



Web3 certification of authenticity



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Abstract

For decades, manufacturers and consumers have been suffering from counterfeiting, the act of creating low-cost product imitations of branded products that have a much lower quality than the originals. Product fakes have become an industry of their own and now represent one of the largest clusters of global criminal activity, with a revenue reaching trillions of dollars every year. What is more, counterfeiting results in multiple additional issues that go beyond the direct loss of sales for manufacturers and monetary losses for consumers - such as dangers for the health and safety. Several product categories like pharmaceuticals are extremely sensitive to low quality imitations and could have disastrous effects on the end consumer.

There is a wide array of solutions already implemented to combat counterfeiting, yet their effectiveness seems to be lacking. Only a tiny fraction of fake products end up seized or discovered, meaning that the majority ends up on the market and continues to harm manufacturers and put consumers in danger. It is apparent that we are in a dire need of new methodology and technological solutions to be able to combat the issue.

Qrbp will solve the challenge that manufacturers and consumers are facing in counterfeiting. The project represents a blockchain initiative that aims to provide manufacturers with an intuitive, immutable and transparent way of product authenticity certification through a unique methodology that utilizes Web3 concepts like non-fungible tokens (NFTs) and existing solutions in the likes of dynamic QR codes. Qrbp bridges the access of manufacturers in multiple product categories that are suffering from product fakes today to the advantages blockchain technology offers when it comes to proving the origin and ownership chain of a product.

Through a comprehensive marketplace, Web3 technologies, a seamless workflow user experience and intuitive onboarding, Qrbp aims to establish the go-to method of product certification.

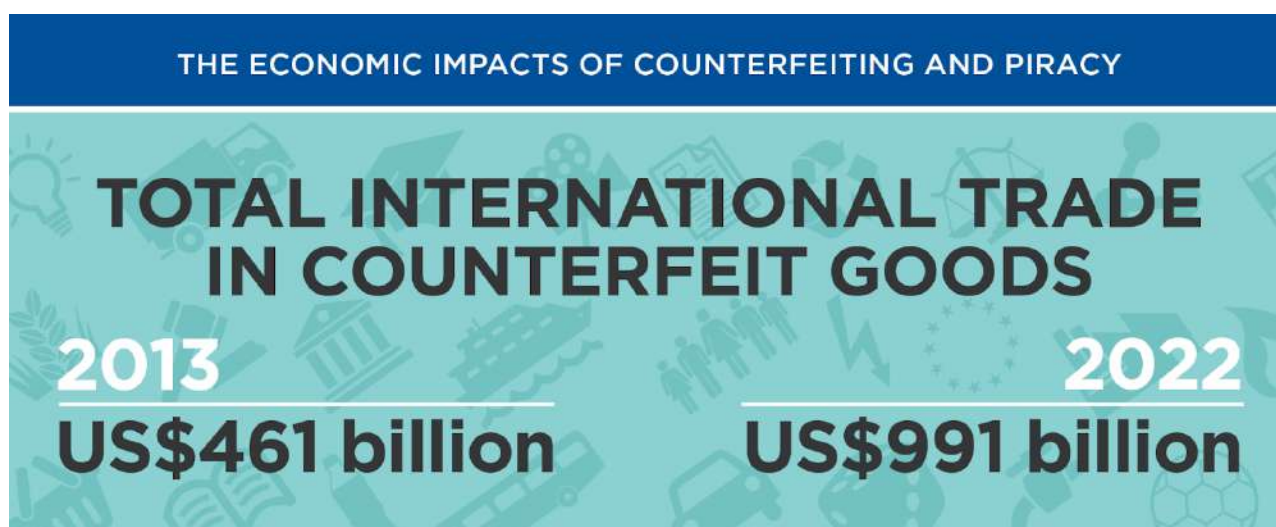


Industry overview

Counterfeiting: a global pandemic

In 2022, counterfeiting became at least the tenth largest economy — just above Canada's total GDP.

Counterfeiting is an issue that has been becoming considerably worse over the last few decades. With consumerism and the popularity of social media rising, people are increasingly drawing social value from their material possessions. This is among the main reasons for the increased popularity of product fakes, as spending continues to increase rapidly.



The total international trade of counterfeiting products has more than doubled over the last 9 years.

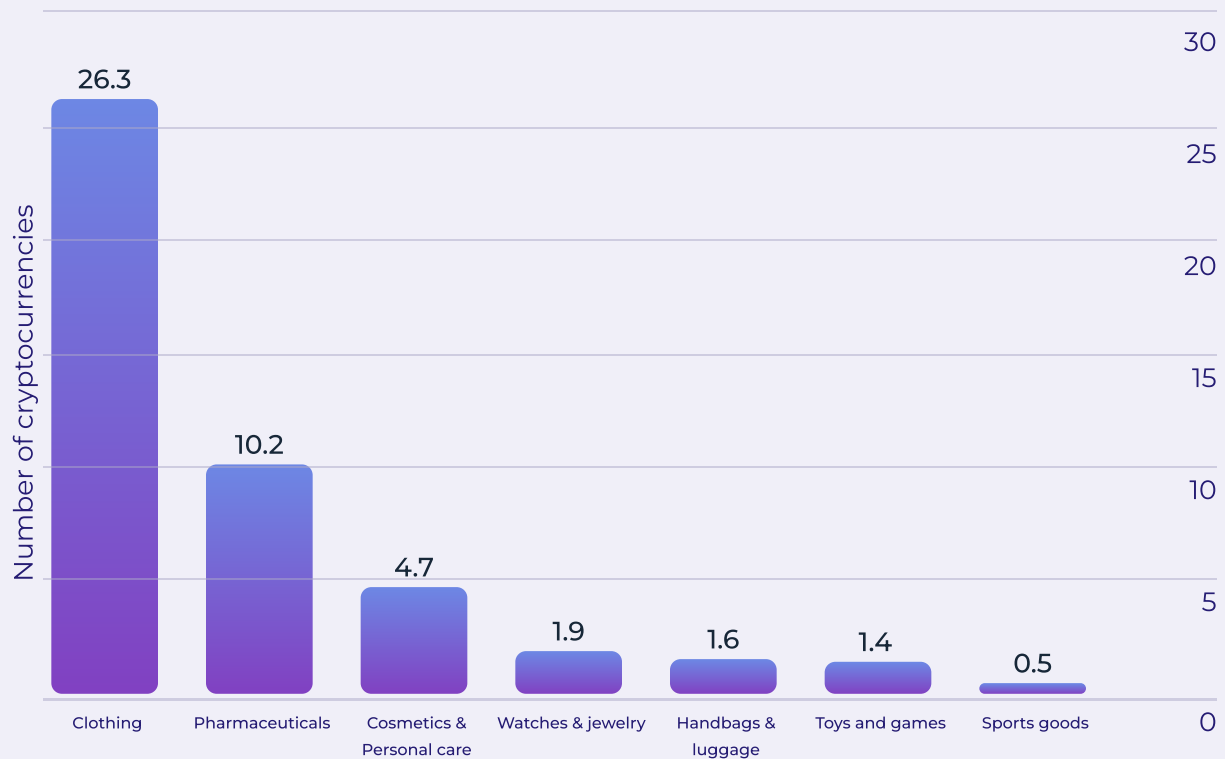


When we also include piracy, the unauthorized duplication of copyrighted content such as software products, movies, music and others, the numbers are even worse.

The value of global trade in counterfeit and pirated goods in 2022 amounted to more than \$3 Trillion.

Counterfeiting is against IP (intellectual properties) rights - in the US, this is regarded as a very serious crime, with fines reaching 30 million USD and life prison sentences. The issue is so considerable that it was even partly responsible for tariffs levied by the U.S. a few years back with the purpose of preventing IP theft from criminals in China. Manufacturers are losing billions of dollars and consumers end up paying high prices for a product that is often of a very low quality — both in terms of materials used and the technique used to manufacture it - without any of the manufacturer value they are looking for in the first place.

IncoPro, a company specializing in intellectual property and manufacturer protection, found that more than half of buyers lost trust in a manufacturer after purchasing a fake good online, while almost two thirds lost trust in the online retailer they got it from. This actually became the reason why Nike stopped selling on Amazon. The effects of counterfeiting are thus hurting not only the direct sales, but also the CLV (customer lifetime value) by reducing the likelihood a buyer would purchase again from the same manufacturer.



Direct sales losses from counterfeit goods worldwide in 2020 in billion EUR, by retail sectors. This graph does not depict any indirect loss of sales, such as the loss of CLV (customer lifetime value) that occurs due to the consumers losing faith in the manufacturer and never purchasing again. More than two thirds of luxury manufacturer owners claim that counterfeit products are among the biggest challenges they face and the biggest cause for loss of profit.

According to Forbes, counterfeiting is the largest criminal enterprise in the world.

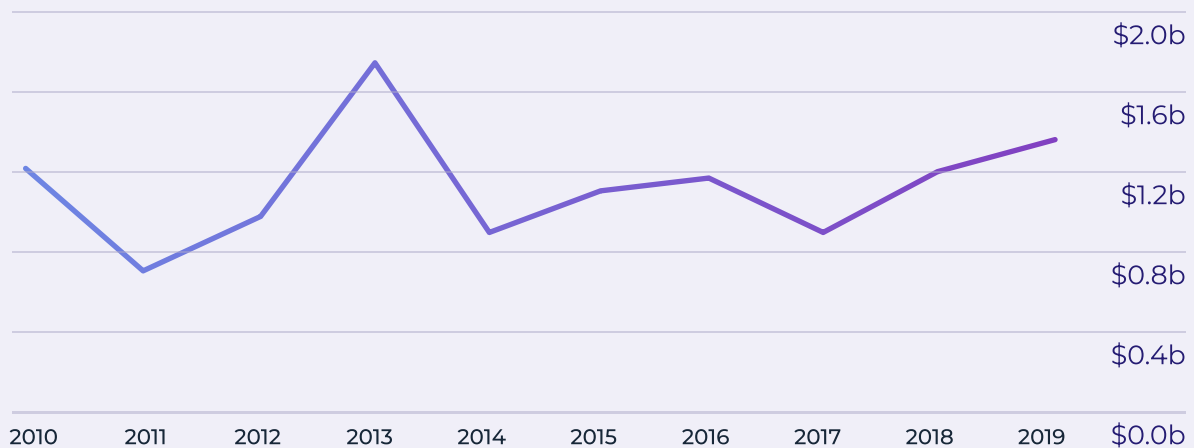
According to a study by Northumbria University, counterfeiting has very low entry barriers such as capital requirements and requires little to no knowledge to be pulled off successfully. Furthermore, the penetration of eCommerce concepts combined with the low degree of efficiency in preventing fake products from entering the market means it is very easy to place these products for sale. This overall makes counterfeiting a very attractive option for criminals of all sorts, even if they lack the necessary experience or do not have large amounts of resources.



The authentication industry provides a variety of anti-counterfeiting tools – thermally activated tamper-proof seals, security numbers, RFID (radio frequency identification) tags, color-shifting inks, holograms and many others. However, these mechanisms seem to be far from efficient. China and Hong Kong account for about 80% of the global production of counterfeit goods, yet the total value of IPR-infringing goods seized originating from China and Hong Kong was merely \$1.5 Billion in 2019, a number that is even lower compared to 6 years earlier. This is just a tiny fraction of the total value of global trade reported for the same year, meaning that the majority of goods are successfully flying under the radar and end up on the market, potentially tricking unsuspecting consumers into buying them. Furthermore, the total value seems to be stagnating, meaning that there is an apparent lack of development in the methodologies and technologies to prevent counterfeiting.

U.S. Customs Seized Counterfeit Goods Worth \$1.5 Billion in 2019

Suggested retail value of shipments seized at the U.S. border for intellectual property right violations (fiscal years)*



* figures represent the retail value of the counterfeit goods had they been genuine
Source: U.S. Customs and Border Protection

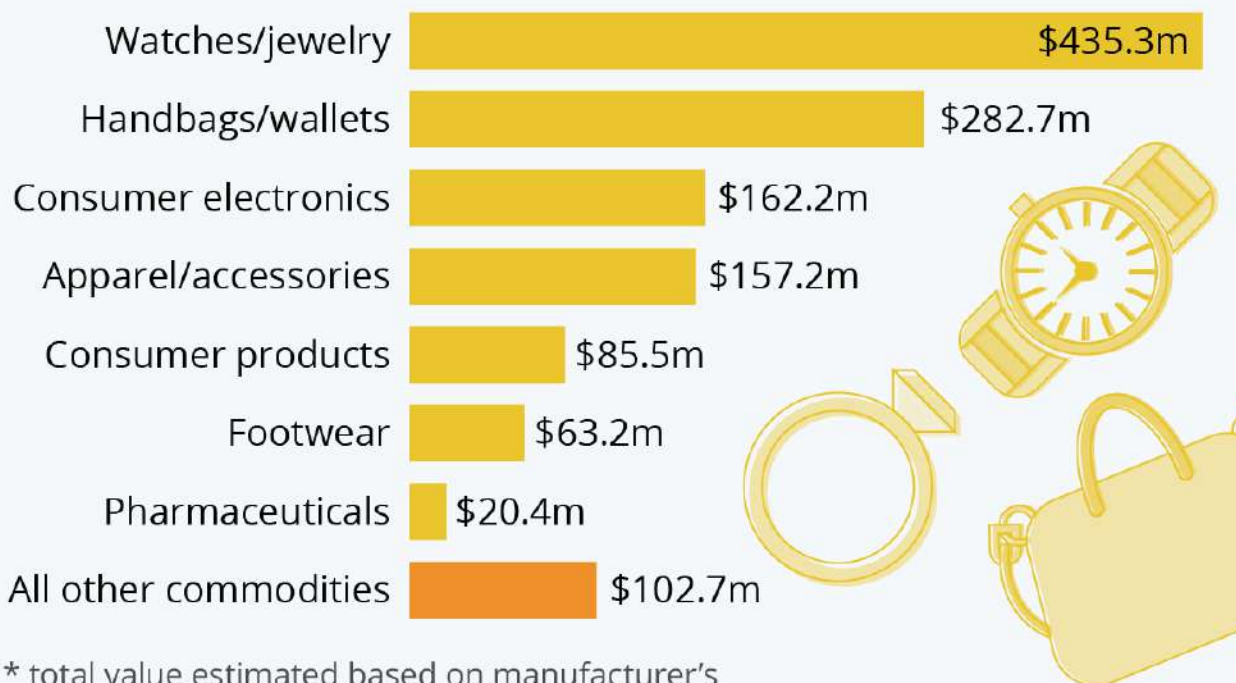
US customs seized counterfeit goods worth \$1.5 billion in 2019.

There is an apparent need for effective solutions and a methodology in how we are attempting to address the issue with counterfeiting.



Luxury Items Account for Bulk of Fake Goods Seized in the U.S.

Total value of goods seized for intellectual property rights violations in the U.S. in 2020, by category*



* total value estimated based on manufacturer's suggested retail prices of seized goods

Source: U.S. Customs and Border Protection



statista

Total value of goods seized for intellectual property rights violations in the US in 2020, by category. Some of the manufacturers that are the biggest targets include Gucci, Louis Vuitton, Nike, Levi's and Adidas.

At the same time, it seems that most consumers are troubled by counterfeit products. Based on a study among US luxury shoppers, only between 1.5 and 1.2 people in 10 have a somewhat tolerable opinion of fake product imitations.



U.S. Shoppers Largely Dismissive of Fake Products

Share of U.S. luxury shoppers who agree with the following statements on counterfeit products



Based on a May 2021 survey of 1,084 U.S. adults who purchased luxury items in the past 2 years

Source: Statista Global Consumer Survey



statista

US shoppers are largely dismissive of fake products. The statistic is based on a survey conducted among 1082 US adults who purchased luxury items in the past 2 years.

However, with the increasing sophistication of the counterfeiting industry, consumers are unfortunately often unable to spot the difference between a real and a fake product. 80% of consumers have bought a product imitation at least once in their lives.

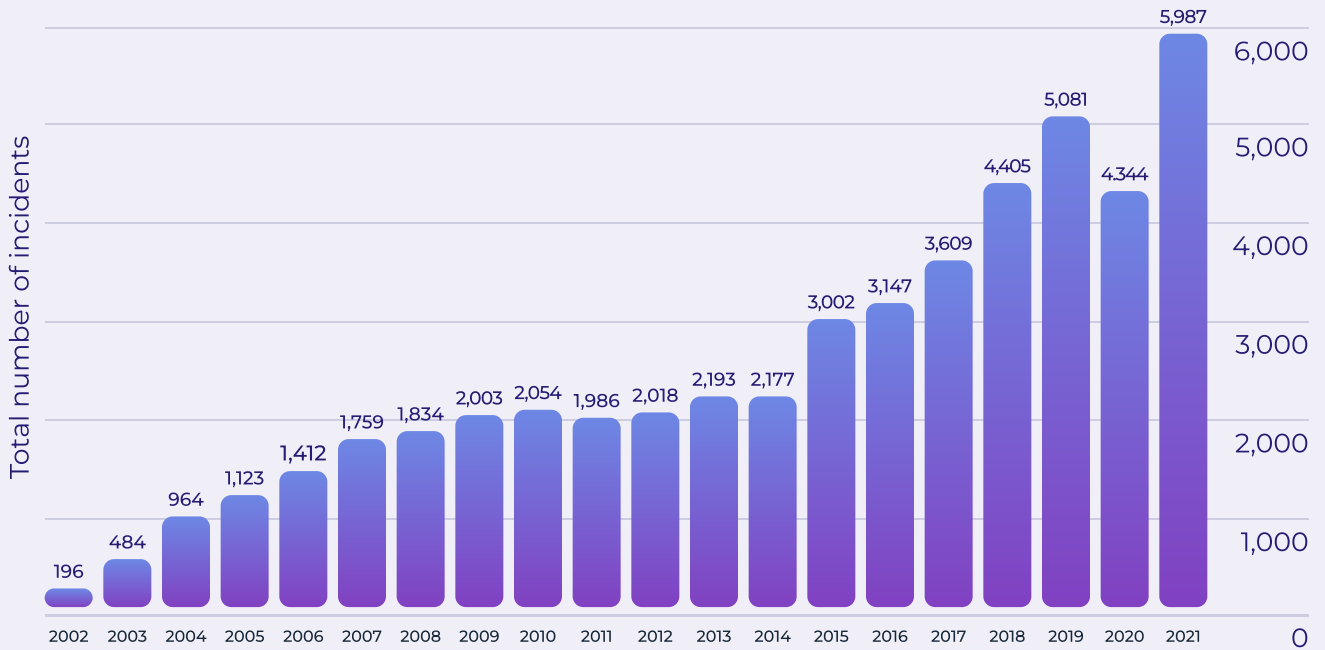


While the monetary losses are the most frequently mentioned negative effects from counterfeiting, there are other problems that impact multiple stakeholder groups — not just manufacturers and consumers.

Dangers for health: One of the concerns that is particularly important is how counterfeiting impacts the safety and health of consumers. Because the industry is not regulated, this allows the use of materials that are not approved according to safety and health requirements. In the fashion industry, one such example would be specific fabrics that were processed with dangerous chemicals proven to cause various types of cancer, skin irritations or to trigger allergies.

Because counterfeiting encompasses multiple industries, this can go much further than just an annoying rash. One of the industries that is particularly sensitive is pharma. It's estimated that up to 1 in 3 prescription drugs in the world are counterfeit. This figure is closer to 2/3 in some developing countries. The pharma industry is exceptionally strict when it comes to quality control alongside the whole supply chain, including materials and the way they are processed, and having counterfeited products circle around consumers freely has devastating effects on their health.

40% of all online prescription drugs were found to be counterfeit.



Total number of counterfeit incidents concerning pharmaceuticals worldwide from 2002 to 2021. the annual number of such incidents increased significantly over time.

The health dangers from counterfeiting are not limited to just the pharma sector. It all starts at the initial stages of the supply chain and the raw materials used in their manufacturing process can end up compromising the quality and safety of the end products. Electronic products are among the most vulnerable targets, as the materials used do not meet any performance or safety standards and can malfunction. This, in turn, can cause shock surges, fires and in some cases, even explosions. All of these can lead to property damage, injuries and death.

Apple reported that 90% of all “Apple” products that they purchased directly from Amazon were counterfeit.

Counterfeited products can also end up in various vehicles like planes or cars. Car parts also hide dangers, as specific knowledge is required to determine their authenticity and quality which not many consumers have. Criminals have



lately started targeting the automobile sector heavily, which presents another serious health concern, as fake car parts that are of a low quality could potentially lead to more property damage and intensify car accidents.

The FAA estimates that 520,000 counterfeit or unapproved parts are being installed in aircrafts each year.

Negative environmental impact: Counterfeiting, while not the major cause, is responsible for a considerable share of the negative environmental impact by humans that cannot be ignored. Normally, manufacturing processes are subject to strict regulations when it comes to the way they interact with the environment - waste disposal, materials used, the specific processes that are used and many others are screened closely by governments. Since it's not regulated in any way, the process of creating product imitations is often related to a complete disregard of how it impacts the environment. Furthermore, counterfeit chemical products, pesticides or fungicides can damage both the environment and our health due to their unknown nature.

Inhumane working conditions: In the counterfeiting business, there is no accountability. Most factories producing fake product imitations are positioned strategically in poor regions with low degree of political control, allowing their managers to have unlimited freedom when it comes to how they handle their employees. This results in very low pay for workers, long hours, insanitary living conditions, complete lack of work safety and even physical abuse that is comparable to slavery.

Lower incentive for innovation: Counterfeiting and piracy are a threat to sustainable business models based on intellectual property and patenting, because they also discourage innovation by reducing the incentive of economic growth. The negative impact thereof cannot be quantified, but it is suggested that it could be of considerable difference. Some countries are also suffering because of this due to the lack of incentive for foreign investors to set up subsidiaries at the specific locations.



Unemployment: According to a study by Frontier economics, counterfeiting is the cause for the loss of at least 2.5 million jobs globally every year. At the same time, the phenomenon creates an unregulated work sector relying on abusing the workforce with the purpose of lowering the costs in creating the product fakes as much as possible.

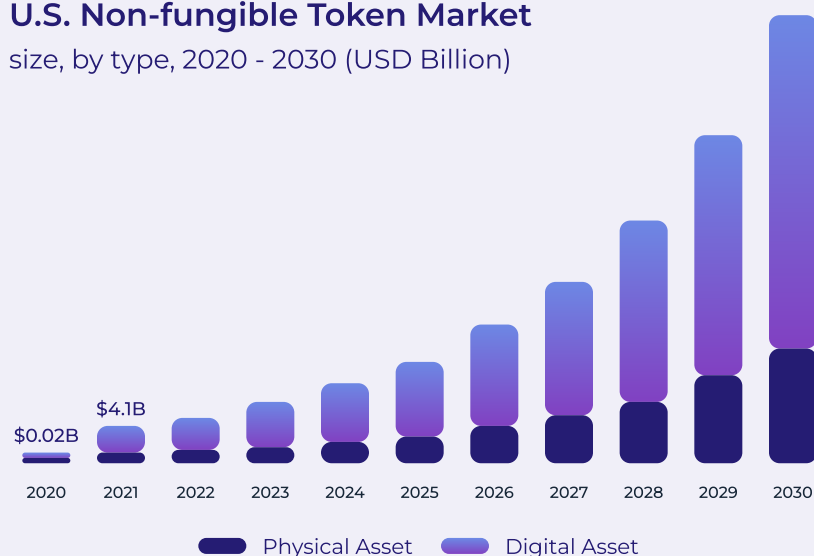
Web3 Economy: numbers and facts

Forbes named both Web3 and the Metaverse as two of the top ten trends everybody must be ready for in 2023.

Venture capital companies spotted the emerging NFT trend long before it became the enormous industry that it is today. Most of the leading NFT marketplaces were funded thanks to the trust VCs put in them more than 5 years ago. Since then, there have been considerable investments in the sphere — over the last couple of years, Meta invested around \$36 billion in the Metaverse.

U.S. Non-fungible Token Market

size, by type, 2020 - 2030 (USD Billion)



34.0%

U.S. Market CAGR,
2023 - 2030

Source:
www.grandviewresearch.com

The NFT market is forecast to show a CAGR of 34% between 2023 and 2030. The light blue column represents digital assets, the purple column — physical assets.

Important to note is that the ratio of physical assets to digital assets is gradually increasing, signifying the trend towards NFTs expanding outside their traditional scope of use cases.



NFTs and Metaverse concepts such as VR / AR shopping, Digital Twins and many others have already made their way into sectors like fashion. What is more, some manufacturers in multiple industries identified the potential NFTs have not only as a marketing tool, but also in designing meaningful interactions with their customers.



Luxury manufacturers are already leveraging NFTs — in 2022, Dolce & Gabbana generated over 6 million USD just from NFT sales.

A prime example of a multifaceted NFT utilization is Burger King's campaign Keep It Real Meals, which provides customers with the option of scanning a QR code to acquire a unique NFT. In the process they also see an immutable proof that their meal does not contain several harmful ingredients the fast food industry has been heavily criticized for using. The campaign was endorsed by multiple celebrities and became very successful, paving the way for Burger King towards a broader scope of possibilities in the future, such as Metaverse concepts.

NFTs as the potential remedy to counterfeiting

Many industry experts believe that NFTs can provide a solution to the issue with counterfeiting by outright preventing it. Non-fungible tokens can be used as the digital footprint bridging the physical object and the owner's wallet and essentially serve as verification of authenticity. Furthermore, with QR codes being a tried and tested technology that is already actively used in the industry,



some believe that there is also a good potential for synergy effects between them and the novel Web3 concept. Scanning the QR code could lead the user to the NFT corresponding to this product, which contains various information that cannot be tempered with. Some companies in the fashion sector have already started exploring the use cases of cryptographic assets which can be linked to real-world physical products.

Beyond the idea of verification of authenticity, the immutable nature of NFTs allows for a thorough tracking of activities alongside the supply chain. This can be used to see how the product was made, what materials were used, who was involved in bringing the product to the shelves, how much it cost at every stage and much more. A piece of clothing, for example, could prove to the buyer through an accompanying NFT that the fabrics were sourced from a well-known supplier. All of the information remains immune to manipulation of any of the parties involved.

Going back to the chart we presented earlier about the NFT market growth, we already mentioned how physical products are going to be increasingly linked to NFTs.

Web3 concepts like NFTs can provide a solution to some of the most pressing issues manufacturers are facing today like product imitations or supply chain inefficiencies.



Problems at a glance

Problem

Manufacturers and their customers are losing a tremendous amount of money every year due to counterfeiting. What is more, counterfeiting is hiding many other dangers — such as dangers for health, environmental pollution, human rights violations and more. The issue is getting progressively worse, with the attempts of the imitations to copy highly priced and quality products becoming more sophisticated. Consecutively, more customers are falling for the trap.

Problem

The current mechanisms to combat counterfeiting are largely ineffective - the US is seizing just a tiny fraction of the fake goods imported from the worlds' leaders in product imitations — China and Hong Kong. Technological solutions and methodological changes are needed in order to provide more transparency for the consumer in verifying the product's origin.

Problem

Web3 concepts, while becoming more popular every year, are still a gray area for many companies. They lack the necessary insight into the industry and how they can leverage its solutions for their business is among the biggest reasons. The lack of information also leads to the common belief that integrating such concepts in the traditional operational chain is and that the degree of complexity is very high and it is only possible through considerable monetary investments. Manufacturers need simple solutions and more assistance in onboarding, which would reduce the initial friction and entry barriers and allow them to quickly get into the world of possibilities offered by Web3 technologies without too much effort.

Problem

NFTs hold a great potential and a wide scope of use cases, yet most manufacturers are only utilizing them as a marketing tool. Their implementation beyond that is often overlooked and both consumers and manufacturers are losing out on the full potential the concept holds. Furthermore, the application of NFTs in the context of anti-counterfeiting remains challenging due to the boundaries of the technology and the highly fragmented market.



The solution

Qrbp is an ecosystem for verification of authenticity and ownership utilizing concepts from Web3, eCommerce and the authentication industry to provide manufacturers and consumers with a solution to the rising issue of counterfeiting. Through our immutable product certification methodology, we will offer leading manufacturers in multiple product categories ranging from fashion to electronics, cosmetics, jewelry and many others the possibility of offering a forgery-proof confirmation of authenticity and originality to their products. We are utilizing dynamic QR codes that redirect upon scanning to customizable NFTs that are created specifically for each separate product and contain unique metadata. This way every customer - including resellers and their buyers on secondary markets - will be able to see who the creator of the NFT is, verify the ownership chain and confirm who the current owner of the token is. The ultimate goal is to provide the best possible way for certification of authenticity by removing a wide array of points of failure in current traditional systems that can be exploited by counterfeiting actors.

One of the main pillars of the Qrbp ecosystem will be the full-fledged B2C and C2C marketplace where both manufacturers and consumers will be able to buy and sell products and their accompanying NFTs. The marketplace will be designed according to the latest standards in eCommerce from a UX / UI standpoint and the utmost degree of security currently offered by web technologies and blockchain. In its initial stage, manufacturers will be able to sell products to marketplace users. The same products will then also be resellable by the buyers, creating a secondary economy. At a later stage of the project development, we will provide both manufacturers and normal users with the possibility of creating their own shop page, similar to leading marketplaces like eBay.

The project will further expand the full potential of NFTs in creating incentives, maintaining a loyal customer base and maximizing its CLV (customer lifetime value). We will also implement a comprehensive gamification programme that will reward users for their continuous contribution through various prizes.

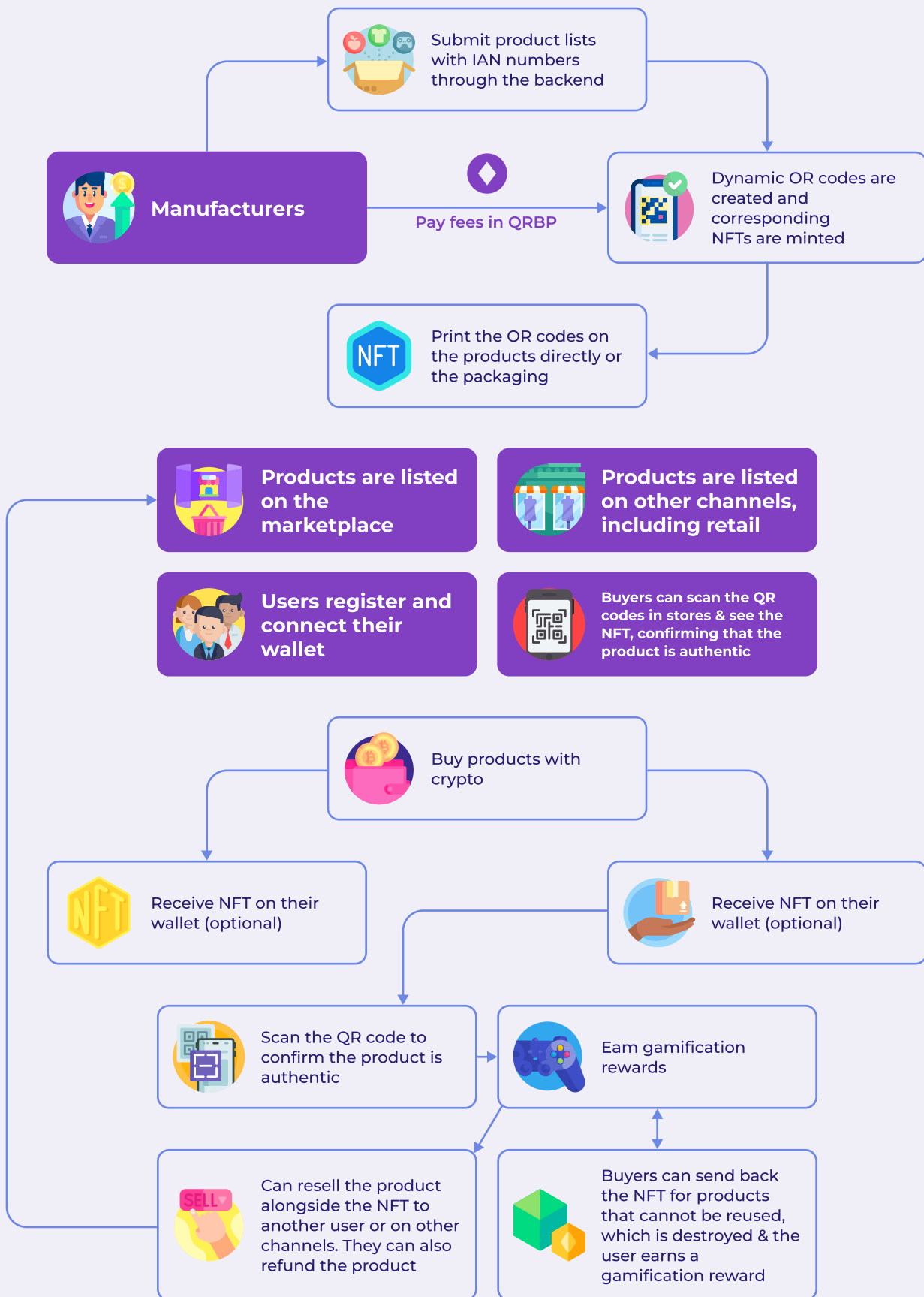


The QRBP token will be a utility token used as a payment method for a variety of services within the ecosystem, such as purchasing products at a discount. Some functionalities, like requesting NFT collections and QR codes by manufacturers will be only obtainable against the QRBP token.

The Qrbp project creates a full-fledged ecosystem focused primarily on the main mission of the project — maximizing the fullest potential of counterfeiting prevention through the latest advancements in technology. Our system is designed to work throughout the whole product lifecycle - from the initial sale of the product through various channels directly from the manufacturers, to retailers and all the way to the secondary C2C market. Here is an overview of the ecosystem and how it works:

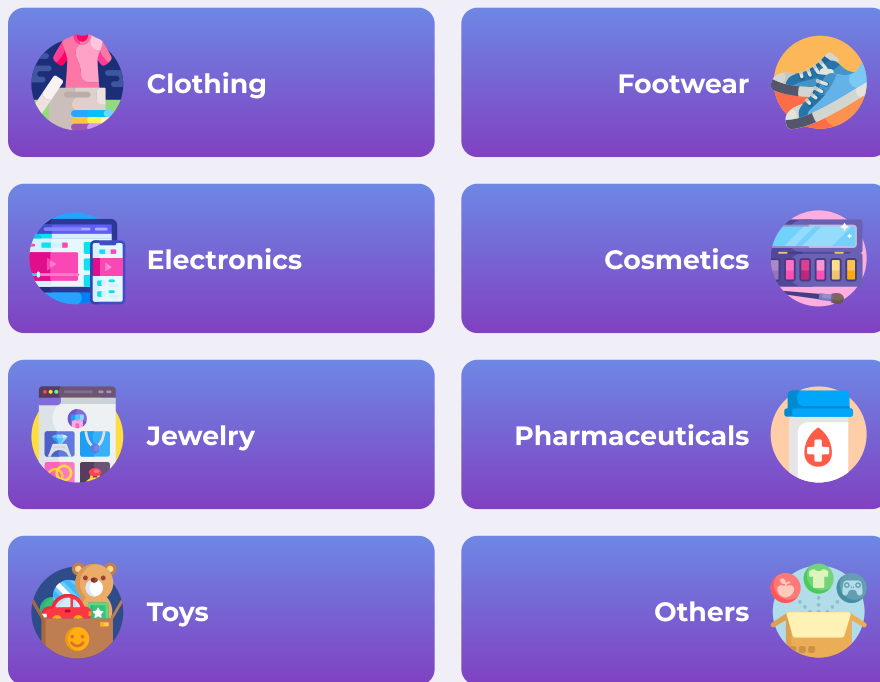


THE QRBP ECOSYSTEM

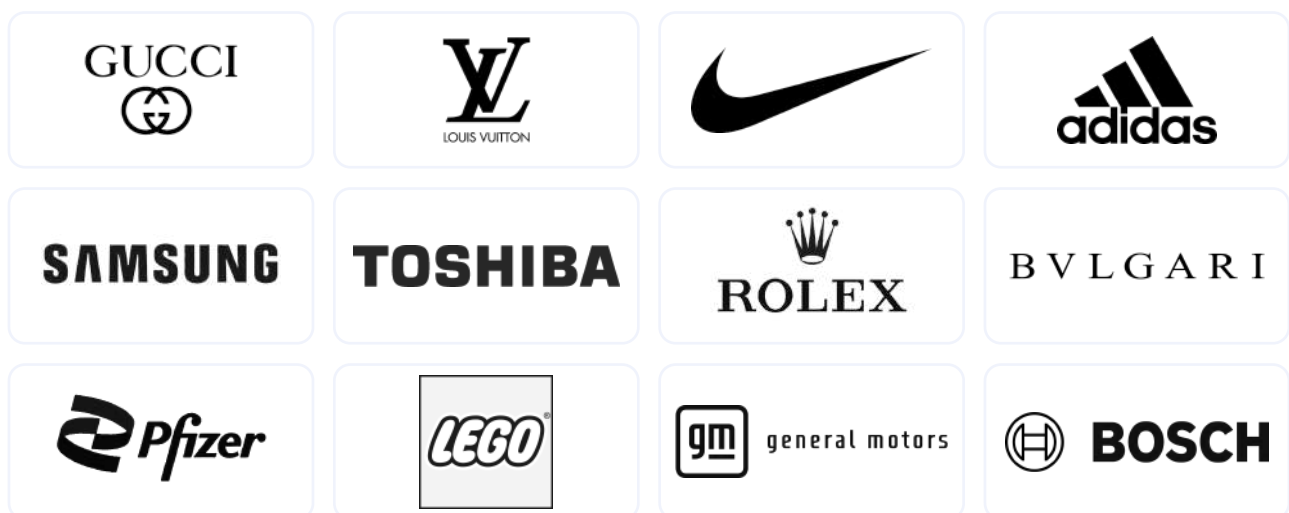




PRODUCT CATEGORIES



We are planning on targeting some of the leading manufacturers in the aforementioned categories that are currently suffering the most from counterfeiting. Here is a short list of several brands that will be focusing on in the early stages.





Problems and solutions at a glance

Problem

Counterfeiting has become one of the biggest criminal sectors in terms of monetary value. Manufacturers and consumers are losing billions of dollars every year and the dangers to human health and the environment caused by product imitations are getting increasingly worse.

Solution

Qrbp will resolve the issue with counterfeiting through a unique methodology that utilizes blockchain and NFTs to create tamper-proof product authenticity certifications. The project further utilizes eCommerce concepts like marketplaces where manufacturers can list their products.

Upon purchase, every buyer receives the product they have paid for, which has a dynamic QR code embedded either directly on the product itself (suitable for textile products and footwear) or on the packaging box (electronics). The buyer can scan this code after the product is in his possession, which reveals the unique NFT corresponding to it. The non-fungible token contains important information such as who the creator of the NFT is and the current owner, which cannot be tampered and acts as proof of authenticity. The buyer can also request to buy the NFT alongside the product, the conditions for which can be freely defined by the manufacturer. In this case, the buyer receives the NFT on their wallet and gets benefits similar to owning a Digital Twin of the product they got.

The NFT contains metadata that is customized by the manufacturer and its code is specifically programmed to include information about the physical product it goes hand in hand with. What is more, buyers can resell products alongside their NFTs to other users on the marketplace.



Problem

Current mechanisms for counterfeiting prevention are not efficient enough. Only a tiny fraction of the fake products that flood the US and EU markets are seized.

Solution

Companies that opt for the Qrbp ecosystem and the methodology we introduce have the chance of issuing product series that are nearly impossible to be copied or faked. Counterfeiting criminals will have to also create the whole workflow of the dynamic QR code and tie them to NFTs that look authentic. Additionally, buyers can confirm who the creator of the NFT is, as well as its current owner. The user can thus become aware if the creator is not Qrbp or the chain of ownership does not confirm the NFT was in the manufacturer's possession. Furthermore, manufacturers can insert metadata into the NFTs that can distinguish their products from fakes more easily.

Qrbp is thus introducing a whole new methodology of how the issue with counterfeiting can be resolved - not by chasing after fake products and their distribution channels, but by entirely shutting down the concept by utilizing the power of blockchain technology.

Problem

Difficult access to Web3 concepts for traditional manufacturers due to perceived high complexity and lack of knowledge in terms of implementation options.

Solution

We make it super easy for manufacturers to get into the world of possibilities offered by Web3 through a simple process, a thorough onboarding procedure and seamless integration of the concept to their existing operational chains. The idea is to reduce the initial friction as much as possible so that every company can start utilizing the potential Web3 is offering at little to no initial investments and risk.



Problem

NFTs are not utilized to their fullest potential, despite the numerous advantages they are offering beyond just marketing value.

Solution

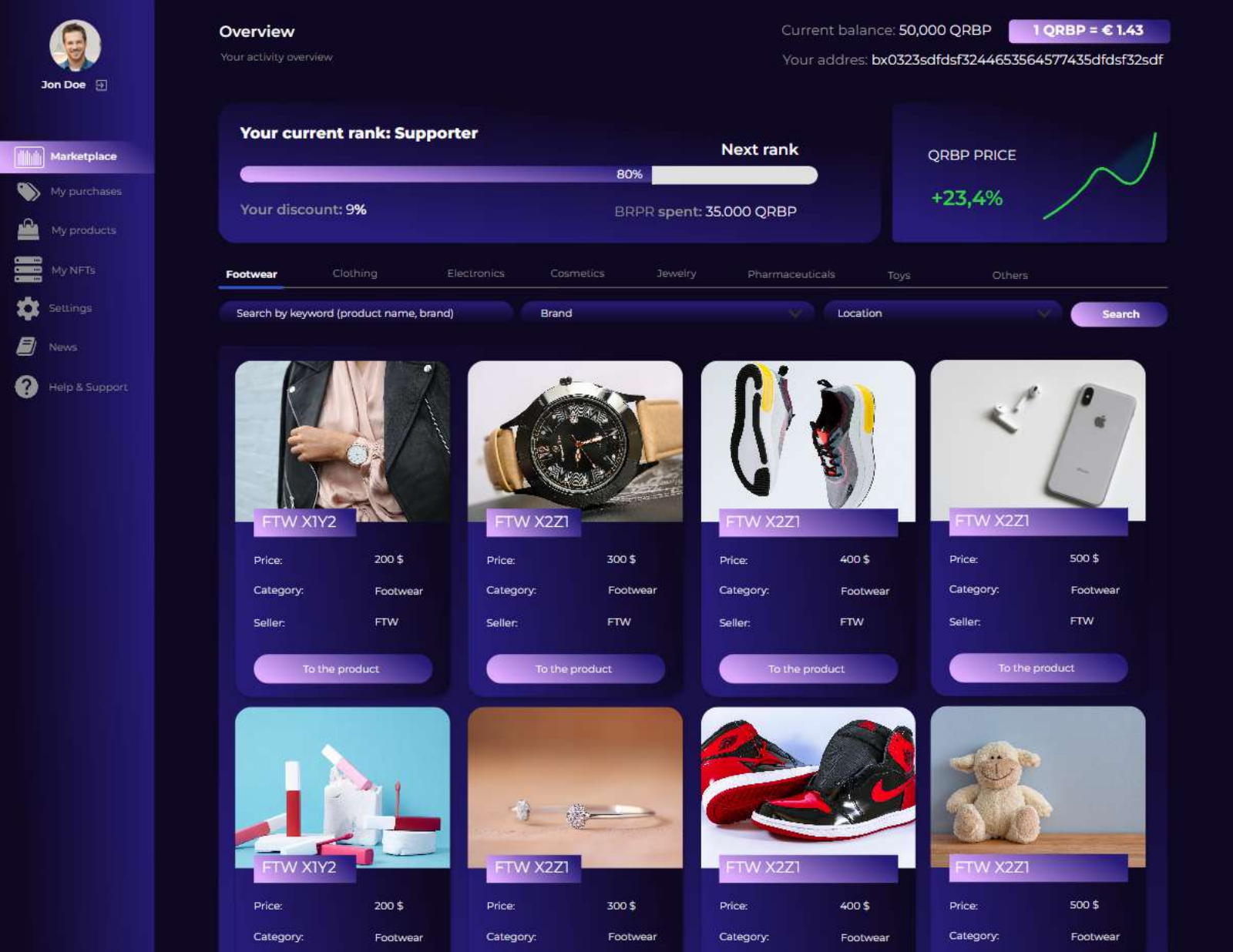
We utilize NFTs in the fight against counterfeits - by providing an unique NFT corresponding to each product, every buyer will have a proof of authenticity of the product they bought. We are also providing the possibility for manufacturers to have a more transparent and optimized supply chain by including any information in the metadata of the NFT they deem important to certify the origin of the product. This can provide a variety of marketing benefits and improve their overall margins.

The marketplace

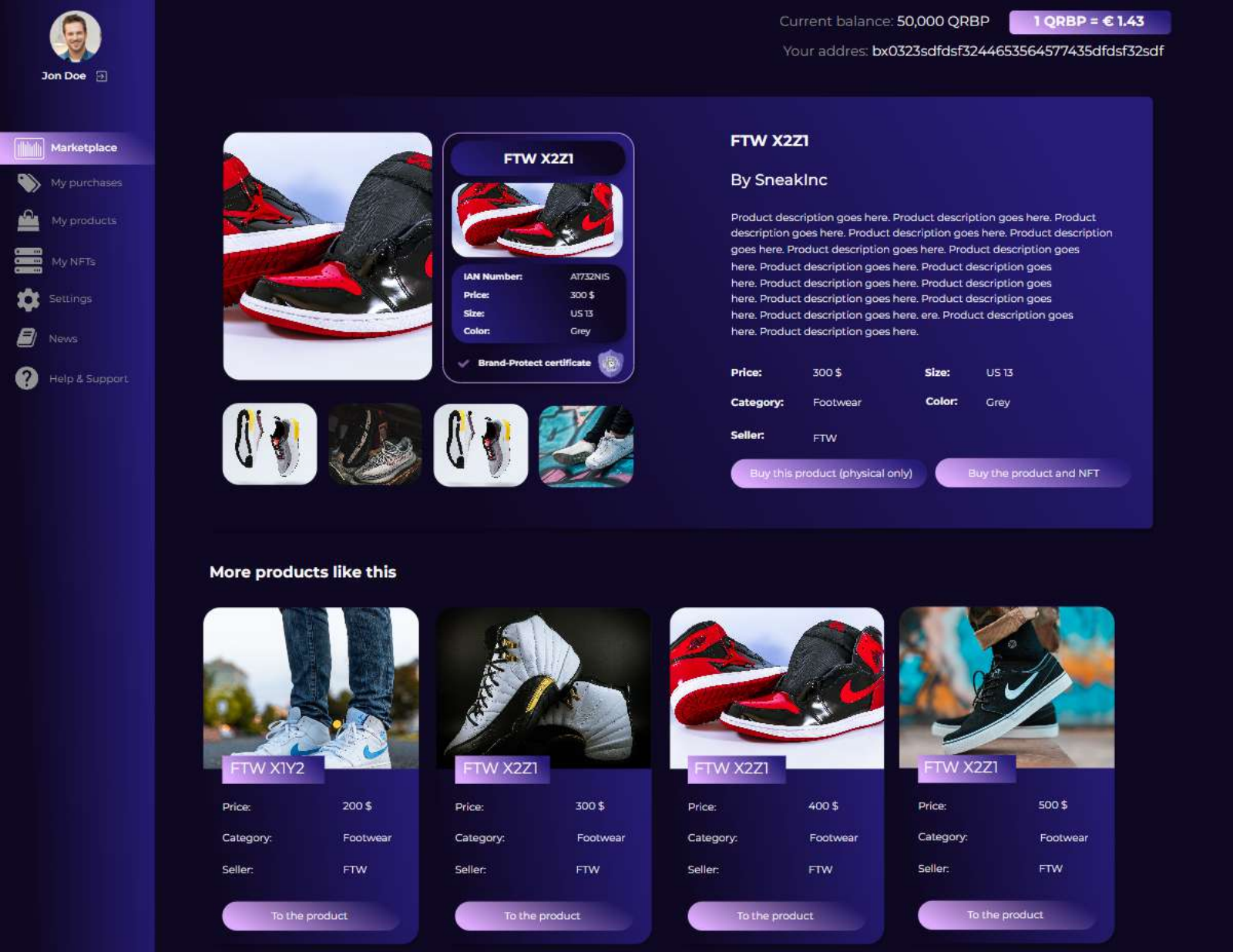
The marketplace will essentially be similar to eBay or Amazon and will list all related products from partnering manufacturers (B2C), as well as the products that buyers are reselling (C2C). Users will be able to acquire these products with a variety of crypto payment methods, however, they will get a discount with QRBP tokens. We are planning on offering a broad scope of possibilities for product listings, inventory, order and customer relationship management tools for manufacturers, while securing a seamless, easy UX and UI on the front end for the user side.

It will be possible for users to resell products alongside their accompanying NFTs they have already acquired on the marketplace from manufacturers. At a later stage, users verified as vendors will be able to create their own landing pages where they can showcase their products, similar to eBay. Furthermore, users will be able to sell their own products on the marketplace, for which they can request Qrbp to mint a corresponding NFT or a full collection if more products are to be listed. The service will be available against a fee that can only be paid in QRBP tokens.

Here is what the web version of the marketplace could look like. Keep in mind that the prototypes presented below are experimental and a work in progress - the final version could look different.

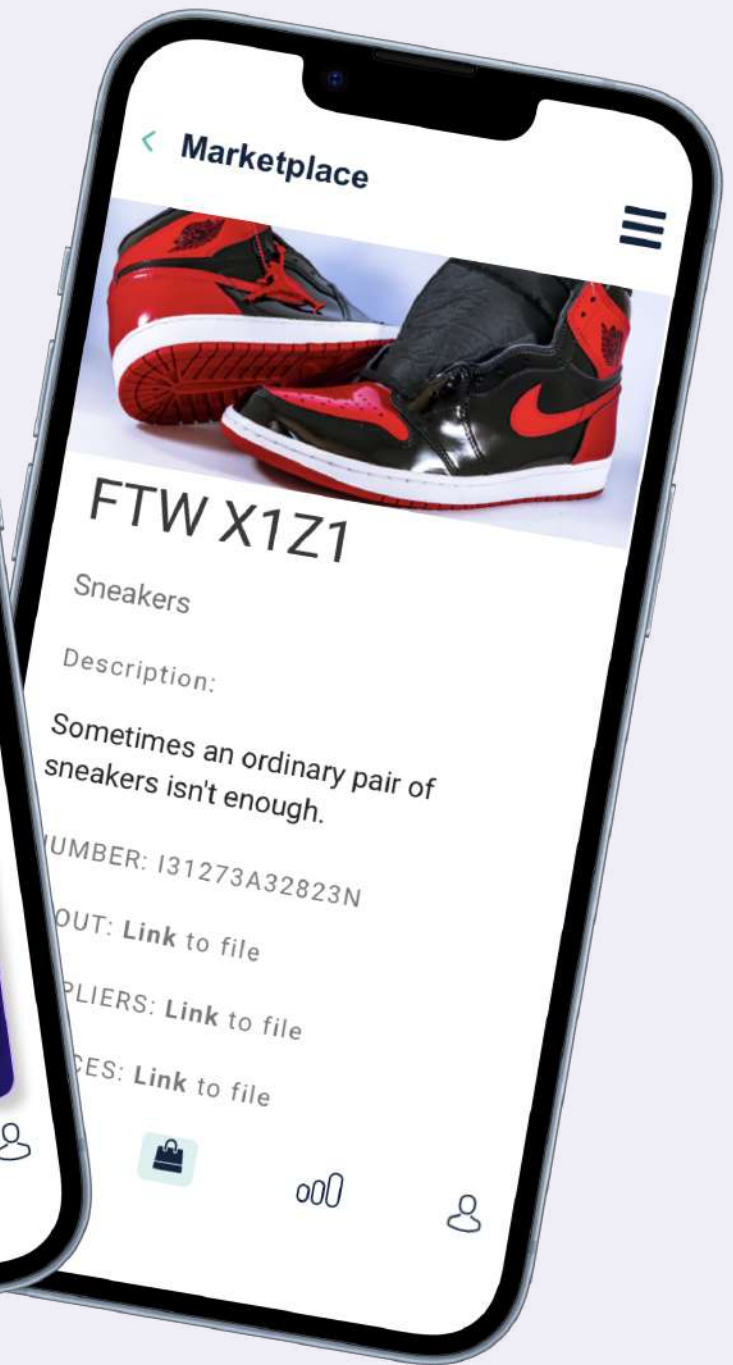
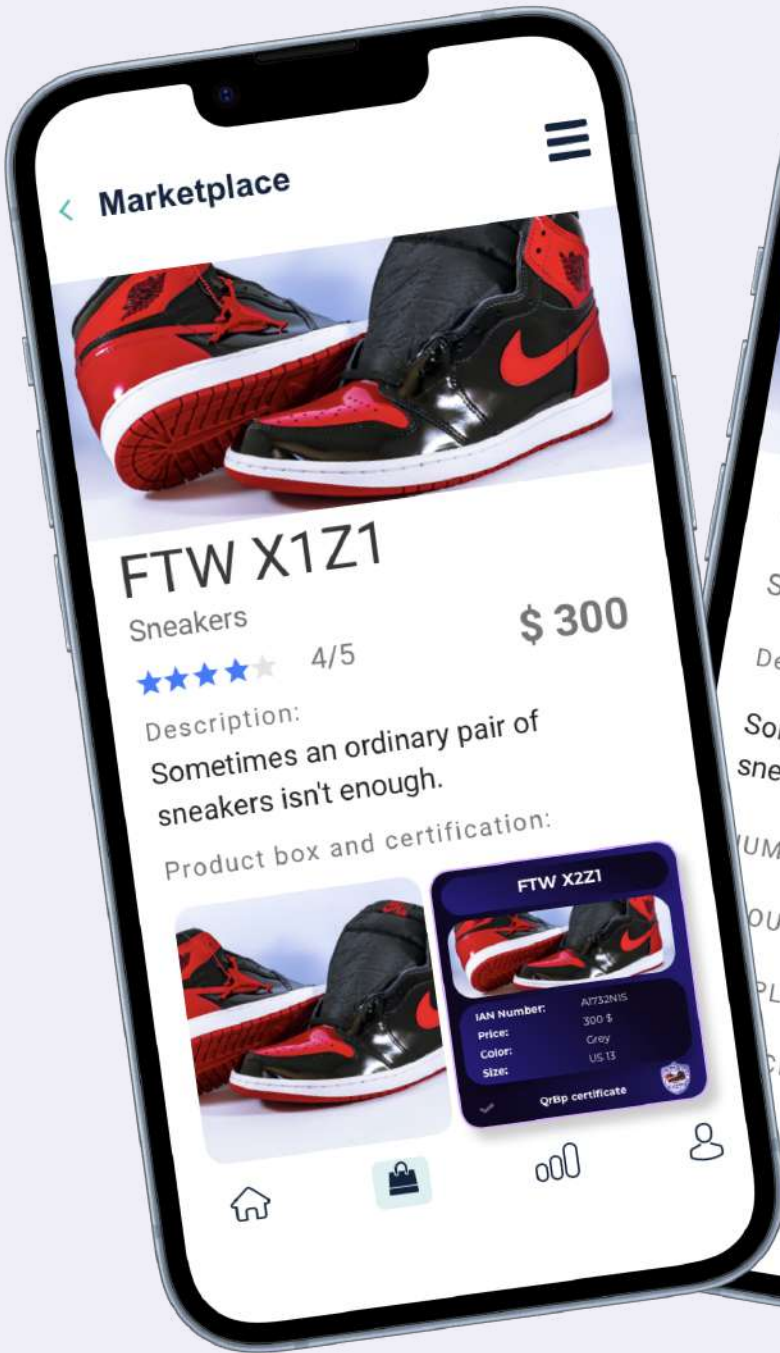


Prototype: The search results page (web version). Users will be able to filter per product category, location, manufacturer. We will ensure an interactive search engine and various sorting options for every category.



Prototype: The product detail page (web version). Users will be able to see the full product description, product images, shipping conditions and other relevant information. Additionally, buyers will be able to see a box with the product certification, right next to the main product image. They will have the option to also order the NFT with the product and to see that they are also acquiring the product certificate alongside it.

Below is an example of the product detail page on our mobile app (left), which will be developed in the future. Under every product the customer can see what the QR code looks like, as well as the accompanying NFT. On the right we have displayed an example detail page of the NFT corresponding to the product, including some example metadata.





Jon Doe

Current balance: 50,000 QRBP

1 QRBP = € 1.43

Your address: bx0323sdfdsf3244653564577435dfdsf32sdf

Marketplace

My purchases

My products

My NFTs

Settings

News

Help & Support

FTW X2Z1



IAN number: A1E323da
Price: 300 \$
Size: US 13
Color: Grey

QrBp certificate

FTW X2Z1

Product certificate

1. Scan the QR code that you will find on the sole of the sneakers
2. You will be redirected to the NFT associated with it
3. Look for the Creator name (Brand-Protect) and the Owner name (FTW)
4. Verify that the Metadata matches the one specified by your manufacturer

Detail Page

1. Scan QR



2. See NFT



3. Check data




4. Verify



Prototype: The product certificate detail page.


FTW V5SA
Powered by Nike



IAN Number: Z1732NIS
Price: 220 \$
Size: US 13
Color: Red

QrBp


FTW V5SA
Powered by Dior



IAN Number: Z1732NIS
Price: 220 \$
Quantity: 5
Color: Red

QrBp

FTW V5SA
Powered by Rolex



IAN Number: Z1732NIS
Price: 220 \$
Size: 26
Color: Red

QrBp

Prototype: Examples of product certificates.



Jon Doe

Current balance: 50,000 QRBP 1 QRBP = € 1.43

Your address: bx0323sdfdsf3244653564577435dfdsf32sdf

Marketplace

My purchases

My products

My NFTs

Settings

News

Help & Support

FTW X2Z1

IAN Number: A1732NIS
Price: 300 \$
Size: US 13
Color: Grey

QRBP certificate

FTW X2Z1

Owned by: FTW

Creator: Brand-Protect

Description of the product. Description of the product. Description of the product. Description of the product.

Color: White

Materials: Cotton

Additional materials: Wool

Size: US13

Manufacturer: FTW

Eco: Yes

Contract

```
pragma solidity ^0.8.9

contract FTW X2Z1 is ERC721 {

function ownerOf(tokenId) returns address

function token URL() returns string;

}
```

Metadata

```
#### Generate Metadata for FTW X2Z1 =
open(/metadata/all-traits.json) data =
json.load(f) # Changes this IMAGES_BASE_URL
to yours IMAGES_BASE_URL =
"https://gateway.pinata.cloud/ipfs/Qmb86L8mUp
hwjCzLPwXNTRIK1S4zcBdj9cc25ev3e8uLlB/"
```

Prototype: The NFT detail page of the product containing the information specified by the manufacturer, the contract details and the Metadata.

CORE FUNCTIONALITIES

The marketplace will have a full-fledged search functionality for every category with different filters, comprehensive product detail pages, auction option allowing buyers to bid against each other, reviews and many others.

Users will have their own accounts with personal information, option to connect a third party blockchain wallet (we will provide a wide array of integration possibilities to ERC721 supporting wallets), history of transactions, favorites, reviews and others. Additionally, users will have a variety of cosmetic options they can display in the interaction with others on the marketplace - such as profile badges, profile frames, and titles.

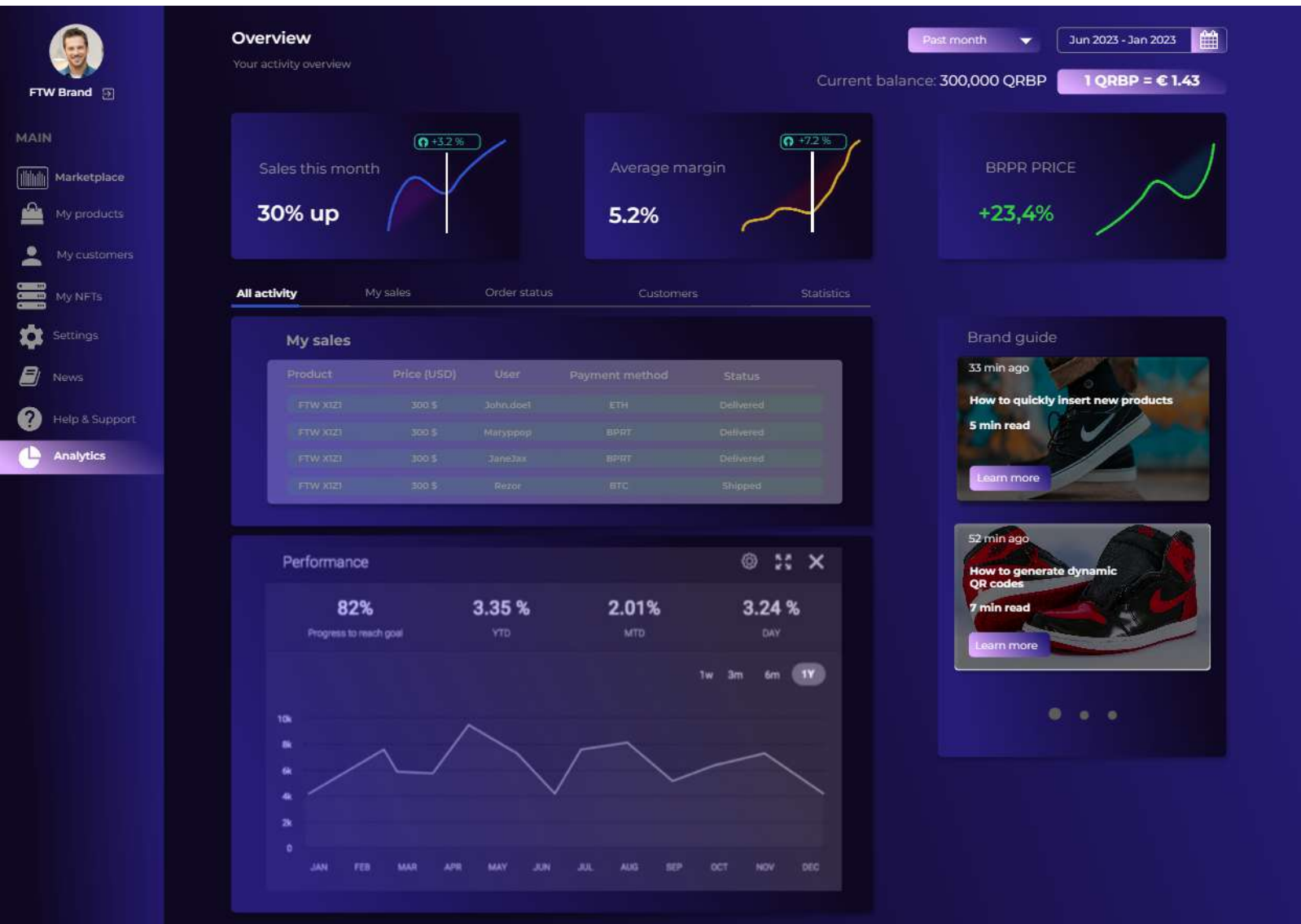
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Qrbp Whitepaper



ANALYTICS DASHBOARD FOR MANUFACTURERS

Every manufacturer will have access to an analytics dashboard where they will get the full information of their sales. We will be implementing a variety of inventory management tools, integration to external CRM providers and many more.



ADVERTISING

We will also provide the possibility for manufacturers to advertise their products for better placements in the search results of the marketplace. Fees will be paid in the native token for every successful ad that has generated click (PPC Pay Per Click model).



How it works — for manufacturers

STEP 1: ONBOARDING AND SUBMISSION OF PRODUCTS

Manufacturers will be onboarded through one of our key account managers and then instructed on how the Qrbp ecosystem works. The first step is to submit their product info to Qrbp with their names, descriptions and corresponding IAN numbers. Manufacturers can also submit the metadata they want to have embedded in the NFTs that we will mint for each separate product.

STEP 2: QR CODE GENERATION

We will create a unique, dynamic QR code for each product that is customized specifically to the preference of the manufacturer. The QR codes will be added by the manufacturer either directly on the product discreetly (mostly applicable to fashion products), or, if the product itself does not allow it, on the product packaging (applicable to electronic products for example. We will allow manufacturers to have customizable QR codes that would allow them to break free of the black and white design and stale feel of traditional QR codes. Here is example that has been customized to fit the product it has been attached to, in this case a pair of sneakers:





We will implement dynamic QR codes, which would allow for advanced functionalities such as information about when the code was scanned and where. Implementing dynamic QR codes will provide a more transparent chain of ownership - for example, a product can be only sold as second hand if it had one single owner before that. The same can also be double-checked and confirmed by the chain of NFT ownership. Because scanning the code from another device will be recorded, it won't be possible to resell used products as new. The new buyer will be able to easily deduce whether this is true or not.

Dynamic QR codes will also provide the possibility of unlocking unique rewards upon their first scan. This will provide an additional incentive for manufacturers to implement various collectible rewards based on customer loyalty. It also goes hand in hand with our gamification programme.

STEP 3: NFT MINTING

After the QR codes have been created, we will then mint a collection containing a unique NFT for every product, which is then sent to the manufacturer. The NFTs will include the link to the physical product in the smart contract, tying the token to the actual product based on its unique ID. Because the ownership chain and transaction history of NFTs can be traced transparently, everyone will be able to see who the creator is, where the NFT was sent afterwards and who is currently the owner. This practically eliminates the possibility of counterfeiting if the users follow the simple methodology of:

1. Confirming that the CREATOR of the NFT is Qrbp and
2. Confirming that the NFT was first sent to the manufacturer they are buying the product from. If the buyer is acquiring the product directly from the manufacturer, then he can confirm that he is the current owner as well.

An identical principle can be applied to the secondary market - for example, a seller reselling a product claiming it is original and had only one single owner can be verified by the buyer by:

1. Confirming that the CREATOR of the NFT is Qrbp



2. Confirming that the NFT was first sent to the manufacturer they are buying the product from and
3. Confirming that the NFT was not sent after the manufacturer's transaction and that the current owner is the seller they are getting it from

NFT CUSTOMIZATION

All NFTs can be adapted to the preferences of the partner, who can fully customize the metadata. This data can include a variety of information about the product, including its dimensions, origin and other info about the whole supply chain if the manufacturer wants to provide higher transparency for the customer.

Furthermore, manufacturers will have the flexibility of adding additional incentives through the NFTs — such as specific rewards for users who have acquired multiple products from a specific collection. These rewards can be numerous - from additional digital collectibles to physical products and even highly exclusive rewards such as a personalized letter from the CEO or a visit to the company's headquarters. The idea of implementing completion awards and custom gamified collection experiences that are unique for each manufacturer can be transformed into a powerful marketing tool that will allow manufacturers to leverage the full potential of their customer base.

The manufacturer will have to pay for the service with the QRBP token, which will be the only possible payment method for the service. Gas fees will not be included in the fee.

We will provide manufacturers with a customized experience, allowing them to choose how they would like to have their NFTs created and adapted to their preferences. Some of the information that can be included in the metadata is, but not limited to:

- **Image:** The NFT will contain the main product image.
- **Product ID:** The unique product ID serves as another verification tool, confirming that this product is the one corresponding to the NFT.



- **Text information:** A text description of the product.
- **Multimedia information:** Any further multimedia information such as videos, images, gifs and others can be embedded.
- **Manufacturing information:** The manufacturer is free to insert any information related to the manufacturing of the product, including what materials were used, where they came from, where the product was made, how it reached its end destination, who the suppliers along the supply chain were, how much each was paid and others. This allows the manufacturer to decide the degree of transparency it is willing to offer to the buyers.

STEP 4: LISTING ON THE MARKETPLACE OR ON OTHER CHANNELS

The products are listed for sale by the manufacturer. Once a user buys one of the products, the manufacturer ships it to the purchaser. If the buyer has also requested the NFT corresponding to the product, he receives it alongside the product. Manufacturers have to account for the gas fees related to sending the NFT, which they can decide to shift to the buyer, cover themselves or split it.

Manufacturers have the possibility of selling their products and corresponding NFTs through any channel they want. We do not force them to use the Qrbp marketplace - our system is designed to work with every online channel and even offline channels, such as retail stores. Because scanning the QR code itself does not give ownership of the NFT, store visitors can confirm the authenticity of the product. If, for example, the potential buyer wants to confirm that a piece of clothing is indeed by the advertised brand, they can scan the QR code that is discreetly placed on the clothing and immediately see the corresponding NFT. Based on the aforementioned criteria and the metadata they can then confirm whether the product is real or fake.



STEP 5: PRODUCTS BUYING

If the buyer also requested the NFT alongside the product, he receives it in his wallet. He can then scan the dynamic QR code to confirm that the product and the NFT match. The process is easily executed, as the NFT is sent to the user to the same wallet that they used to do the purchase.



Additional target groups that we are planning to target in the future are various public and government agencies such as customs. With the current traditional security systems, they manage to detect only a fraction of the full scope of counterfeit products that are shipped around the world. Qrbp will provide them with a transparent and an immutable way of verification, which would dramatically increase the average success quota in preventing fake goods from entering the markets.

We will develop a separate dashboard that will have different functionalities adhering to the needs of these target groups. Depending on the size of the agency or organization, we will also provide the option for custom dashboard development, which will allow them to adapt it to their needs and preferences. This will ensure an easier integration within their existing structures and processes, as well as shorter time frames of employee training on how to operate it, which is especially useful for larger organizations.



How it works — for users

STEP 1: REGISTRATION

Users register on the marketplace and connect their preferred wallet. The marketplace will initially support external wallets that are compatible with ERC721 tokens such as Metamask so that they can also receive the NFTs accompanying the products directly.

STEP 2: PURCHASING

The buyers decide to buy a product on the marketplace. They can use a variety of cryptos to pay for it, but using the QRBP token yields discounts of at least 5%. The buyer can choose to either just purchase the physical product or to also receive the NFT sent to his wallet. Requesting the NFT is connected with additional costs that the manufacturer defines.

STEP 3: DELIVERY

The buyers receive the product, and, if they also opted for it, the NFT as well. They can scan the QR code on the product to confirm that it is authentic, as it would lead them to the NFT they have in their possession with the same metadata and product ID. Additionally, upon scanning the dynamic QR code, the buyer can also receive a reward if the manufacturer has decided to offer one. These rewards can be purely digital NFTs or even such connected with physical products, allowing the owner to also receive a gift from the manufacturer - for example a limited edition t-shirt. With dynamic QR codes, it is possible to distinguish the first scan of the QR from consecutive scans so that only the initial owner is eligible to the reward the manufacturer has decided to give away. This enables additional customer engagement elements to be implemented through collectible rewards.

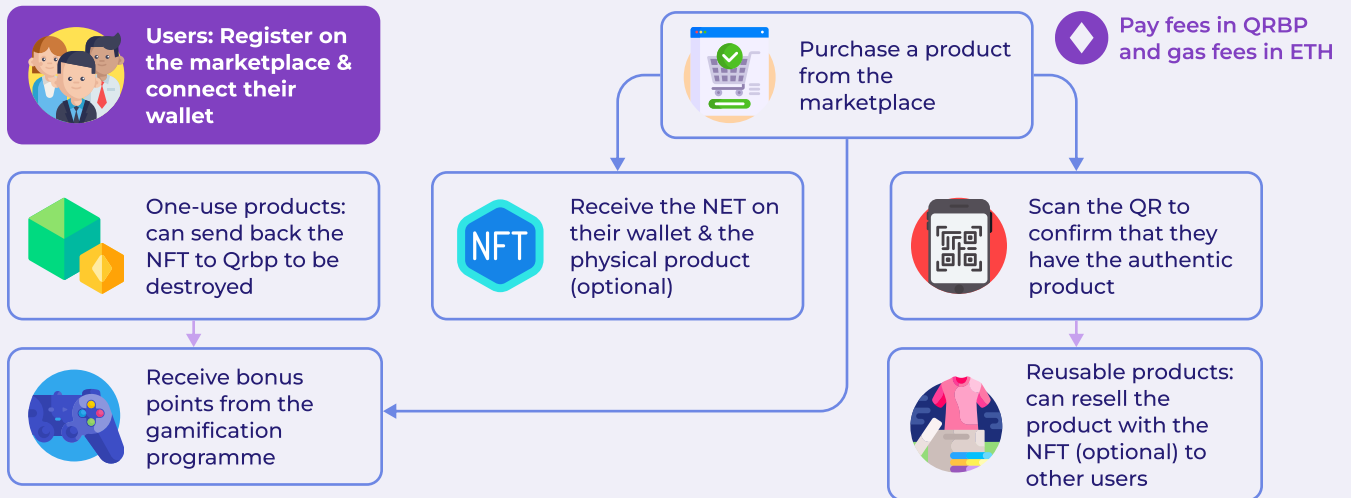
STEP 4: RESELLING

The buyers can resell the product to another user on the marketplace. If they have opted to receive the NFT as well, they can also send it to the wallet of the new buyer. The conditions for this are defined by buyer and seller directly - whether there will be an additional fee or not, basically repeating the same process manufacturers initiated.

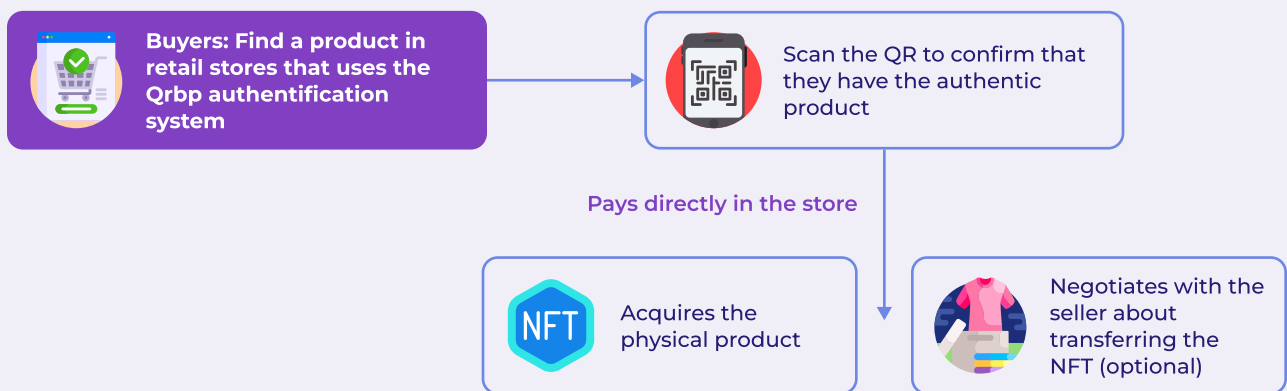


STEP 5: NFT BURN

Products that cannot be resold (such as perfumes) allow NFT holders to send back the NFT to Qrbp to be destroyed, for which they receive points adding to their gamification rank. They can also keep the NFT if they wish to sell it in the future — this could be advantageous if it was related to a unique product series or a luxury product.



The process for buyers if they purchase via the Qrbp marketplace



The process for buyers via traditional channels.



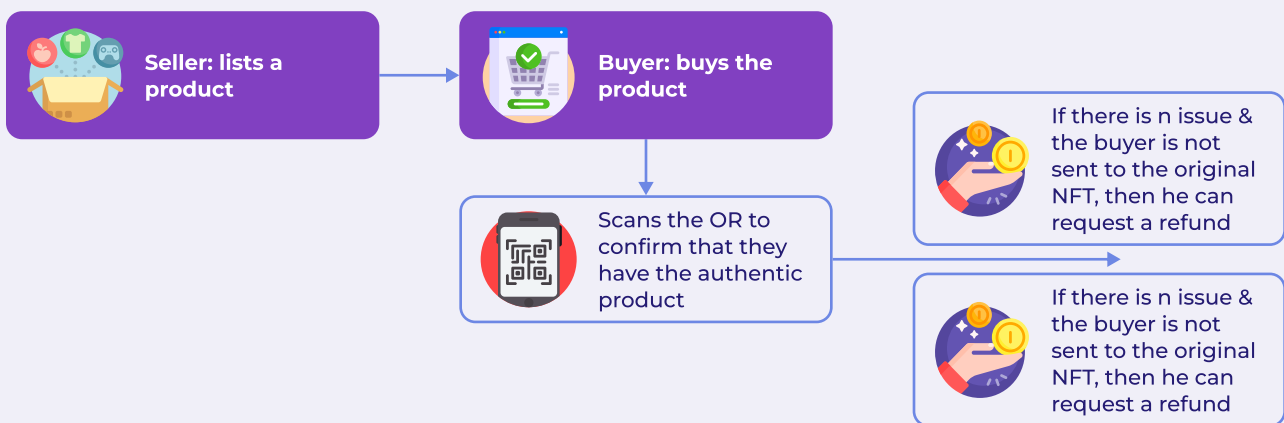
How it works — secondary market (reselling products)

We are ensuring the full integrity of the products even in the secondary C2C market and allow consecutive buyers to verify the ownership chain. Scanning the NFT reveals the NFTs metadata and gives access to information to the buyer which enables him to see who the creator of the NFT is (Qrbp), whether the manufacturer was second in the ownership chain right after the creator, as well as to confirm how many owners the NFT had before the current seller. For the first time it will be impossible for sellers to deceive buyers by selling a product claiming they are its first owner.

We will offer buyer protection on our marketplace under specific conditions, similar to how many payment providers today operate. To further provide a higher degree of security, we will only allow verified sellers to resell products on the Qrbp marketplace.

Our system knows no boundaries - the integrity of the secondary market beyond our ecosystem can still be ensured with our dynamic QR codes and NFTs, as these can be scanned and viewed regardless through which channel the product was acquired.

SECONDARY MARKET





How it works — returning products

Buyers who are unhappy with their products can return them to the manufacturer they have acquired it from. If the return conditions are met, they will also receive the purchase price back.

If the buyers have also requested the NFT that corresponds to the product, they will have to send it back alongside the product and account for the gas fees incurred in the process. If the product was defective, these costs will also be compensated by the manufacturer. Buyers who send products that are not accompanied by the NFT - if they acquired it in the first place - will not be reimbursed.

Products that are sent back can be resold without restrictions, because the process of dynamic QR code scanning the viewing the NFT is not compromised.

Gamification

We will implement a gamification programme that will reward users for their contribution to the Qrbp ecosystem based on the amount of tokens spent. Every token spent will yield a variable amount of virtual points, based on which the user will be able to advance in the ranks. The token price will influence the amount of points the user can get - a higher token price will result in more points awarded to the user for a token spent. Users will get access to multiple cosmetic options (badges, statuses), discounts within the ecosystem, unique NFT drops and many more.

Every user will have a baseline of 5% discounts on all purchases within the ecosystem if the QRBP is used for purchases. Ranks from the gamification system will add further discounts on top of these 5%, with a maximum of 13% at the highest ranks.



Rank hierarchy	
Qrbp Novice	<p>The user has collected 10,000 points.</p> <p>Rewards:</p> <ul style="list-style-type: none">• +2% discount on all purchases with QRBP tokens• Unique profile frame, badge and title• Monthly NFT drops from the Novice NFT collection
Qrbp Pro	<p>The user has collected 25,000 points.</p> <p>Rewards:</p> <ul style="list-style-type: none">• +4% discount on all purchases with QRBP tokens• Unique profile frame, badge and title• Monthly NFT drops from the Supporter NFT collection
Qrbp VIP	<p>The user has collected 100,000 points.</p> <p>Rewards:</p> <ul style="list-style-type: none">• +8% discount on all purchases with QRBP tokens• Unique profile frame, badge and title• Monthly NFT drops from the VIP collection• A unique NFT created exclusively for the user that will be customized beforehand based on his preferences• Exclusive rewards from the Community pool

The QRBP token

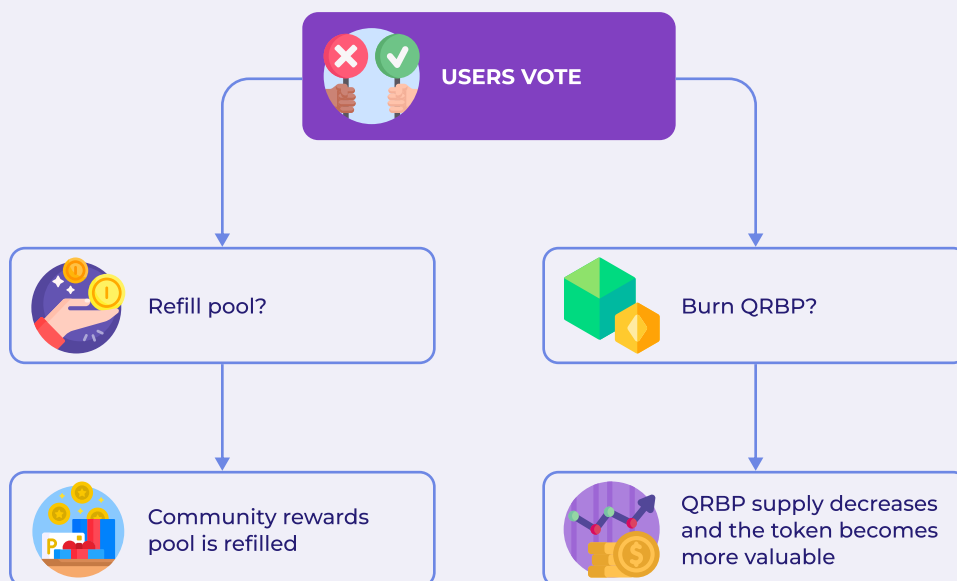
The QRBP token will be the main, but not single, instrument to facilitate transactions within the Qrbp ecosystem. The token will be used for the facilitation of purchases of products on the marketplace at discounted rates and as a reward mechanism through loyalty points and a gamification program with different tiers that the users can advance into. Furthermore, the token will have several unique use cases that are exclusively reserved to it:

- Facilitating QR code generation and minting fees for NFT collections for manufacturers
- Payment for custom NFT creation for buyers who want to insert their own products on the marketplace
- Grant exclusive access to additional content



We have designed a tokenomic structure that aims to support the long-term sustainability of the token. QRBP will have a fixed supply and will additionally adopt several mechanisms such as buybacks and token burning. With 30% of the net revenue, Qrbp will buy back QRBP tokens from exchanges and store them in a special pool, from where they can either be burned or added to the Community reward pool (which initially will hold 10% of the total token supply). A voting round will then be hosted on the marketplace, giving every user one vote to cast on the decision how the bought back tokens will be used.

QRBP BUYS BACK ORBP WITH 30% OF THE NET REVENUE





Patent registration

We are planning on patenting our name, as well as the way of displaying the product and its accompanying certification on both the web and the mobile applications.

The product card features a large image of a black and red sneaker with a white sole. To the right, a smaller image shows a pair of the same sneakers. Below the images, the product name 'FTW X2Z1' is displayed. A table lists the following details: IAN Number: A1732NIS, Price: 300 \$, Size: US 13, and Color: Grey. At the bottom, there is a checkmark icon, the text 'Qrbp certificate', and a shield-shaped logo.

FTW X2Z1	
IAN Number:	A1732NIS
Price:	300 \$
Size:	US 13
Color:	Grey

✓ **Qrbp certificate**

The patent application will commence latest before the end of Q2 2024, shortly after the development of the alpha version of the marketplace. The whole process will be financed through the legal funds reserved from the crowdsale.



Token sale

QRBP is a Utility token released on the Ethereum blockchain according to the ERC20 standard. A maximum of 269.047.619 QRBP will be issued.

General terms	
Token name	QRBP
Total supply	269.047.619 QRBP
Total for sale	76,5% of the total issue of tokens (205.833.333 QRBP)
Flat currencies accepted	EUR, USD
Cryptocurrencies accepted	BTC, ETH, USDT, USDC

The token sale will be carried out in three stages: Private sale, Pre-sale and Main Sale.

Private sale	
Dates	01.05.2024 — 30.06.2024
Hard cap in QRBP	33.333.333 QRBP
Price	0,06 €
Discount	40%

Pre sale	
Dates	01.07.2024 — 31.08.2024
Hard cap in QRBP	112.500.000 QRBP
Price	0,08 €
Discount	20%



Main sale	
Dates	01.09.2024 — 31.10.2024
Hard cap in QRBP	60.000.000 QRBP
Price	0,10 €

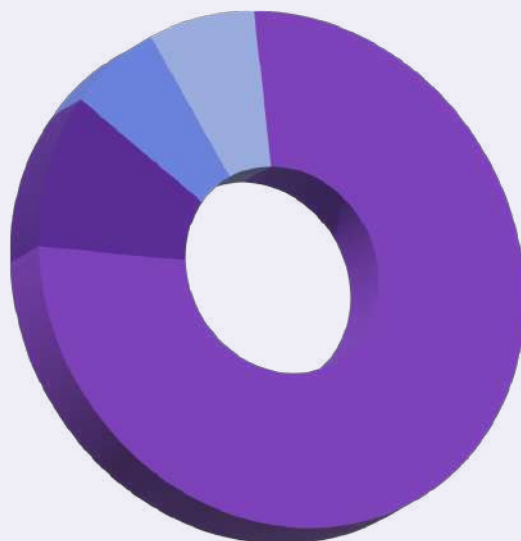
Unsold QRBP will be relocated to the next sale phases. At the end of the main sale, all tokens that are left unsold will be burned to prevent token holder dilution.

The crowdsale will be performed in accordance with the token purchase agreement as published and available on our website. Crowdsale participants will have to undergo the KYC procedure. Investments over \$10.000 are subjective to AML laws. Moreover, certain restrictions will apply for participants from various countries.



Token distribution

A total of **269.047.619 QRBP** tokens will be issued. These will be distributed as following:



- **Crowdsale — 76,5%**

70% of the total token distribution will be sold on the crowdsale on the 3 stages we outlined above.

- **Team & Advisors — 10%**

10% of the total token distribution will be saved for the team & advisors.

- **Liquidity — 6,5%**

10% of the total token distribution will be saved for liquidity purposes, such as exchange listings.

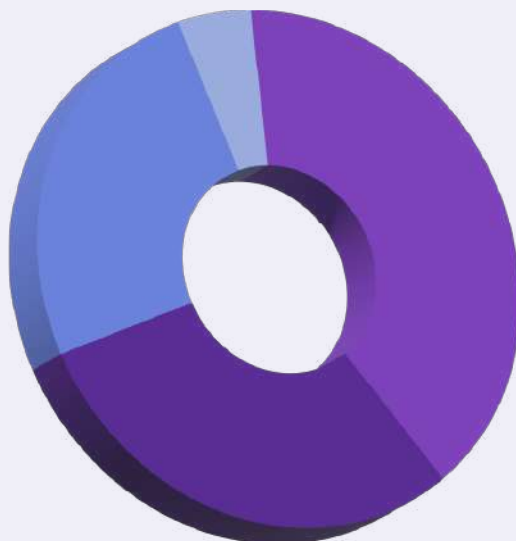
- **Community rewards — 7%**

10% of the total token distribution will be saved for various community rewards.



Funds distribution

The funds collected on the crowdsale from **selling 70%** of the total token distribution will be distributed as following:



- **Development — 40%**

We will dedicate 40% of the funds we collect towards the development of the Qrbp ecosystem including as many functionalities as possible from those we described earlier in this Whitepaper. Note that the total funding we manage to raise will define the scope of functionalities we will be able to implement, with higher funding translating into a broader scope and vice-versa.

- **Marketing — 30%**

30% of the funds will be dedicated to popularizing the project on a global scale via various marketing activities. As with the development expenditures, the scope and type of activities will vary based on the funding we manage to collect. This also includes negotiations with manufacturers and onboarding them on the ecosystem.

- **Operational costs — 25%**

25% of the funds will be reserved for operational costs including staff salaries, minting fees for the NFT collections for manufacturers and others.

- **Legal and patenting — 5%**

5% of the funds will be dedicated towards covering legal costs related to the Qrbp project, including patenting costs and fees.



Roadmap

Timeline	Timeline
May 2023	<ul style="list-style-type: none">• Technical development (Website, Investor dashboard, Smart Contract)• Smart contract audit
July 2023	<ul style="list-style-type: none">• Start marketing and community building
May 2024	<ul style="list-style-type: none">• Start Private sale
July 2024	<ul style="list-style-type: none">• Start Pre-Sale
September 2024	<ul style="list-style-type: none">• Main sale• Airdrop & Bounty campaigns
Q4 2024	<ul style="list-style-type: none">• Listing of QRBP on centralized exchanges• Start with the ecosystem development• Negotiations with leading manufacturers• Onboarding of the first 50 partners• First submissions of product batches and QR code generation
Q1 2025	<ul style="list-style-type: none">• Alpha version of the Qrbp ecosystem• Patent submission of the Qrbp name and technical infrastructure (marketplace)• Minting of the first NFT collections
Q2 2025	<ul style="list-style-type: none">• Full rollout of the Qrbp ecosystem• Mobile app development
Q3 2025	<ul style="list-style-type: none">• Further ecosystem development• Introduction of additional functionalities for users• Expansion of the gamification programme• Rollout of the mobile app• Onboarding of >100 further manufacturers
Q4 2025	<ul style="list-style-type: none">• Rollout of the Version 2 of the ecosystem



Team



Taner Bozkurt

CEO

- Serial entrepreneur with vast experience in fashion
- Extensive knowledge and work experience in brand relationship manager as Chief Brand Officer
- Passionate cryptocurrency advocate and investor
- Extensive experience with NFTs and Metaverse concepts



Lars Hensen

CFO

- Extensive experience in banking and fintech
- Passionate crypto trader and investor
- Deep knowledge of cryptocurrency concepts, especially in the area of Decentralized Finance (DeFi)



Dilara Konalka

CBO

- Extensive experience in PR and brand relationship management
- Customer relationship management and HR expert with 10 years of corporate experience
- Regional manager for 3 international businesses on 2 continents



Michael Manke

Legal expert

- Completed his legal education (LLM) in Germany and Norway
- Extensive working experience in Corporate law, prevention of money laundering, M&A, intellectual property law, media and technology law



Yulia Shershneva

Accounting expert

- Financial expert with focus on accounting and taxation
- Expert in financial and balance sheet accounting, payroll accounting, fixed asset accounting, controlling



Advisory board



Dimitri Haußmann

Blockchain advisor

- Founder of one of the leading agencies for blockchain development in D-A-CH
- Over ten successful ICOs with a total funding of >\$450M
- Vast experience in the technical development of complex projects
- Active on the cryptocurrency / blockchain markets for over 5 years



Martin Slavchev

Strategy advisor

- Strategy advisor and project manager for over 10 successful ICOs
- Extensive experience in blockchain and cryptocurrency concepts such as ICOs, STOs, DeFi, NFTs, Metaverse and dApps
- Passionate cryptocurrency trader
- and enthusiast with deep understanding of cryptocurrency and blockchain markets



Fabian Klein

Marketing Advisor

- Marketing advisor, project and community manager for five successful ICOs
- Extensive experience in PR, marketing and community building
- Passionate cryptocurrency trader
- and enthusiast with deep understanding of cryptocurrency and blockchain markets



Risks and concerns

RISKS OF EXTERNAL ATTACK

Unfortunately, scammers are very creative and inventive in their attempts to hack online websites of all kinds. Hackers are focused on finding and exploiting potential weaknesses. Attacks also extend to the open source algorithms of smart contracts, which is why we must consider the risk of attempted hacking of our platform.

REGULATORY RISKS OF BLOCKCHAIN INDUSTRY

The regulatory situation around the blockchain industry still remains dynamic. Governments are in the process of studying blockchain technology, and some countries impose restrictions (for example, the United States, China, South Korea). New laws that might come into force in the future could significantly affect the activities of blockchain projects, including Qrbp. We warn you that such laws can significantly limit and even stop the project activity, we are not responsible for the negative consequences associated with the possible regulation of the industry in the future.

FINANCIAL RISKS

Contributions in cryptocurrency projects carry a big risk. Qrbp tokens, like any other cryptocurrency, are subject to strong fluctuations and may decrease in value significantly. We are not responsible for any fluctuations in the value of the token on exchanges. We do not guarantee that there will be an opportunity to exchange QRBP tokens for fiat. QRBP tokens can be used only on the Qrbp platform; they do not grant you the right of voting or ownership in the Qrbp project. The Qrbp project does not guarantee any income, you can incur significant losses.



Disclaimer and abstraction

Nothing in this Whitepaper shall be deemed to constitute a prospectus of any sort of a solicitation for investment, nor does it, in any way, pertain to an offering or a solicitation to buy any securities in any jurisdiction. The document is not composed in accordance with, and is not subject to, laws or regulations of any jurisdiction which are designed to protect investors.

Certain statements, estimates, and financial information contained within this Whitepaper constitute forward-looking, or pro-forma statements, and information. Such statements or information involve known and unknown risks and uncertainties which may cause actual events or results to differ materially from the estimates or the results implied or expressed in such forward-looking statements.