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# mQuark

White Paper v.0.1.0

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“We believe in a future where businesses, metaverses and blockchains, through NFTs, interconnect, interoperate and augment each other to create virtual objects of increasing value, functionality and reusability.”

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# 1. INTRODUCTION

Virtual assets known as Non-fungible Tokens (NFTs), along with Blockchain and Metaverse concepts, continue to grow in popularity today and are traded for incredible values. But today, NFTs have limited scope and utility beyond being a proof-of-ownership contract and being traded as a collectible.

NFTs still lay in the realm of early adopters. In order to jump ‘The Chasm’ into the Early & Late Majority of users, we need businesses, metaverse developers AND their customers bought-into the technology and realising the mutual benefit of their trading and usage. The functionality of NFTs need to evolve beyond just a digital identifier used to certify authenticity and ownership in a single scope, to an asset that can be reused and reimaged across multiple worlds.

We believe in a future where businesses, organisations, non-profits, metaverses and customers, through NFTs and blockchains, interconnect, interoperate and augment each other to create virtual objects of increasing value, functionality and reusability.

## 1.1 History of NFTs

The idea that gave rise to NFTs was conceived long before Ethereum existed when Meni Rosenfield published a paper in 2012 outlining the "Colored Coins" concept for the Bitcoin blockchain. The purpose of coloured coins was to define a family of techniques for recording and managing physical assets to verify ownership on the blockchain. They are similar to conventional Bitcoins but have an additional "token" element that specifies their usage, making them distinct and separated. The Colored Coins concept was never realised due to Bitcoin’s constraints, but it served as the starting point for the experiments that eventually led to the development of NFTs.

However, it's crucial to remember that the Bitcoin blockchain was never meant to serve as a database for tokens indicating asset ownership, which sparked the significant migration of NFTs to the Ethereum blockchain.

A set of token specifications that permitted developers to create tokens supported the significant transfer of NFTs to Ethereum. To help developers build, issue, and deploy new tokens by the underlying blockchain technology, the token standard—a subset of the intelligent contract standard—was added. Following the success of the Rare Pepes, two software developers, John Watkinson and Matt Hall created their generative series of NFTs on the Ethereum blockchain under the name CryptoPunks. Some of the first NFTs to be built and initially made available for free were CryptoPunks. The experimental project, restricted to 10,000 pieces and featured unique characters, was influenced by cyberpunk and London punk culture.

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The Vancouver-based startup studio Axiom Zen unveiled CryptoKitties during the biggest hackathon for the Ethereum ecosystem in history. Following the enormous popularity of CryptoKitties, NFTS gaming started to take off and advance, with more and more people being aware of it.

The NFT gaming and metaverse projects were at the forefront, and Decentraland (MANA), a decentralised VR platform on the Ethereum blockchain, was the first to make headway in this field. An open-world gaming environment called Decentraland lets users explore, play games, create, gather stuff, and more. Everything you find, earn and construct there is yours to keep on the blockchain.

It wasn't long before more Enjin Coin (ENJ)-based platforms and games entered the market, enabling developers to tokenise their in-game objects on Ethereum and give them a real-world value. Axie Infinity (AXS), blockchain-based commerce and combat game partially owned and run by its players, has also come into being.

2021 was dubbed the "Year of the NFT," as both production and demand for NFTs skyrocketed.

One of the leading causes of this surge was the profound shifts within the art market and the entire industry when renowned auction houses, namely Christie's and Sotheby's, started selling NFT paintings and expanding their online auctions. As a result, Christie's sold Beeple's Everyday: the First 5000 Days NFT for a record-breaking \$69 million. An enormous transaction from such a famous auction house served as important NFT market validation.

Other blockchains getting involved and beginning their own NFTs was another knock-on consequence of the famous Christie's auction, in addition to the spike in demand for NFTs. These comprised the blockchains Cardano, Solano, Tezos, and Flow, among others. Some new standards were devised to guarantee the validity and originality of the digital assets created with these more recent NFT platforms.

The growth in the market for NFTs has been remarkable. A year ago, the monthly sales volume of NFTs was around \$59 million. In January this year, OpenSea alone surpassed \$3.5 billion in NFT sales. Yet most of these sales are of assets that have limited or single scope usage - like a cyberpunk, bored ape or art piece.

## 1.2 Perceived Value

The *Perceived Value* refers to the perspective or opinion of the customer towards an NFT often influenced by how it met the needs, expectations, quality and/or desirability criteria of that customer versus the cost relative to other similar NFTs. Though here, we focus on the *needs*, often referred to as the *Perceived Utility Value* which can be broken down into 5 categories:

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- **Form utility** - how appealing it is to the customers at first sight. Here the form of current NFTs is limited. The collectable or art piece NFT really only has value as an immutable proof-of-ownership and e-commerce engine (in terms of automatic royalty payments, trading, etc) in one form type whether it's a 2D image, 3D model, music file, video, etc. Its form cannot be reimaged in various worlds or metaverses, which is what we'll address.
  - **Time utility** - how fast can customers access and use it. This depends on how good the UX is in each of the metaverses that adopt and utilise NFTs, as well as the capabilities of the blockchain wallets (like Metamask). Here is where users with existing NFTs can immediately bring them into future metaverses by just having them in their wallet.
  - **Place utility** - how convenient it is for customers to purchase and use them (and where they can be sold). Here we will explore how a new type of NFT can be used in multiple places, by businesses and metaverses alike, and how this will affect the perceived value.
  - **Task utility** - how the customer perceives the saving of energy, time and financial resources when completing a certain task or process. Here we will explore how onboarding into a new metaverse could become smoother and more rewarding if the customer already owns usable assets.
  - **Possession utility** - how easy customers find it to possess an NFT in terms of where it can be bought, scarcity and how easy it is to trade.

The *Perceived Utility Value* of a traditional NFT is limited, and thus the adoption rate is being stunted. A new type of NFT is needed in order to drive adoption beyond just the early tech savvy adopters.

### 1.3 Limitations and Challenges

Today, the number of users of computer or console games and the number of games are increasing daily. When users earn, upgrade an item, finish a game or switch to a new one, their achievements and possessions cannot go beyond the limits of that game. Similar in-game items are purchased, then re-purchased again for each online game.

Even in Metaverses integrated into Blockchains, in-game items used as NFTs stay within the boundaries of just that world. This is because there is no knowledge of what that NFT is, or how to interpret it, in other metaverses. That is, it is not automatically possible for a spaceship NFT used in Metaverse A to detect it in Metaverse B. Metaverse B developers need to manually embed their code to recognise that NFT. Because no interoperability standard or protocol has been followed to specify which category and features the NFTs have.

Furthermore, there is no easy way for Metaverse developers to know which NFTs have been adopted by which businesses or which other Metaverses. We believe it is essential for businesses to drive NFT adoption and for metaverse developers to ride that wave. Only

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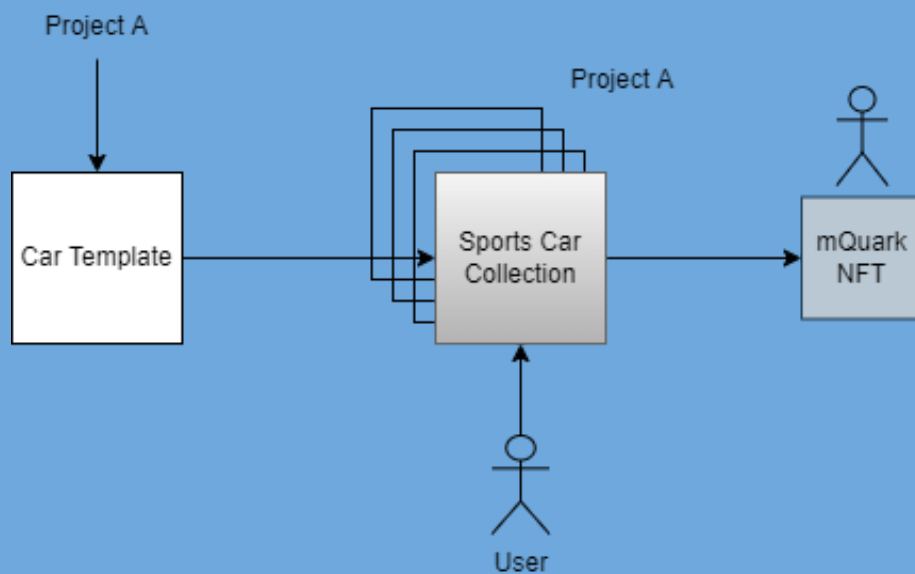
when businesses, Metaverse developers and customers interconnect that we'll jump the adoption chasm.

We need an interoperability standard or protocol that helps businesses, Metaverses and game developers to create categories of reusable NFTs with their own attached attributes. We need to give developers the power to follow a common NFT standard, categorise in-game items & attributes, establish a common language among other metaverses, and allow their customers to take their owned NFTs from one Metaverse to another.

We need to allow developers from Metaverse A to either read the NFT's attributes of Metaverse B or completely reimagine what that object is with their own attributes to attach. For example, a unique well-known branded shoe sold on their website that came with an accompanying NFT could be represented on the feet of an avatar in one metaverse, but could be represented as a picture on the wall in another metaverse.

# 2

“A new type of interoperable and extendable digital asset (NFT) whose value and utility grows when used across businesses and metaverses alike.”





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## 2. WHAT IS AN mQUARK?

An mQuark is a unique type of NFT for an end-user that represents an object or achievement to own in multiple metaverses.

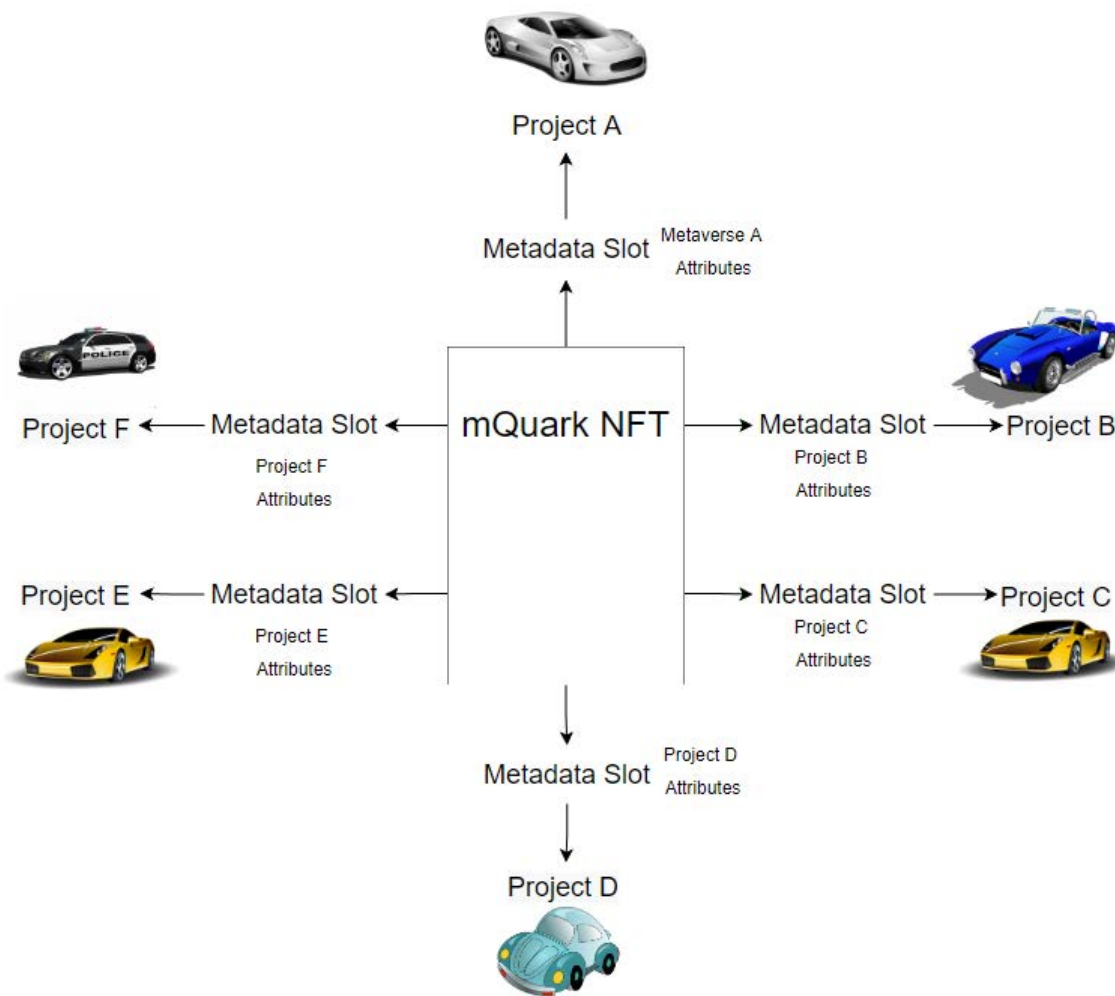
mQuark is a solution to the interoperability issue of metaverses. It allows the existence of a unique NFT (referred to as "mQuark" in the mQuark ecosystem) in multiple worlds and for them to interoperate and upgrade seamlessly across various metaverses by using the power of a shared JSON schema.

### 2.1 Metadata / Attributes

NFTs are forged when an end-user mints from a category in any metaverse. This template or category has a unique "Template ID" that allows multiple metaverses to recognise it. To give it meaning or value in that metaverse, properties or attributes can be attached to the minted NFTs, via metadata slots. All metaverses can be read from all those metadata slots or just their slot - it's the developer's choice. Only the owner of a metaverse can write to their metadata slot. A minted NFT can have multiple metadata slots, one for each metaverse.

Metaverses, to increase the interoperability of their metadata should follow the attributes standard that will be published by the Soonami team. Thus, other projects will easily read and understand the attributes of metadata.

The end-user pays for the minting of an NFT - when they buy a Sword in a game. The metaverse developer determines (from a UX perspective) whether the end-user mints with or without metadata (the attributes of that Sword). The end-user would then have to pay (a transaction fee) to have the metadata slot created or updated.



[Figure 2.1.1 shows an mQuark NFT's Metadata Slots and their possible outcomes ]

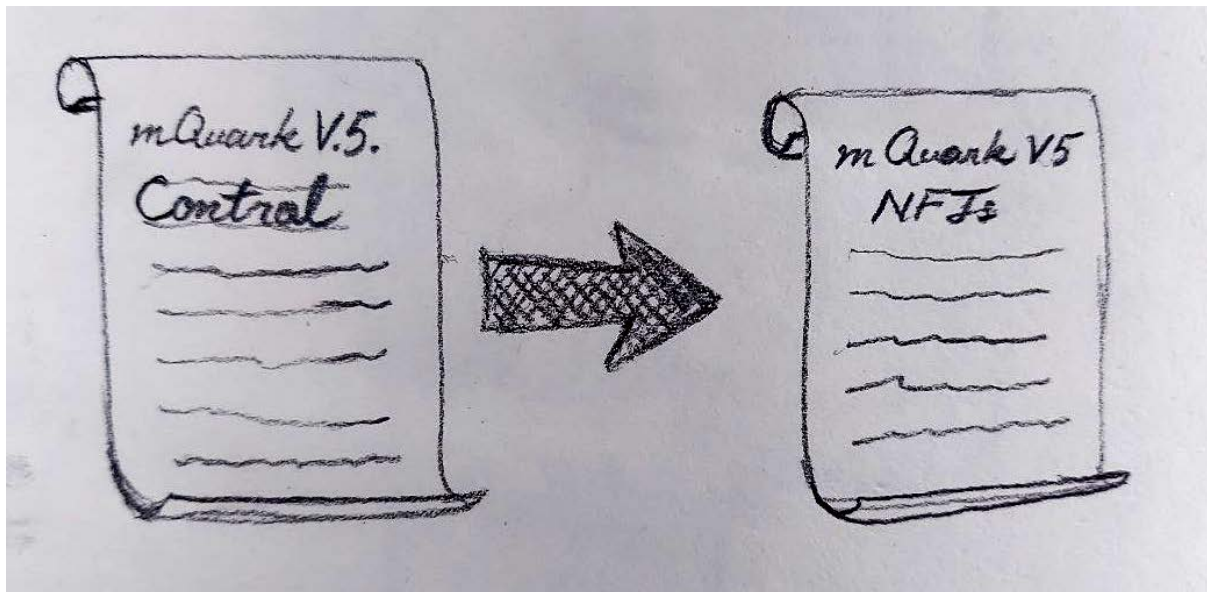
## 2.2 The Smart Contract

Simply put, smart contracts are blockchain-based algorithms that execute when specific criteria are met. They are often used to automate the implementation of an agreement so that all parties can be sure of the conclusion right away, without the need for an intermediary or additional delay. This makes it possible for the network to store the data. Additionally, the smart contract makes sure that the data is both transparent and immutable.

The mQuark smart-contract ecosystem consists of two different smart contracts. The primary is "mQuarkV5Control", which manages the protocol financial state, and security interactions. The Secondary is the NFT data contract, "mQuarkV5" (based on EIP721) that

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holds mQuark Templates, Metaverse Meta Slots, as well as their NFT Collections and Owners information. mQuark follows this Data Contract pattern to provide its solution of interoperability for individuals between diverse metaverses.



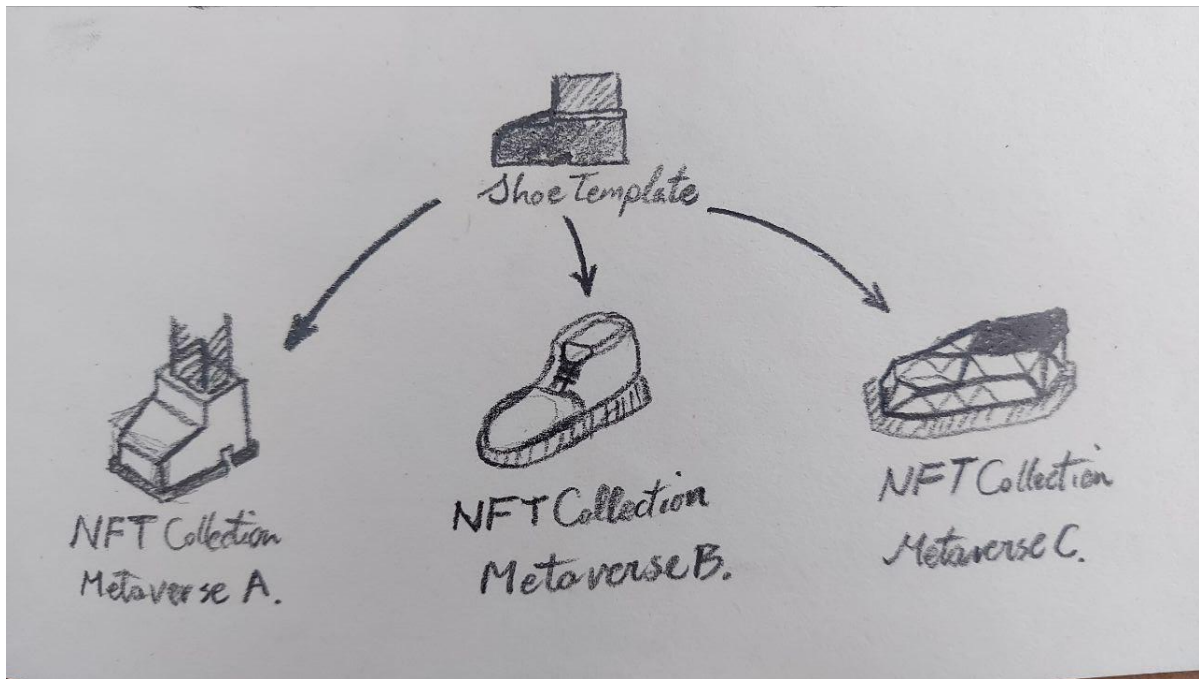
[figure 2.2.1 The data contract structure]

In the mQuark contract, Templates are abstract NFT objects that can be interpreted and extended by each Metaverse entity. Each Metaverse can build upon the Templates and create as many NFT Collections to support their user's needs.

**Templates:**

- Are created by mQuark Foundation
- Are a basic representation of an item/thing
- Act as a blueprint schema
- Contain a metadata URI
- Used by Metaverses to create their collections
- Have unique Template IDs
- Show the Mint Price
- Can be requested if non-existent

A unique Template ID allows each metaverse developer to recognize the category of the NFT item and display a representation of that asset customised to their world i.e. while the NFT item is the same in each world, the representation of that specific NFT could be a different, even though a metaverse may provide an option to users to edit their representations. Users also have the ability to export their NFT assets into a proper mQuark NFT slot. They can also request/suggest new Templates in the Developer Portal.



[figure 2.2.2 NFT Collections inheriting from an NFT Template.]

To use the template for building NFT Collections, mQuark Foundation will initially validate and register a requesting Metaverse entity. The validated Metaverse organisation will be able to select and create collections for their project, as well as, to view the templates that other projects have used. Organisations are registered in the mQuarkControl contract, which is keeping records of their balances.

#### **Collections:**

- Are created by Metaverses/Projects
- Are extended NFT assets that inherit from a Template
- Have the same Mint Price with
- Have unique Collection IDs/Collection Images
- Can be created without any limit by a Metaverse entity
- Contain a total supply and item scarcity
- Have mintable minimum and maximum token id limits
- Are consisted of ERC721 unique NFTs.
- Will have unique tokens for every collection in every metaverse.
- Can be customised by having a new name and Image after creation
- Have the same Mint Price with its Template
- Can only be minted for the Metaverse

While the protocol sets the price for minting NFTs, Metaverses/projects determine the price for “metadata slot” of their collections. This is due to mQuark Foundation’s concern about price manipulation of NFTs derived from Templates, and prevents unfair competition and market abuse.

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The Collections are also special in the way that they support multiple metadata slots.

**mQuark Metadata Slots:**

- One metadata slot for every project
- Only NFT owner can write to slots
- Are publicly readable
- NFTs should be registered to add a slot for the project

## 2.2.2 Royalties

Since mQuark is an NFT contract, royalty payments are obviously a part of the automation. Businesses that want to use mQuark will have to pay the royalty amount to Soonami from first-hand NFT sales, when it's first minted, (handled automatically). A voluntary percentage can also be paid when NFTs are sold as second-hand sales on third-party marketplaces (e.g. on OpenSea). Obviously, when a user first mints the NFT and/or adds a metadata slot to the NFT, it's the business or metaverse that earns a profit from that first sale.

When a metaverse adopts the NFT created by another business and that NFT is traded in their game / marketplace, that metaverse could give themselves royalty fees just like OpenSea.

## 2.2.3 Gas Costs for mQuarks

Individuals must pay gas fees in order to conduct a blockchain transaction. These fees cover the cost of the computational power blockchain miners need to validate transactions. Usually, they receive payment in the native cryptocurrency of the blockchain. While paying gas fees for creating a transaction is compulsory on the Ethereum network, the costs are influenced by various factors including existing demand for gas, computational resources for processing smart contracts, among other factors.

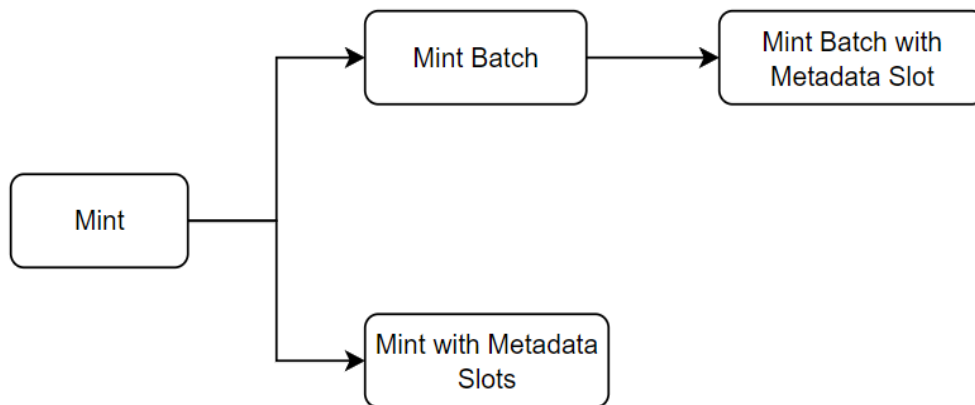
The reduced gas fees to be paid are a sought-after and positive feature for end-users. That's why we care about this in our Smart Contracts, and we carefully perform our tests and coding to keep the fees to a minimum.

Moreover, mQuark smart contracts include batch operations and different minting options to reduce gas fees to a single transaction. For instance, users can mint with multiple or single metadata slots or without a metadata slot and perform batch mints again with or without multiple or single metadata.

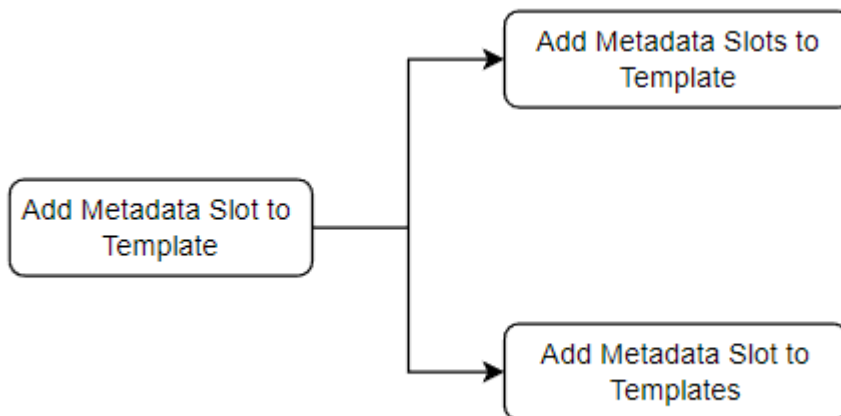
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Performing batch operations increases the gas unit required for a successful transaction, but reduces the network fees to a single transaction.

The following figures show the functions related to these batch operations in the smart contracts.



[Figure 2.4 Shows different mint options]



[Figure 2.4 Shows different metadata slot add options]

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## 2.3 Security & Permissions

mQuark team has taken into consideration many aspects of the contract security, and implemented vetted patterns and best practices to ensure the healthiness of our smart contracts.

The use of Data Contract pattern enables us to limit state changes of mQuarks to calls only sent from mQuarkControl contract. Callees to the mQuarkControl contract are also being validated by mQuark Foundation. Only the registered addresses can call the methods of the mQuark NFT contract and add projects.

Additionally, the financial states of the mQuarkContol are benefiting from the vetted Pull Payment system used by OpenZeppeline, that secures each beneficiary for security when withdrawing funds.

mQuark NFT Contract ensures Metadata slots can only be updated with valid data signed by the owner of the metadata slot, which is a registered project.

Users who demand an update operation for a metadata must own the NFT, which means without a Valid Signature and without having the NFT in his/her wallet, the metadata slot can NOT be changed in any way. Furthermore, the main metadata of the NFT( i.e. Template Metadata) is immutable when minted. Therefore, anyone can read any metadata slot but only the NFT owner can change it with valid signed data by the project.

It's also important to note only the mQuark Foundation can create templates, in order to eliminate the potential for abuse. However, business and metaverse developers may request templates to be added by Soonami via the Developer Portal.

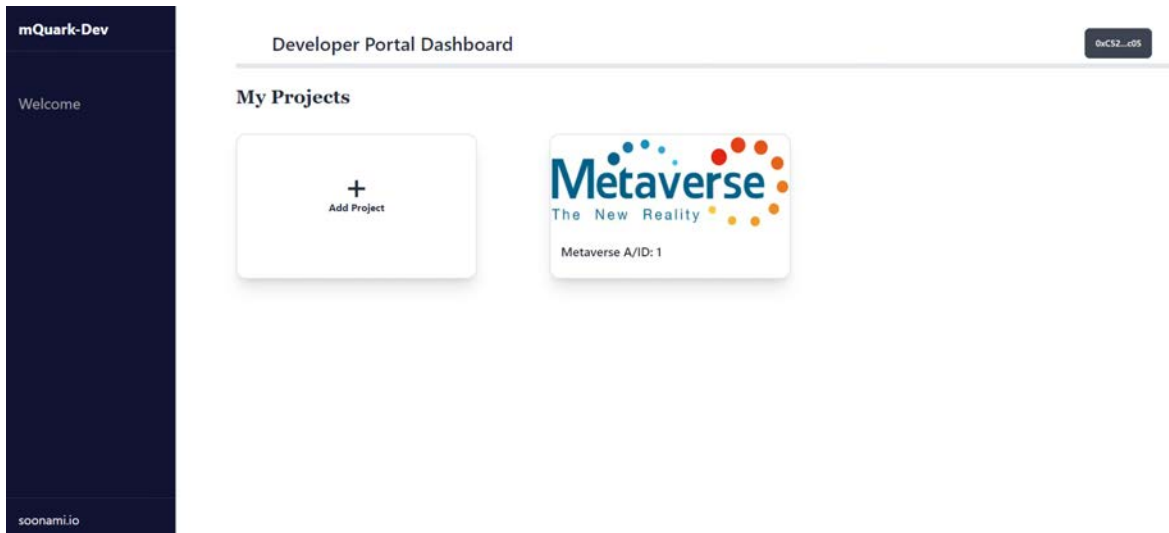
The contracts are also audited by [CompanyX] and [CompanyY] with reports attached to the section Appendix I.

## 2.4 The Developer Portal

Developer Portal is the dApp for organisation developers that would like to use mQuark in their projects. Simply, it allows developers to send transactions to Smart Contracts via an UI. So, this makes interactions with mQuark Smart Contracts easier and more fun. Developers can connect with their wallets, add projects, add to their Metaverses/Games among the created Template NFTs, check which Metaverse/Games the Templates are used in, and quickly transfer their balances from the contract to their accounts. In addition, Template requests can be made, and new ones can be created over time.

### 2.3.1 Adding a project

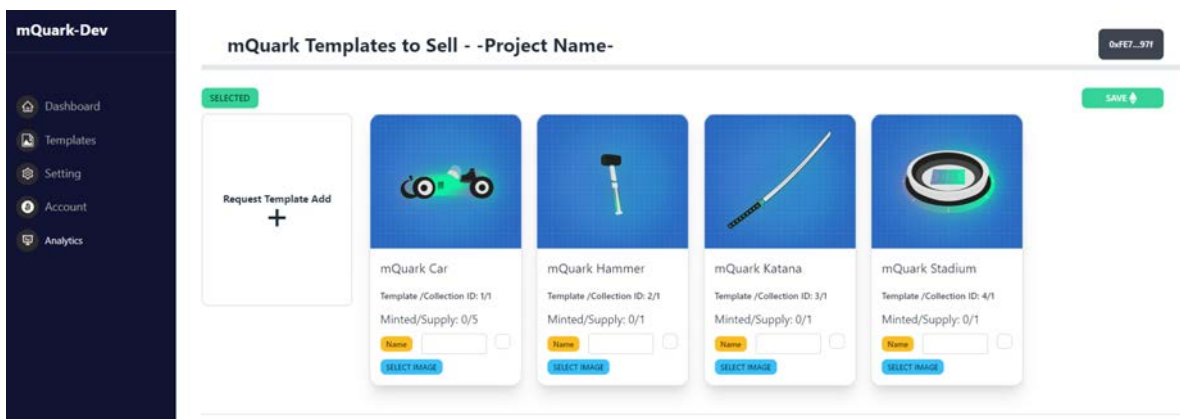
- The Dashboard Page is where registered wallets can add additional projects to the smart contract, see already created projects, and easily switch among them.



[figure 2.4.1 - A screenshot from the Dashboard page]

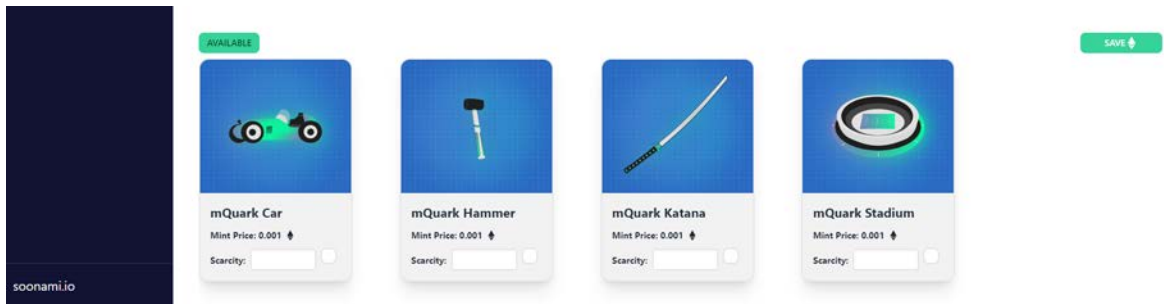
### 2.3.2 Selecting Templates for Project

- Templates Page is the page to select from available templates and create collections appropriate for their project or metaverse. They can view already created collections and also set a collection name and image for their collections here.



[figure 2.4.2 - A screenshot from the Templates page and it shows a project's created collections]





[figure 2.4.3 - A screenshot from the Templates page and it shows available templates]

### 2.3.3 Requesting Templates to be Added

[figure 2.4.4 - A screenshot from the Request Add Template page]

Soonami would have already created and made available hundreds of templates (e.g. car, house, shoe, etc). However, there may be situations where a new template will need to be created. This is where the metaverse developer makes a request to Soonami, who will then inspect the request and approve if valid and appropriate to the ecosystem.

### 2.3.4 Setting Prices

- Setting Page is where the project owner specifies metadata slot add price for users' NFTs.

The screenshot shows the 'Setting - -Project Name-' page in the mQuark-Dev application. The left sidebar contains navigation links: Dashboard, Templates, Setting, Account, and Analytics. The main content area is titled 'Metadata Slot Price' and features a text input field labeled 'Amount in Ether' and a green 'SAVE' button. A dark blue header bar at the top right displays the address '0xCS2...c05'. The footer of the sidebar shows 'soonami.io'.

[figure 2.4.5 - A screenshot from the Setting page]

### 2.3.5 Managing Funds

- Account Page is the page where you check your balance and transfer funds from the smart contract to the registered wallet.

The screenshot shows the 'Account - -Project Name-' page in the mQuark-Dev application. The left sidebar contains navigation links: Dashboard, Templates, Setting, Account, and Analytics. The main content area displays 'Balance in contract' and 'Withdrawable Amount', both showing '0.0' with a small coin icon. Below these are input fields for 'Ether amount' and buttons for 'TRANSFER' and 'WITHDRAW'. A note at the bottom states: 'Please, first transfer your balance to intermediary contract and then withdraw all.' A dark blue header bar at the top right displays the address '0xCS2...c05'. The footer of the sidebar shows 'soonami.io'.

[figure 2.4.6 - A screenshot from the Account and Balances page]

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## 2.5 APIs for Developers

The mQuark provides easy Graph APIs to developers, so they can build and extend upon our protocol in the simplest way possible. All developers can query the following API endpoints through the graph protocol. Protocol's state and information is open and transparent to the public.

### **Endpoints:**

- **Collection Info:**

Collections are NFTs minted based on a specific Template. A collection endpoint provides the following queries to developer portal users:

- Template ID
- Collection ID
- URI
- URI set
- Mint Price
- Mint Count
- Available Amount
- Minimum and Maximum Reserved Token IDs
- Metaverse ID/Name/Wallet

- **NFTs in Wallets:**

NFTs in the users wallets can be accessed by this endpoint. The Wallet will display the user's mQuark NFTs in their wallets. The endpoint will provide the following:

- Token ID
- User Address
- The number of metadata slots – registered projects,
- URIs

- **Project Info:**

Developers can receive information about Projects (e.g. metaverses) by querying this endpoint. The endpoint provide the following:

- Project id,
- Wallet Address
- Slot Add Price
- Name
- Default Metadata URI

- 
- Company Wallet Address/Name
  - Balance

- Metadata Update:

When users want to update the metadata, metaverses must generate a new URI with the new metadata. We can receive and upload it to decentralised storage and return the newly generated URI to the project:

- Metadata
- URI

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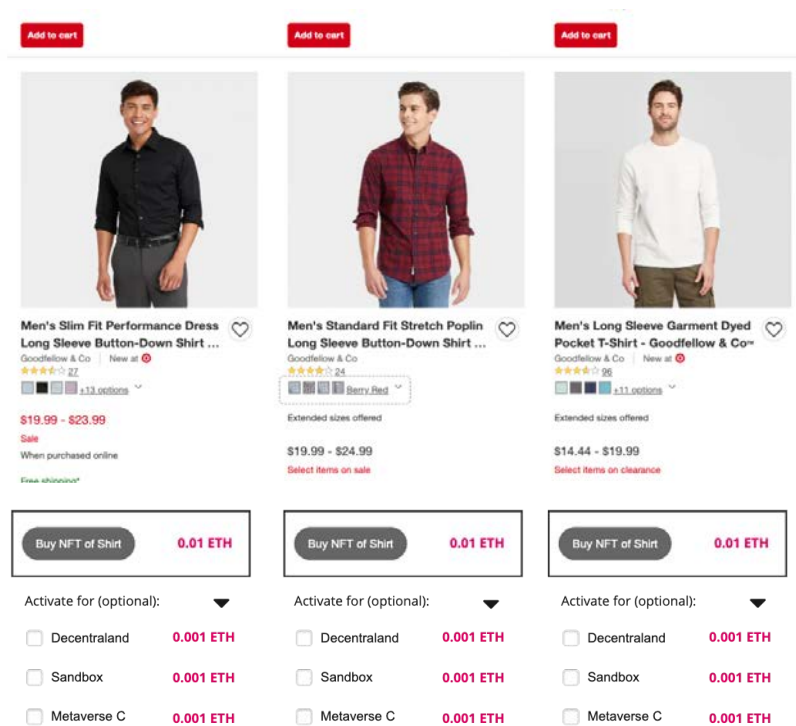
“We believe businesses will provide the surge of adoption and metaverses will ride the wave.”

### 3. USE CASES

We believe businesses will provide the surge of adoption and metaverses will ride the wave. As customers buy and sell more and more mQuark NFTs, thus more businesses and metaverses get attracted to using the protocol. This reinforcing cycle begins with great applications that engage customers by tapping into NFT value perceptions mentioned earlier. Great applications come about due to the extra benefits this type of NFT grants to traditional businesses, metaverse & games developers.

#### 3.1 Value-Proposition to Traditional Businesses

Traditional businesses can make Template requests using the mQuark Developer Portal, where other Metaverse/Games can use these Templates in their projects. For example, when a shoe template is created for a famous brand, when users mint it, they will have the name and image of that brand in their wallets, and they will be able to make their advertisements easily. In addition, these can be offered to players as items and/or skins in many organisations without needing advanced Blockchain or Smart Contract knowledge. Also, in future versions, they can make campaigns in their stores and give the NFT of the shoes that users buy in real life as signed data, and then users can mint it for free and have a digital copy of that shoe in metaverses/games that have accepted this Template.



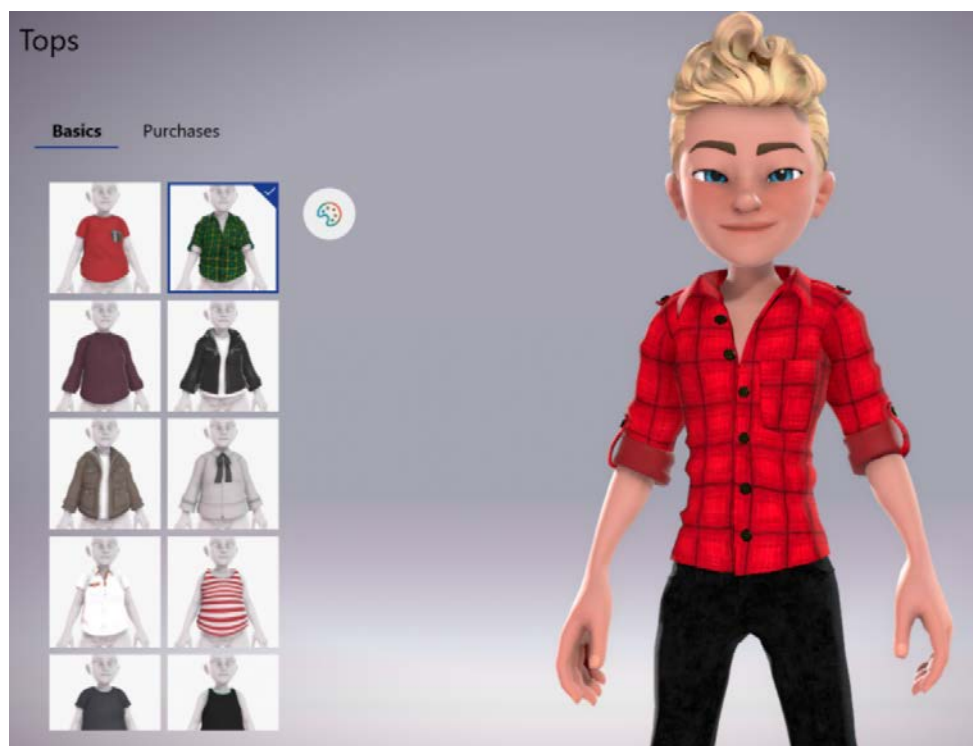
[figure 3.1.1 - Shows a mint with multiple metadata slots UI]

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## 3.2 Value-Proposition to Metaverse Developers

Metaverses do not have to pay fees to use mQuark (except for tx gas fees) and can quickly increase their player numbers and revenues. Even if the NFT to be used, is not minted in that metaverse, they can generate income by opening metadata slots to the users' NFTs, but the main benefit here is the increase in the number of users/players. Because the items or skins that will be presented to users' NFTs will also give players an additional reason to try and visit that metaverse. Because players will have a chance to start directly with items/skins they already own, and they do not have to spend time to get these or spend money to have them. If players like the world, they may continue to play, which will be a positive outcome for the project.

Also, even for a newly released metaverses, they can check which NFT Templates are in use more among other metaverses through the Developer Portal easily and focus on those NFTs and gives reasons to users to play with their NFTs (giving their owners the necessary items/skins). Also they can select the scarcity of NFT Templates they would like to choose for their projects, and that given amount will be reserved for the project. Chosen Templates will be the project's collections and also they can specify a sub-name for them and with this opportunity, they can select the same Template multiple times for different uses.



[figure 3.2.1 - Shows a customization options of a minted mQuark NFT]

## 3.3 Value-Proposition to the Customer

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Nowadays, many new games come out, and many players switch to other games or give up playing them because they don't have time, spend too much, or even because the game has no players anymore. In the future, current games will merge with today's metaverses, and multiple worlds will emerge.

As users, we can have some of the items/skins the game/metaverse has to offer by spending time in these metaverses/games that will be released, earning in-game items or paying without wasting time. However, since we want to have fun and have a good time as players, if we had the same inventory in each world, we could easily switch between worlds and use our items/skins in other worlds or trade those outside of the world without the need to be in the world.

The NFT technology that comes with Blockchain, our mQuark NFTs that we keep in our blockchain wallet allows us to move our items/skins while transitioning games/metaverses and to own them in those universes. It also allows us to upgrade our items and save them, if desired, on the immutable and uncensored network of the Blockchain.

For example, as a player in Metaverse A, when you upgrade the sword you have, that is attached to mQuark Sword NFT, over time or add new attributes to it, you can save these into the metadata slot opened for that world in the NFT. When you move to another universe, if that universe decides to read your previous metaverse metadata, that metaverse may provide you with a similar sword equal to the earlier value of the previous metaverse. This decision, which is entirely up to the owners of the world, allows for other unlimited possibilities. For instance, that sword will enable NFT to be sold even in large third-party NFT marketplaces, taken out of the game, attracting the attention of even those unrelated to that world, thus increasing the number of buyers. From the user's perspective, both the user sells the item and the buyer buys it; the buyer is not interested in that world but because the NFT and its attributes seem attractive. Maybe after they buy that item, they will want to play the game, and the metaverse/game will gain a new player. In addition, when you have a significant success or a crucial moment in the game, even that moment can be recorded in the mQuark NFT metadata, immortalising that particular moment as NFT and can be sold again by the user if desired.

Another interesting use case for users can be to move their achievements in the form of NFTs where players in RTS, FPS or role-playing games could reuse badges from a game to another. As well as, their accomplishments, items and achievements from one volume to another volume in a game series e.g. image you can get a special sword by finishing an imagined version of Witcher 1, and be able to move your achievement to Witcher 2 or the even 3rd or 4th instalment of that franchise.

### 3.4 Re-Selling on OpenSea



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One of the possibilities that mQuark provides is that in-game items/skins, maybe even avatars/characters can be sold on NFT marketplaces such as OpenSea. This will take the in-game trade up a notch and move it to a place where there are a lot of buyers and sellers, and it will benefit both the seller, the buyer and the metaverse. Because sellers wish their products to be seen by many people for sale, buyers wish to buy easily from one place with one click where there are many products, and metaverses wish for the number of users to increase. Even someone who has not played the game before or has only heard of the name may wish to play it and visit when they bought an excellent item. For example, current metaverses can sell their NFT items on OpenSea. Still, NFTs can only be used in that universe, but for mQuark, the situation is different, and an item with multi-universe features can be purchased rather than buying a single item.

### 3.5 Conclusion

We believe in a future where businesses, organisations, non-profits, metaverses and customers, through the use of mQuarks, will interconnect, interoperate and augment each other to create virtual objects of increasing value, functionality and reusability.

While traditional NFTs are specific to each user in their own rights, the asset lacks the concept of interoperability when imported to diverse metaverses. mQuark solves this issue by enabling projects to reimagine NFT assets in unique ways depending on their worlds.

Each time an mQuark gets reused or re-imagined, its perceived value increases to the customer, the organisation and the metaverse. The more customers use and trade these mQuarks, the more organisations and brands get on board, the more brands get involved the more metaverses adopt the protocol. It is this self-reinforcing engine, along with Soonami's platform which connects brands with metaverses, which will push the adoption curve beyond the early adopters towards the majority.

The mQuark protocol has the capability to engage businesses, organisations, brands and customers unlike anything before it.

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A large, white, stylized number '4' is positioned on the left side of a solid blue rectangular background. The number is composed of several geometric shapes: a diagonal line for the top-left stroke, a horizontal bar, and a vertical stem with a crossbar.

“The best way to predict the future  
is to invent it.”

- Theodore Hook

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## 4. FUTURE PROSPECTS

There are two main friction points with NFTs in general - gas fees and transaction speeds. How Ethereum will address these points is beyond the scope of this whitepaper, but what's important is that upcoming Ethereum updates have huge potential to scale the platform.

### 4.1 After the Merge

The Merge is scheduled to be live between September 10-20, but won't fully affect the speed of transactions or the gas prices. After the shift to proof-of-stake, similar fees will still be required to pay "validators," who will stake a sum of ether for the privilege of processing transactions.

The mechanism predicted to affect the transaction speeds are the 'Layer 2 Rollups' already begun, and 'Sharding' which was postponed till after the merge.

### 4.2 Multiple Blockchains and Tokens/Coins

Presently the mQuark protocol exists only on the Ethereum network. There is no reason the logic contained in the Ethereum Smart Contract cannot be ported to other blockchains like Polygon, BNB Chain, Avalanche, Fantom, Arbitrum, Optimism and zk Rollups, etc.

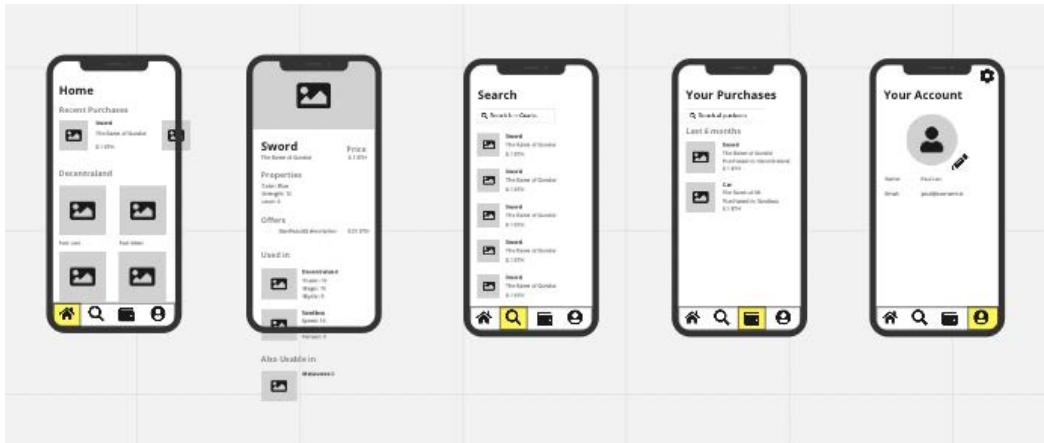
### 4.3 Inheritance / Parent-Child Structure

Potential evolutions of the mQuark protocol could involve phases that give the templates more hierarchical structure. At the moment, the protocol offers limited structural scope - we have a *car* template, and the metaverse developer could create a collection from that template that includes attributes referring to whether it's an *SUV* or a *Sports* car.

Using concepts understandable by developers, a future phase could evolve to the protocol to use an *Inheritance* style of structure, where for example a *Lion* template could inherit the attributes from a *Cat* template, which inherits from an *Animal*.

### 4.4 The Soonami App

Soonami will develop a companion app that will feature a blockchain wallet, identity management system and mQuark owners cart.



[figure 4.4.1 - Shows mQuark mobile app UI]

This will help customers see which metaverses have adopted their NFTs. This will allow new metaverses to gain access to new customers ready to utilise their assets.

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## 4.3 Roadmap



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## 5. THE CORE TEAM



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Chief Executive Officer



Marc Strigel

Chief Operating Officer



Jens Hewald

Co-founder



Duncan Ross

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