

## DEVELOPMENT AND MANAGEMENT OF NFT PROJECTS

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Received: 29 August 2024  
Revised: 03 September 2024  
Accepted: 23 September 2024

**Abstract:** NFTs have changed the outlines of digital assets and rights, creating new possibilities for identifying and trading digital products. This technology allows the development of future-proof linked digital assets with significant uses in sectors like art, gaming, real estate, and fashion. NFTs impact and change ownership and provenance in these fields while creating new economic models and engaging users. This paper proposes the methodology for the development and management of NFT projects. The development of a prototype of an NFT fashion project is shown to explore the potential of adopting the proposed method. The developed NFT fashion project gives a clear approach to implementing and managing NFT projects using agile methodologies. The proposed NFT project also proposes tools for creating NFT collections, blockchain technology for developing and deploying smart contracts for conducting business transactions, and web technologies for developing an NFT marketplace.

**Keywords:** Blockchain; Digital assets; Ethereum; Non-Fungible Tokens (NFTs); Smart contracts.

## 1. INTRODUCTION

Blockchain technology has started in a new era of digital ownership and asset management, epitomized by the rise of Non-Fungible Tokens (hereinafter: NFTs). NFTs are unique cryptographic tokens that exist on a blockchain and cannot be replicated. NFTs represent ownership of digital assets like music, art, videos, and virtual goods. Since their inception, NFTs have gained significant traction, revolutionizing various industries by providing a new way to buy, sell, and trade digital assets (Ante, 2022).

The importance of NFT projects lies in their ability to create verifiable digital scarcity, enhance the value of digital content, and open up new revenue streams for creators. In 2021, the sale of digital artwork by Beeple for \$69 million at an auction house underscored the potential economic impact of NFTs. This burgeoning market presents opportunities and

challenges for developers and managers of NFT projects (Ante, 2021). NFTs' development primarily relies on blockchain technology, particularly smart contracts. Smart contracts are self-executed based on the terms agreed upon creation and are directly written in the code. They are run on blockchain networks like Ethereum, Stellar, and Ripple, which ensure that all transactions are transparent and secure.

NFT projects span a wide range of applications across various industries. In digital art, NFTs have enabled artists to tokenize their works, ensuring authenticity and enabling new revenue streams through direct sales and royalties. The fashion industry is leveraging NFTs to create virtual garments and accessories, often used in digital environments like the Metaverse. Mobile games have integrated NFTs to offer unique in-game items and characters that players can buy, sell, and trade.

This paper proposes the methodology for the development and management of NFT projects. A prototype of an NFT fashion project is shown to reveal the possibilities of adopting the proposed methodology.

This paper is structured as follows: Section 2 provides an overview of different types of NFT projects. Section 3 discusses the possibilities of using agile methodology in NFT project management. Section 4 presents a detailed insight into the development and management of an NFT fashion project. Finally, Section 5 concludes with a summary of findings and recommendations for future research.

## 2. NFT PROJECTS

Non-fungible tokens (NFTs) have revolutionized the digital landscape, providing a new method for owning and trading digital assets (Das et al., 2022). NFTs have found applications across a variety of domains, transforming the way we perceive and interact with digital content. The unique nature of NFTs, characterized by their indivisibility, verifiable ownership, and provenance, has paved the way for innovative projects spanning art, gaming, virtual worlds, education, and more.

The most used standards for the creation of NFTs on the Ethereum blockchain network are Ethereum's ERC-721 and ERC-1155. The ERC-721 has a standard that is used for non-fungible tokens, which ensures that each of the tokens used is unique. On the other hand, ERC-1155 is used for both fungible and non-fungible tokens even on the same contract, which offers greater efficiency and flexibility (Kumar Jha et al., 2023).

Moreover, many individuals, companies, and brands are creating their own NFT projects to enhance engagement, generate new revenue streams, and leverage the unique properties of NFTs for marketing and innovation purposes. These projects often aim to provide exclusive experiences, verify ownership of digital assets, and tap into the growing NFT market. By creating limited-edition digital collectibles, unique virtual merchandise, and exclusive access tokens, they can foster a closer connection with their audience and build brand loyalty. Additionally, these projects allow

creators and businesses to monetize their digital presence in new ways, moving beyond traditional models and exploring innovative approaches to digital ownership and content distribution. This trend highlights the versatility and potential of NFTs and underscores the broader shift toward digital transformation across various industries.

This work focuses on analyzing the application of NFT projects within the fashion industry, showcasing how this technology is transforming traditional practices and opening new opportunities for innovation.

### *Fashion*

Luxury fashion brands are leveraging the properties of unique ownership, permanence, and royalty acquisition enabled by NFTs. Many fashion brands use their online presence to widen their reach but remain economically inaccessible to the masses, which sustains the demand for counterfeit and replicated articles. Businesses are losing large sums of money to counterfeit items of their brands, the effects of which can be mitigated, if not eradicated, with the use of NFTs.

NFTs in fashion often serve as digital representations of physical items or entirely digital garments that can be used in virtual environments. These tokens ensure authenticity and exclusivity, allowing brands to offer limited-edition virtual merchandise that cannot be easily replicated. This approach combats counterfeiting and opens up new revenue streams by selling digital fashion items.

The Fabricant is a digital fashion house that creates virtual clothing, accessories, and experiences. They produce 3D digital fashion items that can be bought, sold, and worn in virtual environments, such as gaming platforms or social media. Their collaboration with brands like Adidas demonstrates the growing interest in digital-only fashion, where users can purchase unique, blockchain-verified clothing items without any physical counterpart (Huggard & Särämäkari, 2023).

RTFKT Studios is a cutting-edge virtual fashion brand that combines NFTs with augmented reality (AR) to create digital

sneakers and apparel. Their products often feature intricate designs that can be showcased in virtual worlds and augmented reality environments (Marquês et al., 2023).

DRESSX is a startup that focuses on digital-only fashion, allowing users to buy and wear digital clothing in photos and videos on social media. The garments are designed by top fashion designers and are available as NFTs, ensuring that each piece is unique and owned by a single user (Syailendra et al., 2022).

Jacob & Co., a luxury goods brand, has explored the NFT space by auctioning a digital version of their high-end watches. This digital asset provides exclusive ownership of a virtual watch, blending luxury fashion with digital innovation (Rehman et al., 2021).

#### *Marketplaces*

NFT marketplaces are the backbone of the NFT ecosystem, providing the necessary infrastructure for creating, trading, and managing NFTs. These platforms offer various tools for artists, creators, and collectors, ensuring a vibrant and dynamic marketplace for digital assets:

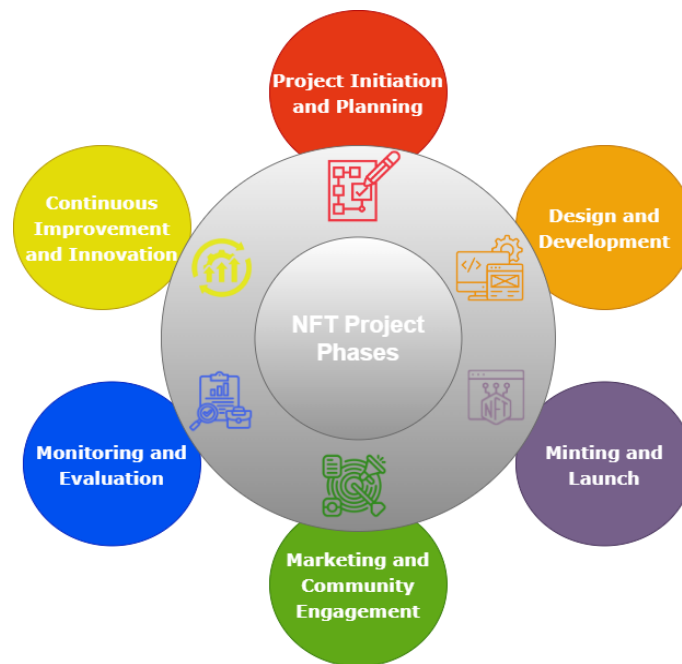
- **OpenSea.** OpenSea is the largest and most popular NFT marketplace, offering a vast range of digital assets, including art, collectibles, virtual real estate, and more. It supports multiple blockchains and provides tools for creators to mint and sell their NFTs easily. Its role in the NFT ecosystem is pivotal, enabling the widespread adoption and trading of NFTs (Savia & Troka, 2023).

- **Rarible.** Rarible is a decentralized NFT marketplace that allows users to create, buy, and sell digital assets. It emphasizes community governance, enabling users to participate in decision-making through its governance token, RARI. Rarible supports various types of digital content, including art, music, and virtual items, fostering a diverse and vibrant NFT ecosystem. The platform's focus on decentralization and community engagement highlights the evolving nature of digital marketplaces (Barrington, 2022).

### **3. METHODOLOGY FOR THE DEVELOPMENT AND MANAGEMENT OF NFT PROJECTS**

Non-fungible tokens have rapidly expanded as a new form of digital ownership and expression, which opens new possibilities and concerns for project managers. This paper proposes a methodology for the development and management of NFT projects in the following phases shown in Figure 1.

Thus, as both a conceptual and a guide to practical implementation, it provides project managers with tools to successfully share and manage NFT projects in a rapidly changing environment. Usually, the methodology best suited for the specific characteristics of NFTs and blockchain technology combines principles used in traditional project management alongside some specialized practices (Çakmak et al., 2022; Patel, 2022).



**Figure 1:** Methodology of development and management of NFT projects

### 3.1. NFT project initiation and planning

The first phase in managing NFT projects involves defining the project's scope properly, the objectives that need to be completed, and the expected deliverables. This step also includes identifying the proper niche of the target audience, usually by determining the types of digital assets that will be tokenized. Thorough market research needs to be conducted alongside a feasibility study. Once these essentials are achieved, there lies a need to understand the landscape itself and the potential demand (Dowling, 2022). Intellectual property rights and other regulatory compliances must be checked as a part of legal considerations that need to be fulfilled.

The areas of who, what, when, where, and why involving strategic planning should be exhaustively considered to avoid leaving any essentials of the project (Dhruv, 2022). This involves grasping the target group, what NFTs to make when to go live with them, what platform to use, and the primary reason and drive for doing this. Comprehensive treatment of these factors will ensure that the project is strategically fitted for success.

If the planning phase is to incorporate Scrum sprints, then this leads to flexibility and effectiveness regarding planning for the project. Freewheeling allows the project team

to be flexible in situations and monitor the progress since it is done in cycles. The daily meetings and the retrospective meetings from Scrum guarantee that all the client's goals are clearly understood by all the participants, and issues are resolved quickly. This kind of structure is helpful and is relatively more suitable for differently developed and rapidly changing projects such as NFTs.

There is a tradition of using Agile methods, especially Scrum, in the industry now. Retrospective is an essential tool in process enhancement, of which 64% of the organizations use Scrum or its derivatives, and 80% have retrospectives (Neto, 2019). Retrospectives begin with facts, which help to ground the processes arising from the retrospective in fact (Dhruv, 2022). It is important to stipulate that the Scrum framework involves empiricism, which means that decisions are made based on experience and valuable data.

The choice of blockchain platform plays a significant role in shaping the success of an NFT project by influencing factors such as transaction costs, scalability, and security. Transaction fees, often referred to as "gas fees", vary across platforms, with Ethereum, for instance, typically incurring higher costs compared to alternatives like Polygon or Solana. Scalability is also crucial, as some

platforms handle a higher volume of transactions more efficiently, which becomes increasingly important as NFT projects grow. Security is paramount in preventing fraud and protecting both creators and buyers, with established platforms often offering more robust security measures. Criteria for selecting a blockchain platform include transaction speed, fee structure, security features, and community support, all of which can have long-term implications for an NFT project's success (Kugler, 2021).

### 3.2. Design and development of an NFT project

In the second phase, the focus is shifted toward creating digital assets and developing smart contracts. A smart contract is an application run in a distributed environment by the miners of the blockchain network (De Filippi et al., 2021). Such contracts receive parameters through the current blockchain transactions and use a deterministic function to emit a response that could modify the contract's state or create a new blockchain transaction. Smart contracts are important for the functioning of the NFT project since they regulate its work and the relationships between participants. They are constructed based on the task's nature and functionality on a certain platform to make sure that there are no vulnerabilities and that the contract is as productive as possible.

There are three main types of smart contracts: Smart legal contract which replicates conventional legal agreements by executing predetermined conditions and self-policing through the use of the blockchain system; Decentralized Autonomous Organizations (DAOs) which are members' organizations that operate based on smart contracts and can make decisions without the input of management; and Application Logic Contracts (ALCs) which provide for secure automated interaction between devices especially in blockchain systems such as the IoT system (Tyagi et al., 2022).

Nonetheless, smart contracts are not devoid of threats which owe their existence to Solidity programming, EVM, and Ethereum Blockchain design (Tyagi et al., 2022). In general, a programming language may have limitations, and in the case of Solidity, it can

face problems with insufficiency of authorization, external calls, or input validation, which makes it vulnerable. Due to EVM, modification of deployed contracts is impossible, and data storage costs are increased. Furthermore, although blockchain is distributed, most contracts integrate centralized services like AWS. Finally, while Ethereum has the advantage of being decentralized, it has problems such as 51% attack vulnerability, and at best it can only handle thirty transactions every second.

To minimize these considerations, the following should be implemented as best practices. It is good practice for developers to perform formal code verification and depend on trustworthy libraries, like OpenZeppelin, for contract templates (Kondo et al., 2020). Further, there are practices that help to mitigate risk; these include, more frequent audits, testing, and the practice of secure coding. Improved access control is also another basic way of tackling vulnerability such as reentrancy attacks. Thus, by applying these practices to developers, smart contracts will be secure and efficient with the NFT project immune to possible failures or hacks.

The crucial step in this phase is choosing the right blockchain platform, with options such as Ethereum, Binance Smart Chain, and others available (Ante, 2021). From the developer's side, the design needs to have a user-friendly interface, and essential features like wallet support and marketplace need to be part of the functionalities. This phase also involves testing all features to ensure that the smart contracts are secure and functional (Nadini et al., 2021).

Creating an NFT collection involves several key steps that go beyond just collaborating with artists. After selecting artists whose work aligns with the project's concept, the next phase involves using digital tools to bring these creative ideas to life. Artists and developers utilize software like Adobe Photoshop, Illustrator, or specialized platforms like Blender for 3D modeling, to design the digital assets that will make up the NFT collection. These tools allow for the precise creation and manipulation of digital art, ensuring that each piece is unique and visually appealing (Doe & Smith, 2023).



Once the artwork is completed, developers integrate it into the blockchain by minting the NFTs. This process involves converting the digital art into a blockchain asset, typically using platforms like OpenSea, Rarible, or custom-built smart contracts on Ethereum or other blockchains. During this process, metadata is defined and attached to each NFT, adding context such as the artwork's title, description, and rarity attributes. This metadata is crucial for distinguishing each NFT within a collection, making it easier for collectors to understand the value and uniqueness of each piece (Barrington, 2022).

Securing and functionality of smart contracts present a noteworthy task (Wang et al., 2021) in this phase. Measures must be put in place to ensure that weak areas are tested frequently enough to notify the pinpointing of such problems. This comprises component testing to confirm that each unit, or piece of the system, performs right and system integration testing to spot deficiencies in coherent operation of the parts. Through the beta users, it is possible to get useful feedback on the final product's overall usability (Alshater et al., 2024).

Scalability and the performance of the system on which the application is to be implemented (Bhujel & Rahulamathavan, 2022) are also considered a priority during the designing and coding phase as well. The NFT project must scale to promote the adoption of more users and operate more transactions within the platform that should not affect its performance and user satisfaction.

### 3.3. Minting and launch

The next phase involves minting, which is described as the process of creating NFTs on the blockchain. This step is primarily focused on the proper deployment of the smart contract and recording of the digital assets. The NFTs that are minted can be listed on various marketplaces, such as OpenSea, Foundation, and others, for sale or auction. A well-coordinated launch strategy is essential to generate good initial sales, with pricing strategies and promotional efforts playing a critical role in determining success (Dowling, 2022).

Minting verifies the content as original, uploads exclusive physical assets to digital platforms, and authenticates ownership (Bobek, 2023). When an NFT is created, the hash of the associated content is stored on the blockchain, creating an unalterable and easily auditable record. This ensures the authenticity of the assets, preventing piracy, theft, or destruction. A successful minting process involves several key players: sellers, buyers, and the platforms that facilitate NFT trades (Bobek, 2023). Payments on NFT marketplaces are typically conducted through digital wallets, which allow users to purchase NFTs using cryptocurrencies. These digital wallets, such as MetaMask or Coinbase Wallet, store the user's cryptocurrency and provide a secure way to execute transactions on blockchain platforms. Smart contracts set ownership conditions and royalty rates, enabling consumers interested in the uniqueness and value of these products to participate in auctions or direct purchases. Transactions are facilitated by platforms that provide the necessary environment for executing various trades.

### 3.4. Marketing and community engagement

Effective marketing and community engagement are paramount for the success of any NFT project. Leveraging social media, creating partnerships with influencers, and using platforms like Discord, Telegram, and X to engage with the community are some of the crucial strategies. A large and active community helps drive ongoing interest, fostering loyalty and increasing sales (Regner et al., 2019). Engagement with the community that is continuous, using updates, events, and some special content keeps the community invested in the project (Borri et al., 2022).

Brand owners can also use the participation of their customers in the brand's NFT communities. Discord's highly engaging part is that, unlike other social media platforms, users interact like real-life interactions and friendships. Unlike all the other social media sites that are relatively formal and come with a touch of corporate-like feel, Discord, Reddit, or Telegram take the form of brand communication authenticity to the next level (Colicev, 2022). Brands can increase the probability of the post being discovered by

others by scheduling daily activities, coming up with interesting content, or even considering inviting users to some events. They can leverage NFT communities as the direct channel to the consumer, which shifts the dynamics of social media marketing and customer acquisition strategies.

### 3.5. Monitoring and evaluation

After the successful launch, monitoring and evaluation are needed to ensure that the project is meeting the expectations. Meticulous tracking of the data, the feedback provided by the user, and market trends are all included in this step. If the project wants to keep its relevance and value, regular updates and enhancements are vital (Regner et al., 2019). Risk management practices are needed to identify and mitigate potential issues, such as technological vulnerabilities or the volatility of the market itself. These practices are crucial for long-term success (Q. Wang et al., 2021).

Milestones for the NFT project should be provided since they will help to create an idea of what is expected and may entail the establishment of KPIs (Dalić & Petrinović, 2022). KPIs are trending rate, conversion rate, number of transactions per day/at the end of the month, and growth of active users.

Risk management is also integrated as part of monitoring and evaluation. It is the process of knowing the likely risks and planning on how to deal with them (Regner et al., 2019). Since technological risks belong among threats that can be faced with effective security measures and timely audits, such as market risk, which includes price risk, can be neutralized through the introduction of a product portfolio and the stocking of cash reserves.

### 3.6. Continuous improvement and innovation

The last phase is necessary because the NFT space is rapidly evolving, and project managers need to stay updated with the latest market trends. Regularly improving the project with new features, providing security enhancements, and adding new functionalities is essential. Innovating and staying competitive can help sustain the project's

growth and overall success (Nadini et al., 2021).

Improvement is the process of evaluation of the project's performance through results and user feedback to optimize processes and incorporate new ideas and technology. The concept of agile implementation allows for fast cycles and improvements that can be adapted to meet the market needs. Another popular function is that innovation, due to the search for new technologies such as artificial intelligence and blockchain, as well as cross-functional collaboration, will help the project stand out amid serious competition. Marketing research and analysis of the market and the competition are conducted to identify trends and opportunities. NFT projects remain in tune with the latest developments and do not get left behind and will also be able to chart out new trends and directions for the new frontier. It is self-evidently crucial to point out that such commitment is patently necessary for generating constant improvement and sustainable development.

### 3.7 Agile methodologies in NFT project management

Agile methodologies are frameworks used in project management to enhance flexibility and adaptability, particularly in environments with high uncertainty. Some of the most recognized agile methodologies include Scrum, Kanban, Extreme Programming (XP), and the Adaptive Project Framework (APF) (Dalić & Petrinović, 2022; Çakmak et al., 2022). Each of these methodologies offers distinct approaches to managing projects, with Scrum being particularly well-suited for complex, fast-paced projects like those in the NFT space.

SCRUM is an agile methodology highly suited for managing NFT projects due to its iterative and incremental nature (Perera et al., 2022). This approach provides the flexibility and adaptability necessary in the rapidly evolving domains of blockchain technology and digital assets (Patel, 2022). SCRUM's framework supports the dynamic needs of NFT projects by facilitating continuous improvement and rapid adaptation.

SCRUM's framework encompasses specific roles, events, and artifacts designed to ensure the incremental delivery of high-quality

products. The key roles in SCRUM are (Sachdeva, 2016):

1. Product Owner, who is responsible for defining the project's features and vision;
2. Scrum Master, who ensures adherence to SCRUM principles and facilitates the process;
3. Development Team, which typically includes blockchain developers, smart contract engineers, and graphic designers.

The SCRUM process involves several key events that help maintain progress and quality. Sprint Planning sessions are used to define the scope of work for each sprint, allowing the team to prioritize and select tasks from the Product Backlog. Daily Stand-ups facilitate ongoing communication, helping team members discuss their progress and resolve any issues that arise. At the end of each sprint, Sprint Reviews offer a platform for presenting completed work to stakeholders, enabling the collection of feedback for future enhancements. Sprint Retrospectives are reflective meetings where the team assesses their process, identifying both strengths and areas for improvement. These events are crucial for maintaining alignment with project goals and ensuring continuous progress.

SCRUM artifacts play a critical role in managing the project. The Product Backlog is a prioritized list of desired features and improvements. The Sprint Backlog is a subset of the Product Backlog, outlining the tasks the team commits to completing during the sprint. The Increment represents the sum of all completed Product Backlog items from the current and previous sprints (Rubin, 2012). These artifacts ensure transparency and accountability, allowing the team to track progress effectively and make informed decisions.

Applying SCRUM to NFT project development is highly beneficial due to its structured yet adaptable approach. During Sprint Planning, the team defines the work scope, such as creating specific NFT assets or developing smart contracts. This approach ensures that each sprint is focused and productive (Bhujel & Rahulamathavan, 2022). Daily Stand-ups are essential for maintaining

alignment among team members and addressing issues promptly, which aids in early identification and resolution of risks.

Sprint Reviews, conducted at the end of each sprint, are crucial for gathering stakeholder feedback. This feedback is vital for refining the project to better meet user expectations and adapt to market demands. Feedback loops play a significant role in ensuring that the final product remains relevant and aligns with the evolving needs of the market. Sprint Retrospectives support continuous improvement by allowing the team to reflect on their performance and processes, which enhances efficiency and project quality over time (Produção et al., 2022).

Incorporating Scrum into NFT project development helps manage tasks and deadlines effectively while maintaining the flexibility needed to adapt to new challenges and opportunities. This adaptability is crucial in the rapidly evolving NFT market, allowing teams to stay responsive to emerging trends and demands.

The development of NFT collections can be effectively managed using SCRUM. This focused approach ensures that each aspect of the NFT collection is given adequate attention and resources. Employing SCRUM in NFT collection development allows the project to stay on track while adapting to feedback and new developments. This iterative approach facilitates the creation of high-quality NFT collections that meet market demands and user expectations (Bhujel & Rahulamathavan, 2022).

SCRUM also supports the development of platforms for trading NFTs. The team focuses on creating an intuitive and user-friendly interface, developing backend infrastructure to support NFT transactions, and implementing robust security measures to protect user data and digital assets (Bhujel & Rahulamathavan, 2022). Regular testing and feedback loops are employed to refine the platform, ensuring it meets user needs and industry standards (Çakmak et al., 2022).



#### 4. DEVELOPMENT AND MANAGEMENT OF AN NFT FASHION PROJECT

The integration of NFTs within the fashion industry represents a groundbreaking opportunity to address issues of authenticity, ownership, and sustainability in the digital realm. By tokenizing digital fashion assets, the aim is to empower creators with a novel way to showcase and monetize their designs, while offering consumers a unique and verifiable ownership experience. This chapter delves into the development journey of an NFT Fashion Platform where digital fashion creations are authenticated, owned, and traded using blockchain technology. Exploring the convergence of creativity, blockchain, and consumer engagement, we uncover the potential impact of NFTs on reshaping traditional fashion paradigms and fostering new forms of artistic expression in the digital era.

This paper proposes a prototype of an NFT fashion project that follows phases of the proposed methodology.

##### 4.1 Project initiation and planning

The primary goal of this project is to create an NFT fashion marketplace that will bring together people who appreciate fashionable clothing, young designers who work individually, and people interested in NFT technology. Fashion products will be sold as limited-edition NFTs for use in the Metaverse, video games, or traditional NFTs. In using the paradigm of the React framework, the platform shall afford intuitive means for designers to sell their fashion collections as NFTs. Additionally, a customer-to-customer (C2C) smart contract will be implemented using Solidity, enabling secure buying and selling of NFT fashion items. Integration with a digital wallet will further enhance the user experience, allowing for seamless management of NFT collections. Transactions will be conducted using ETH on Testnet Sepolia, ensuring a secure and efficient platform for the fashion community.

#### 4.2 Design and development

##### *Modeling NFT fashion collections*

The decentralized scene of NFT fashions represents a bridge between art and innovation between the natural and meta realms, which are seemingly infinite in terms of prospects. At the heart of this development is Clo3D, a highly specialized program for the modeling and rendering of 3D digital garments. Using it, designers can escape such manual drawing as it looks decent, making an approximate simulation of fabrics. Clo3D works with virtual mannequins, enables changing fabrics' textures (Huang & Huang, 2022), and is non-problematic when integrated with digital stores. Below are some digital wearables developed through Clo3D that belong to NFT collections (Figure 2). The CryptoChic Collection is an example of an NFT collection emphasizing elegance and originality.



**Figure 2:** Metallic pink dress on avatar

##### *Development of an NFT fashion platform*

GlamChain is a platform that unites fashion lovers, independent designers, and NFT lovers: they can get together in a community. Unlike conventional markets, it contains fashion products as assets in the form of NFTs for the Metaverse, virtual reality, or exchange. This makes the tokens unique and one of a kind, thus preserving the exclusivity of the fashion owned by the users. The platform aims to create conditions for and promote user interaction.

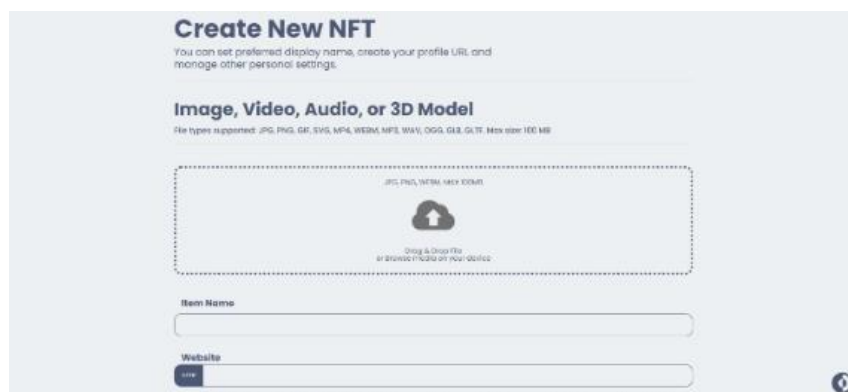
For platform development, React is the frontend technology that gives the interface a more contemporary and efficient feel (Thakkat, 2020). Backend smart contracts are coded in Solidity to ensure safe transactions accrue for every client and user. Registrants provide their name, email, and password; they log in to the site to use all functionalities. The platform features a brief welcome pop-up and a convenient top menu, allowing users to view collections, learn about the brand's history, and find contact information.

Found on the front page is an NFT slider that presents detailed information on each NFT for the primary purpose of sales promotion. This information includes the creator, the collection to which the NFT belongs, and the price,

among other things. Beneath the slider is a section where users may find the most recent NFT pieces and collections. If one clicks on an item, information about the creator and articles related to the category is available.

### 4.3 Minting and launch

To mint and launch an NFT collection, users typically follow a specific process that involves creating digital assets, connecting to a blockchain wallet, and listing the NFTs on a marketplace. Figure 3 illustrates the "Create New NFT" page, where users can upload various types of digital files, such as images, videos, audio, or 3D models. After uploading, users must enter specific details like the item name and website link before proceeding.



**Figure 3:** Create a New NFT page

This page also includes options for integrating with a digital wallet, which is essential for managing ownership and transactions of the NFTs. Once the NFT collection is successfully minted, it will be displayed on the selected marketplace, where it can be traded or showcased to potential buyers. The seamless integration with the wallet and the user-friendly interface is crucial for ensuring that the NFT collection is accessible and appealing to a broad audience.

The featured page has a list of NFTs that encompasses all the NFTs that have been uploaded for users to check on. Here, all the users can continue their acquaintance with various NFTs, select the desired ones, and make purchases. On this site, one can click on the My Items option, which displays all the owned NFTs. This page offers users an aesthetic way to catalog their collections and

ensure they are current on what is available digitally.

### 4.4 Marketing and community engagement

To effectively promote the collection and platform on social media, it's essential to target specific user groups interested in NFTs and digital art. By using platforms like Instagram, Twitter, and TikTok, you can create visually appealing content that attracts potential buyers, as demonstrated in the GlamChain Instagram Feed. Regular posts, collaborations with influencers, and the use of relevant hashtags and paid ads will help increase platform visibility and drive NFT sales. Engaging with the community through comments, polls, and giveaways can also boost interaction and user loyalty.

#### 4.5 Monitoring and evaluation

The platform's performance and user engagement are continuously monitored using key performance indicators (KPIs) such as traffic, conversion rates, and user feedback. This data-driven approach allows for the identification of trends, challenges, and areas for improvement. By applying the SCRUM methodology, the team holds regular review meetings to assess progress and make necessary adjustments to ensure the platform's success.

#### 4.6 Continuous improvement and innovation

To maintain a competitive edge and adapt to changing market demands, the platform undergoes continuous improvement through regular updates and feature enhancements. The SCRUM framework fosters innovation by encouraging iterative development and incorporating user feedback into each sprint. This agile approach ensures that the platform evolves in alignment with user needs and industry trends.

### 5. CONCLUSION

This paper's primary scientific contribution lies in the proposed methodology for managing NFT projects and the demonstration of its application through a prototype project. The methodology was carefully developed, drawing from established project management practices and tools, while also addressing the unique characteristics of digital assets and blockchain technologies. The major stages identified in this methodology include Project Initiation and Planning, Design and Development, Minting and Launch, Marketing and Community Engagement, Monitoring and Evaluation, and Continuous Improvement and Innovation. The proposed methodology is further validated through the development of a prototype NFT project within the fashion industry, showcasing its practical application and effectiveness.

The organizational model tailored for fashion NFT projects and the specific challenges of this industry are also discussed, providing a relevant framework for future work. It is essential to monitor market trends, embrace

innovation, and strategically adapt to maintain competitiveness and achieve long-term success in NFT projects. The continued development of new technologies, strategies, and community collaboration will further enhance the sustainable growth and value of NFTs in this evolving field.

### REFERENCES

- Alshater, M., Nasrallah, N., Khoury, R., & Joshupura, M. (2024). Deciphering the world of NFTs: A scholarly review of trends, challenges, and opportunities. *Electronic Commerce Research*. <https://doi.org/10.1007/s10660-024-09881-y>
- Ante, L. (2021). *Non-fungible Token (NFT) Markets on the Ethereum Blockchain: Temporal Development, Cointegration and Interrelations* (SSRN Scholarly Paper 3904683). <https://doi.org/10.2139/ssrn.3904683>
- Ante, L. (2022). The Non-Fungible Token (NFT) Market and Its Relationship with Bitcoin and Ethereum. *FinTech*, 1(3), 216–224. <https://doi.org/10.3390/fintech1030017>
- Barrington, S. (2022). *The Role of Metadata in Non-Fungible Tokens: Marketplace Analysis and Collection Organization* (arXiv:2209.14395). arXiv. <https://doi.org/10.48550/arXiv.2209.14395>
- Bhujel, S., & Rahulamathavan, Y. (2022). A Survey: Security, Transparency, and Scalability Issues of NFT's and Its Marketplaces. *Sensors*, 22(22), Article 22. <https://doi.org/10.3390/s22228833>
- Bobek, H. (2023). To Mint or Not to Mint: Non-fungible Tokens and the Right of Publicity. *FORDHAM LAW REVIEW*, 92.
- Borri, N., Liu, Y., & Tsyvinski, A. (2022). *The Economics of Non-Fungible Tokens* (SSRN Scholarly Paper 4052045). <https://doi.org/10.2139/ssrn.4052045>
- Çakmak, A., Özcan, B., Özdem, M., Bekin, F., Kırtekin, K., Aydın, Ş., & Ayaz, E. (2022). Blockchain Based Project Management. *2022 3rd International Informatics and Software Engineering Conference (IISEC)*, 1–6.

- <https://doi.org/10.1109/IIESEC56263.2022.9998306>
- Colicev, A. (2022). How Can Non-Fungible Tokens bring value to brands. *International Journal of Research in Marketing*.  
<https://doi.org/10.1016/j.ijresmar.2022.07.003>
- Dalić, B., & Petrinović, N. (2022). *TTokens Event Management NFT Company*.
- Das, D., Bose, P., Ruaro, N., Kruegel, C., & Vigna, G. (2022). Understanding Security Issues in the NFT Ecosystem. *Proceedings of the 2022 ACM SIGSAC Conference on Computer and Communications Security*, 667–681.  
<https://doi.org/10.1145/3548606.3559342>
- De Filippi, P., Wray, C., & Sileno, G. (2021). Smart contracts. *Internet Policy Review*, 10(2).  
<https://doi.org/10.14763/2021.2.1549>
- Dhruv, S. (2022). Best design practices & strategy to launch your own NFT project. *Trends in Computer Science and Information Technology*, 7(1), 007–009.  
<https://doi.org/10.17352/tcsit.000045>
- Doe, J., & Smith, A. (2023). Digital Tools for NFT Creation. *Journal of Digital Art*, 10(2), 45–58.
- Dowling, M. (2022). Fertile LAND: Pricing non-fungible tokens. *Finance Research Letters*, 44(C).  
<https://ideas.repec.org/a/eee/finlet/v44y2022ics154461232100177x.html>
- Huggard, E., & Särämäkari, N. (2023). How digital-only fashion brands are creating more participatory models of fashion co-design. *Fashion, Style & Popular Culture*, 10(4), 583–600.  
[https://doi.org/10.1386/fspc\\_00176\\_1](https://doi.org/10.1386/fspc_00176_1)
- Kondo, M., Oliva, G. A., Jiang, Z. M., Hassan, A. E., & Mizuno, O. (2020). Code cloning in smart contracts: a case study on verified contracts from the ethereum blockchain platform. *Empirical Software Engineering*, 25, 4617–4675.
- Kumar Jha, A., Anand, A., & Chauhan, D. (2023). *PROPOSED IMPROVEMENTS TO THE ERC-1155 STANDARD FOR NFTs*.
- Kugler, L. (2021). Non-fungible tokens and the future of art. *Communications of the ACM*, 64(9), 19–20.  
<https://dl.acm.org/doi/10.1145/3474355>.
- Marquês, C., Ferreira, A. M., & Oliveira, F. (2023). Modular Design and Technology for Diversity and a More Sustainable Fashion. The RTFKT X Nike and CLO Case Studies. In N. Martins & D. Brandão (Eds.), *Advances in Design and Digital Communication III* (pp. 94–103). Springer Nature Switzerland.  
[https://doi.org/10.1007/978-3-031-20364-0\\_9](https://doi.org/10.1007/978-3-031-20364-0_9)
- Nadini, M., Alessandretti, L., Di Giacinto, F., Martino, M., Aiello, L. M., & Baronchelli, A. (2021). Mapping the NFT revolution: Market trends, trade networks, and visual features. *Scientific Reports*, 11(1), 20902.  
<https://doi.org/10.1038/s41598-021-00053-8>
- Neto, A. (2019, May 9). 13th Annual State Of Agile Report. *Medium*.  
<https://adolfont.medium.com/13th-annual-state-of-agile-report-9768100edebc>
- Patel, V. (2022). *How to build trust in NFT communities: An analysis of strategies to build trust and commitment in NFT projects*.  
<https://mospace.umsystem.edu/xmlui/handle/10355/90829>
- Perera, S., Eadie, R., Nanayakkara, S., & Weerasuriya, G. T. (2022). IT Project Management 4.0: Trends and Future Directions. In *Managing Information Technology Projects: Building a Body of Knowledge in IT Project Management* (pp. 482–518).
- Produção, G., Ferreira, L., & Nobre, F. (2022). Agile project management under the perspective of dynamic capabilities. *Gestão & Produção*, 29.  
<https://doi.org/10.1590/1806-9649-2022v29e3122>
- Regner, F., Schweizer, A., & Urbach, N. (2019). *NFTs in Practice – Non-Fungible Tokens as Core Component of a Blockchain-based Event Ticketing Application*.
- Rehman, W., Zainab, H., Imran, J., & Bawany, N. (2021). *NFTs: Applications and Challenges*.

- <https://doi.org/10.1109/ACIT53391.2021.9677260>
- Rubin, K. S. (2012). *Essential Scrum: A Practical Guide to the Most Popular Agile Process*. Addison-Wesley.
- Sachdeva, S. (2016). Scrum Methodology. *International Journal Of Engineering And Computer Science*. <https://doi.org/10.18535/ijecs/v5i6.11>
- Savia, M., & Troka, L. (2023). Minting NFTs on OpenSea Marketplace. *International Journal of Art, Design, and Metaverse*, 1(1-February), Article 1-February.
- Syailendra, G. M., Larso, D., & Pambudi, N. F. (2022). Prospecting Consumers' Interest for Fashion NFT in Indonesia. *International Journal of Business and Technology Management*, 4(3), Article 3.
- Tyagi, S., Gogireddy, C., Varikuppala, C., & Nalabothu, K. (2022, March). Study of smart contracts. In *Proceedings of the international conference on innovative computing & communication (ICICC)*.
- Wang, Q., Li, R., Wang, Q., & Chen, S. (2021). *Non-Fungible Token (NFT): Overview, Evaluation, Opportunities and Challenges* (arXiv:2105.07447). arXiv. <https://doi.org/10.48550/arXiv.2105.07447>