokens (NFTs) and Decentralized Finance (DeFi)

The system that runs on NFT and DeFi uses cryptocurrency or digital currency. This means that all purchasing, exchange, trading, and investment services on NFT and DeFi use non-physical crypto money. The characteristics of money in Islam are as follows, (1) Money as a medium of exchange, in Islam money is a medium of exchange not as a commodity or as an object to be traded; (2) Money as a unit of calculation or payment standard; (3) Money as a store of value, money is stored or saved for future use or just in case for unexpected events. Cryptocurrency or cryptocurrency when viewed from the characteristics of money in Islam, which is mentioned in point number one "money as a medium of exchange" then cryptocurrency or cryptocurrency can indeed be used as a medium of exchange, money which in Islam is only considered as a medium of exchange then money is anything that has a function for a medium of exchange that can be accepted in transaction activities, not necessarily in the form of money but can be anything such as gold, silver, paper, and others. But if reviewed further, apart from being a medium of exchange, cryptocurrency is also a commodity, in other words, cryptocurrency is a traded object, even though it is clear that in Islam money is only used as a medium of exchange not as a commodity. Then, for what is mentioned in point number two "money as a unit of calculation or unit of payment", cryptocurrency or cryptocurrency has also fulfilled this characteristic because it can be used as a means of measuring the price of goods whose payment uses cryptocurrency or cryptocurrency, for example in NFT in OpenSea, then for point number three "money as a store of value" in other words to be saved, cryptocurrency or cryptocurrency can also be used to invest, for example investing in cryptocurrency or cryptocurrency on Tokocrypto, Binance, Indodax, and others. Considering that in practice buying and selling must be by the provisions of shara', in other words, the conditions, pillars, and several other things related to buying and selling must be fulfilled, so when the conditions and pillars are not fulfilled, means that it is not by the provisions of shara' which makes the sale and purchase invalid, the following pillars of buying and selling must be fulfilled, (1) There are people who have an agreement or aqidain, namely the seller and the buyer; (2) There is a mabi (object / item being traded); (3) There is a sighat (ijab and kabul). (4) There is a value or price (saman) as a medium of exchange for goods. Cryptocurrency or cryptocurrency is only used as a medium of exchange then there is no problem because one of the characteristics of money in Islam mentioned earlier is that money is only a medium of exchange or means of payment, but when the medium of exchange contains something haraam, then the transaction may become haram.

Based on Fatwa No. 117/DSNMUI/II/2018 of the National Sharia Council-Majelis Ulama Indonesia (DSN-MUI) on Information Technology-Based Money Lending and Borrowing Services, it can be a reference basis for determining the laws of NFT and DeFi in Indonesia, namely equalizing the legal position of general Fintech which is also a technology-based financial service. This also provides another alternative to meeting the needs of community financial products and services based on the principles of sharia (Islamic) law (Kadir, Lufti, et al., 2022). Thus, the fatwa can be considered to provide legal certainty to increase public confidence in the financial services provided by financial platforms that implement decentralized systems such as NFT and DeFi, thus increasing public interest in conducting financial transactions by utilizing technology. However, in the current update of other countries, the regulatory landscape for decentralized finance is still changing and evolving rapidly. NFTs and DeFi, which operate on blockchain and smart contracts, pose unique challenges to traditional financial regulation, as they operate without a central intermediary. The absence of intermediaries may complicate the application of existing financial laws and frameworks to DeFi platforms and activities. Regulators around the world are beginning to take notice of the growth of NFTs and DeFi and are considering how to address the potential risks and benefits if any. Some jurisdictions have introduced guidelines or started adapting existing laws to cover certain aspects of NFTs and DeFi.

The Value of Non-Fungible Token (NFT) and Decentralized Finance (DeFi) Benefits

Technologies such as NFTs and DeFi do not aim to replace established institutions. Instead, NFTs and DeFi progressively replace existing functions with better, faster, and cheaper alternatives. The purpose of transactions should be to create and maintain benefits (goodness) while avoiding mudharat (harm) in this world and the hereafter. Therefore, the purpose of the digital financial industry must be consistent with this goal (Muchtar & Zubairin, 2022). By the DeFinition of maslahah, namely something that can bring benefits, goodness, and benefits (Kadir, 2019). In terms of terms, it is a shar'I benefit where profit and material (Kadir, 2023) are not the only goals (Kadir et al., 2019). To get the safety of the world, and the honor of the hereafter (Tiakoly et al., 2019), a healthy quality of life in society must be fulfilled (Kadir, 2023). The purpose and vision of the Islamic economy which is not only focused on commercial business (Kadir, Kadir, et al., 2023), but also consider the role and function of its usefulness and value for society in general (Kadir, Awaluddin, et al., 2022). For this reason, it is very important to bring progress and prosperity to every individual, household, family, institution, organization, and entity but also to increase economic activity to increase the stability of the country (Abdullah et al., 2020) which is the determining factor of life (Kadir, 2022) to carry out aspects of economic activity by Islamic economic principles (Kadir & Salfianur, 2021). Great scholars such as Imam Al-Ghazali DeFined aspects of economic activity from its social welfare function within the framework of a hierarchy of individual and social utility, namely maqashid sharia (Kadir, 2022). The concept of Maqashid Sharia has important relevance in evaluating phenomena such as Non-Fungible Tokens (NFTs) and DeFi. Maqasid Sharia refers to the principles of Islamic law that aim to protect the interests of each individual and society and encourage the realization of benefits (maslahah) for mankind.

NFTs are a digital form that represents ownership of unique assets such as artwork, music, or other collectibles. Meanwhile, DeFi is a digital financial ecosystem that provides financial services such as saving, borrowing, investing, trading, and purchasing cryptocurrencies that are more accessible and transparent without third parties. In the context of NFTs and DeFi, the application of Maqasid Sharia plays an important role in ensuring fairness, sustainability, and fulfillment of the objectives of Islamic law. In Islam, the concept of maslahah (benefit) refers to legal principles that aim to protect and promote the interests of society in general. When evaluating certain aspects of NFT technology, such as its usefulness or impact in the context of maslahah, several considerations can be taken into account. Here are some of the maslahahs related to NFT and DeFi in Islam:

a. Fostering creativity and economic growth

NFTs provide new opportunities for artists and content creators to monetize their work directly without going through intermediaries. This can encourage creativity, incentivize work, and help economic development within the artist community. DeFi provides opportunities for digital financial services companies to develop blockchain-based fintech services. NFTs and DeFi will also boost the country's economy through tax collection on cryptocurrency assets.

b. Value of fairness and sustainability

Through smart contracts established in NFTs, artists can be compensated automatically whenever their works are sold or transferred. This helps strengthen intellectual property rights and ensures income sustainability for art creators. The smart contracts that are also present in DeFi increase the value of fairness between transacting parties. Transaction parties cannot commit fraud or unilateral contract cancellation.

c. Transparency and proof of ownership

The blockchain technology used in NFTs and DeFi makes the recording of transactions transparent and irreversible about the ownership of digital assets. This can help reduce uncertainty and fraud in buying and selling transactions, and provide clear evidence of ownership.

Maqashid Shariah values that can be evaluated on NFT and DeFi:

Maqashid Sharia	Description
Hifz al-Din (Protect religion)	NFTs and DeFi must ensure the protection of property rights and not contain gharar, riba, and maysir.
Hifz al-'Aql (Protect the mind)	NFTs and DeFi may not be used to promote content that contains moral turpitude, violence, sexual harassment, pornography, or matters that may harm society.
Hifz al-Nafs (Protect the soul).	NFTs and DeFi are not for assassination planning or terrorist financing transactions. NFTs and DeFi should avoid being associated with illegal activities, gambling, or matters detrimental to physical and mental health.
Hifz al-Nasl (Protect offspring)	NFTs and DeFi shall not be used to violate the privacy rights of individuals or expose personal information without lawful authorization. proof of asset ownership in NFTs and DeFi preserves the parties' continued transactions and income.
Hifz al-Mal (Protect property)	In buying and selling transactions through NFTs or DeFi, ownership rights must be clear and protected. NFT and DeFi's source of income is clear, not from the results of fraud.

In addition, NFT and DeFi have potential benefits (maslahah) in the future for MSME actors. NFT and DeFi have several functions for MSMEs so that they can further expand their access and be able to socialize their strengths properly (Kadir & Abdullah, 2019), including the following:

a. Financial technology development. To improve service characteristics, financial institutions, including banks, savings and loan cooperatives, and other financial organizations, are encouraged to develop fintech. Users of this program, especially MSME owners, will find it easier with these improvements.
b. NFT and DeFi can change people's traditional routines, such as how general fintech has changed how consumers behave today. Online transactions not only make transactions easier but can also be completed practically without having to come in person.
b. Business owners will be forced to adopt NFT, DeFi, and crypto as transaction instruments as this impacts the sales of their products.
c. Practicality and Security The development of NFT and DeFi technologies include sophisticated security features in their applications to provide a higher level of security and convenience than manual transactions. MSME owners are encouraged

to freely do business without having to worry about the threat of fraud or identity abuse.

Despite its potential and benefits, DeFi also faces challenges and risks, including smart contract vulnerabilities, regulatory uncertainty, and market volatility. But while it has strengths that outweigh weaknesses, so too do opportunities that outweigh threats (Kadir & Basri, 2019). As the technology and industry mature, addressing these issues will be critical to the continued growth and adoption of NFTs and DeFi. Overall, NFTs and DeFi in the age of society are connecting all of society through the internet network, revolutionizing traditional finance, promoting new financial inclusion, innovation, and accessibility empowering individuals with greater control over their own financial lives without the need for a third party or financial institution.

E. Conclusions & Policy Recomendation

NFTs are a digital form that represents ownership of unique assets such as artwork, music, or other collectibles and are traded through blockchain technology. Meanwhile, DeFi is a digital financial ecosystem built by blockchain technology by providing financial services such as saving, borrowing, investing, trading, and purchasing cryptocurrencies that are more accessible and transparent without third parties. Regarding Cryptocurrency or cryptocurrency, if it is only used as a medium of exchange, there is no problem because one of the characteristics of money in Islam mentioned earlier is that money is only a medium of exchange or means of payment, but when there is something forbidden in the medium of exchange, the transaction may become haram. If referring to Fatwa No. 117 / DSNMUI / II / 2018 of the National Sharia Council-Majelis Ulama Indonesia (DSN-MUI) concerning Information Technology-Based Money Lending and Borrowing Services, it can be the basis for determining the law of NFT and DeFi to become an Islamic-based digital financial service. DeFi and NFT will build a more advanced financial industry by presenting decentralized financial services. With just an internet connection and compatible devices, individuals have been able to access a wide range of financial products and services without relying on traditional financial institutions. its presence will open new avenues for digital financial technology in the future. Moreover, NFT and DeFi contain the value of benefits in terms of maqashid sharia, namely hifz al-din (protecting religion), hifz al-'aql (protecting reason), hifz al-nafs (protecting the soul), hifz al-nasl (protecting offspring, and hifz al-mal (protecting property).

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