

CHAPTER 7

Other Use Cases

In this chapter, our aim is twofold: first, to propose a methodology for identifying how this exotic thing called an NFT can be used in the real world to solve real problems, and second, to apply this methodology to explain and surface the value that NFTs are delivering and can deliver in five “real-life” sectors: event ticketing, food and drink, fashion, financial loans, and supply chain management.

Understanding NFTs

When someone encounters the word “NFT” today, as of this time of writing in mid-2023, in the crushing majority of cases their reaction is one of two: either they have never heard the word at all or have heard it but have no idea what it means (three out of four people in the United States fall into this category),¹ or they have heard it, understand it to a nontrivial extent, but believe that it is a tool that one uses in the context of digital visual art – images or videos that one stamps with some digitally created and tracked identifier to render unique that piece of digital artifact within a community of other like-minded people who take seriously the notion that because something digital is rendered unique, it is valuable and worth paying *real* money for. Do NFTs *do* anything beyond help facilitate a game of digital pretend, where as soon as the people gathered were to stop pretending, the NFT, the coins, the tokens, and the ledger, used to keep track of this

¹ <https://money.com/people-know-what-nft-is/>

and that, go away in a puff, leaving no trace other than the real-life damage resulting from the real money and time and energy and emotion lost propping up the game? The answer – for those who have understood enough of NFT to be able to come up with the question – is a “no.” NFTs are essentially a scam, according to them, a sham, a big delusional house of pretend cards that is sure to come down crashing, sooner or later. This is where the vast, vast majority of real people who live in real life and deal with real problems stand today when it comes to NFTs.

Those who do understand NFTs and who do take them seriously have a good answer to this witheringly skeptical perspective. They note that what we call real money is also a big giant pretend game, so is the consent that we give to the authorities that manage the game, so is everything else that complex, modern life relies on: from norms to ethical standards, to moral infrastructures and even taboos. None of it is any more “real,” less susceptible to immediate vanishing, than any of the instruments used in the digital world. It takes one loss of faith event in a currency by enough people, and that currency will collapse, with that initial loss of faith within a small number of panicked skeptics creating an epidemic of faithlessness. And once the currency has lost the confidence of those who use it, it becomes instantly useless – the same with the leader of a country – even one who has under their command all the generals and all the weaponry that come with it, or a mayor, or a teacher, or a spiritual leader, or an influencer. Should enough people decide to withdraw their assent for something, the value of that something, no matter how tangible in real life may be, will vanish into thin air, its erstwhile seeming solidity now revealed to be a mirage sustained by a tacit collective agreement that gave it a place and a name and a set of functions in our ontology of what we call “reality.”

The realization that all of what which we call solid and real (money, property, reputation, identity, wealth, etc.) does not belong to a world that is fundamentally different from, or more solid than, the artifacts of the “less real” digital world where we encounter bizarre things like

blockchains and ledgers, DAOs, DeFis, cryptocurrencies, dApps, gas fees, minting, NFTs, and much more; this realization that we are dealing with an ecosystem of realities that share in common the collective ascent granted by the participants to the world they are sharing – a world where people buy things, cooperate with one another, own objects, transfer wealth, information, affection, display pride, and so forth – enables us to open ourselves up to a whole world of opportunity that would otherwise remain out of reach if we insisted on mystifying the artifacts and the instruments of the digital world (the so-called Web3) and quarantining it to its separate and not equal bizarro world, populated by bizarro people doing bizarro things. In other words, the opportunity in front of us is in pulling these instruments into what we loosely call “the real world” (the world of houses and food and diplomas and cash money), poking at them, and finding out how we can use them to solve real problems. And, as we do this, we come to understand that we can not only solve existing “real” problems but in fact create some real value that we otherwise would not have been able to conceive of, even better.

In this chapter, our aim is twofold: first, to propose a methodology for identifying how this exotic thing called an NFT can be used in the real world to solve real problems, and second, to apply this methodology to explain and surface the value that NFTs are delivering and can deliver in five “real-life” sectors: event ticketing, food and drink, fashion, financial loans, and supply chain management.

The Methodology

Let us reiterate our basic, fundamental insight: the backbone of each of the worlds that we inhabit, whether we want to call such worlds “real,” “virtual,” “augmented,” “mixed,” or whatever else, is nothing more and nothing less, for the purposes of inhabiting those worlds, than the respective ontologies of such worlds – ontologies which we, the people

who populate and navigate those worlds, have come to accept and use and take very seriously. The additional corollary insight is that these ontologies are sustained by nothing more than our assent, our acceptance of them, and that they, these worlds, would vanish as soon as we decide to no longer take their respective ontologies seriously, should we decide to do so. It is *within* these ontologies that we create our multiple phenomenological *immanences*, or more plainly, our ways of being in each world as we inhabit our multiple identities – our personal habitats – sometimes more than one habitat at a time.

The innovation here, if we can call it one, as we attempt to identify value opportunities that the ontology attached to the world NFTs introduces in “*a* real world” (for there are *many* real worlds) is to flesh out to whatever extent we can a given “real-world” ontology and mash it up with the NFT ontology and then see what we can obtain. More specifically, the project at hand is to identify those problems that exist in the ontology of a chosen “real world” that can be solved with the introduction of an NFT ontology (for there, also, thanks to smart contracts, there exists a multiplicity of them), now that the objects of the two ontologies coexist in a mashed-up ontology, with proviso, obviously, that this newly mashed-up ontology is taken seriously by those humans that live in and through it. Beyond identifying problems to solve, the hope is that we will also be able to identify *opportunities* for delivering value that is enabled by the new mashed-up ontology, given for, as almost always, a mash-up is always greater than the sum of the parts that were mashed up together.

Applications and Use Cases

The best way to explain what we mean by all of this is to go through the four “real worlds” that we have chosen – events, food and drink, fashion, and supply chain management – one by one, and apply our methodology against each one.

Events

This is the world of, among other things, tickets, ticket issuers, performers, event organizers, event suppliers, advertisers, festivals, passes, authorized ticket sellers, scalpers, fans of the performers, members of the media, venues, and event-goers.

In this world, (1) fans buy tickets from authorized ticket sellers, or, if they can't find tickets from such authorized sellers, they buy them from scalpers, who sell them at a higher price than the ticket was initially selling for; (2) fans attend events, miss them because something came up at the last minute, and attend them but are not happy with them; (3) performers of an event perform and receive compensation for their work, with which they may or may not be happy, and engage with fans, who may respond to their performance in fulfilling ways or dispiriting ways; (4) organizers of these events set up the events, find advertisers, engage with suppliers, provide security to these events, engage the media, with the authorities, if such engagements are necessary, etc.

With this quick run-through of our rather simplified ontology of the world of events, we can already identify several of the chronic problems that the world of events is plagued with. Here is a small list of them:

1. Fake tickets
2. Ticket scalping and opportunistic middlemen
3. Lost tickets
4. Canceled events
5. Unhappy fans that go unidentified, with little chance to make up for their disappointment
6. Very happy fans that go unidentified, with little chance of leveraging their happiness

NFTs can potentially help solve many of these problems in the following ways:

1. Every ticket is an NFT, and hence, the ticket's provenance is public and immutable. And so, in one fell swoop, fake tickets disappear from the landscape.
2. Every ticket is an NFT, and hence, in the NFT's smart contract, a clause can be introduced that would prohibit the owner of the NFT from selling it. And in one fell swoop, the scalper disappears from the landscape.
3. If the ticket you are holding in your digital wallet is an NFT, then, as long as you don't lose your digital wallet, your ticket is safe and you will never need to look for it.
4. An event is canceled and anyone who bought a ticket for the canceled event can either choose to accept a refund or register for an event in the future. With NFTs, the effort of making this possible is not more than a few lines of programming or the triggering for some rules in some software stack. For both the organizers and the ticket holders, all of this happens by magic, with no more than clicking a button or two on an interface from them.
5. You are an artist and you owe your livelihood to the fans. Without them, you can't put food on the table, let alone practice your art, your craft, or deliver your wisdom. Ensuring that you are aware of what your fans feel about you, and that you engage with those who were not happy to regain their enthusiastic

support, is something that you would probably wish you could do. Without NFTs that can easily track who attended which event, and that can easily enable the attendees to share their experiences, making it up to disappointed fans is almost impossible. With NFTs, this all becomes, again, a matter of an app or a web interface.

6. The same holds with fans who are very happy with the event: such fans would be ripe for buying merchandise, for spreading the word, for promoting the performer's brand, the venue, and the organizers, and for buying tickets for future events. Again, all of this is nearly impossible to do without NFTs, but more than possible, in fact, easy to do with NFTs.

An Example of a Current Implementation

As of this time of writing, the most promising companies in the NFT space are indeed those that promise to have a real-life impact by solving real problems, companies that enable event hosting and e-ticketing, among other adjacent services, with the blockchain and smart contract as part of their tech infrastructure. Examples of such companies are EventsFrame, GUTS, UTIX, Blocktix, Plentix, and TicketMint to single out just a small subset of such companies.

Food and Drink

This is the world of, among other things, reservations, tables, hosts, fancy meals, sandwiches, deserts, coffee, wine, wine bottles, patrons, restaurants, chefs, recipes, ingredients, and cocktails,

In this world, (1) restaurant reservations are made and canceled; (2) restaurant meals are eaten, and patrons are happy or unhappy with the meal; (3) patrons are in the restaurant for the couple of hours or so, and

they are either happy or unhappy with the service provided by the host, or the condition of the restaurant (too hot or too cold or shabbily decorated), or the location of their table; (4) outside of the restaurant setting, people buy bottles of wine, and some of them are very intentional buyers and seek out high-quality wine for which they are willing to pay a high price; (5) outside of the restaurant setting, people cook at home, and many are always on the hunt for killer recipes from chefs that they follow (perhaps the chef at their favorite restaurant).

Again, after this quick run-through of our rather simplified ontology of the world of food and drink, here are several of the chronic problems that one encounters in the world of food and drink. Here is a small list of them:

1. Last-minute cancellations or no-shows (a big problem for the restaurant)
2. Bad food (for the patron)
3. Bad service (for the patron)
4. Inauthentic wine
5. Unhappy patrons that go unidentified, with little chance to make up for their disappointment
6. Very happy patrons that go unidentified, with little chance of leveraging their happiness

NFTs can help solve many of these problems, and even open new opportunities, in the following ways:

1. If every reservation is an NFT, in the NFT's smart contract, a clause can be introduced that would charge a fee for any cancellations or no-shows. Additionally, if someone with a long track record of canceling tried to make a reservation, the smart contract can be written in such a way that such a person's reservation is rejected.

2. In cases where the patron is not happy with the service or the food, if the establishment is itself an NFT, software can be written to enable only those who actually made reservations (the reservations themselves NFTs on the ledgers) and ate at the restaurant (they were checked in to the establishment), to put in a review on their experience. This would enable an almost hermetically honest rating of the restaurant (something that plagues services such as Yelp!, where fake reviews in both directions create distorted evaluations).
3. Similarly for those who were happy, here, the opportunity is to leverage such happy customers for spreading the word, enrolling them into loyalty programs, offering them discounts, and including them in exclusive events (e.g., Thanksgiving, New Year's Eve, Valentine's Day).
4. Imagine every physical bottle of wine is paired with an NFT that contains with its metadata important details about the bottle of wine, such as its vintage, vineyard, region, and any other distinguishing characteristics, then attach a physical identifier to the bottle itself (for instance, unique QR code). In this way, to authenticate the bottle, a user can scan or verify the physical identifier, which will provide access to the NFT's metadata, which could then be compared to the bottle, and its authenticity either established or rejected. Compare this to what one need to do today: which simply to trust the seller, or to hire an expensive connoisseurs who will look at

several details, such as the print type of the labels, the age of the paper, ink and font, print methods, aging techniques – in other words, someone who is probably very expensive to hire given the deep knowledge that they have had to accumulate.

An Example of a Current Implementation

Bored Breakfast Club is a Web3 NFT coffee subscription company that offers a collection of NFT breakfast scenes living on the Ethereum blockchain. Each NFT is a unique, digital collectible and serves as a membership token unlocking free shipments of freshly roasted coffee. The NFT also provides the buyer with access to an online community, live events, digital content library, and discounts on supplemental bags of coffee.

Fashion

This is the world of, among other things, brands, shoes, clothes, styles, accessories, factories, workers, models, stores, and fashion shows.

In this world, (1) people buy clothes, (2) styles are in fashion during a period of time, (3) styles are out of fashion, (4) styles once out of fashion are back in vogue, (4) brands issue new products, and (5) brands announce that they have discontinued a product.

Here are a handful of potential problems and opportunities that one encounters in the world of fashion:

1. A company is selling clothing that was manufactured in a developing nation under near-slave conditions and a story is breaking out about how the brand manufacturing it has profited greatly from the sales of these products.
2. A limited edition of a product sold by a brand is being bought and resold in the marketplace at a high premium.

3. A sneaker company wants to set up a promotion event by entering into a lottery the first 100 people who bought a specific shoe brand five years ago.
4. Someone wants to buy a highly sought-after limited-edition bag but they are not sure whether or not that bag is authentic.

NFTs can help solve many of these problems, and even open new opportunities, in the following ways:

1. If each clothing item is an NFT that contains metadata about each step of the production, packaging, shipment, and delivery of the product to the retail store, a brand associated with product can track exactly where its products are made, how they are packaged and shipped, and who transports and delivers them. This then would enable whoever in the company is in charge of the brand to quickly identify any risk points that may emerge – for instance, a manufacturer whose workers are kept in near-slave conditions – and quickly to eliminate the risk (for instance, seeking out a new manufacturer who treats their workers much better).
2. To curb the practice of buying a limited-edition product only to resell it for high profit, a brand might require anyone who wishes to buy the product to place an NFT provided by the brand inside the wallet of the buyer, and market the product as one that comes with an NFT that enables buyer to own a virtual badge that they can flash in their Instagram or Twitter or other virtual places. The NFTs can then be attached to smart contracts that forbid the

reselling of the NFT, making the physical product, now that the buyer is not able to buy the associated NFT, far less attractive than it would have been if it came with the NFT.

3. When buying a pair of highly covered sneakers, a buyer may also get an NFT that goes into their digital wallet as proof that they own the coveted pair of sneakers. For the brand, the distributed NFTs could serve as a way to market to the NFT owners in ways that they could not have been able to do without the NFTs, such as identifying the first 100 people who bought the sneakers exactly five years to the day of the sneaker's fifth anniversary.
4. Similar to the bottle of wine example in the previous section, imagine pairing a brand bag with an NFT that contains the bag's metadata, with specific identifying marks on the bag that would be nearly impossible for someone to identify, let alone replicate. Only someone who bought the bag for real would have the specific NFT that contains the unique information on the bag. This would not, of course, make it mathematically impossible for someone to sell fake bags, but it makes such counterfeit goods extremely expensive to produce, at the very least far more expensive than just slapping an easy to replicate brand logo on any old cheap bag.

An Example of a Current Implementation

WrapTag is a service that provides physical near-field communication tags which contain a WrapTag NFT verifying the authenticity, ownership,

and history of the item. In other words, it is a solution that twins a physical thing with a record of that thing on the blockchain and blocks attempts to assert ownership of fake items.

Supply Chain

Here, we are dealing with the world of, among other things, shipments, pallets, warehouses, demand, permits, shelf lives, suppliers, transportation, last miles, and labor.

In this world, (1) factories make products, (2) truckers drive trucks to transport goods to shipment points, (3) permits are issued to enable ships to dock into ports or leave ports with pallets of products, (4) received product are stored in warehouses, and (5) customers buy things by going to stores or an online through ecommerce websites.

Here are a handful of potential problems and opportunities that one encounters in the logistics and supply chain world:

1. Truckers quit their jobs.
2. A factory has slowed down production because of missing parts.
3. Products with a rapidly approaching expiration date are languishing in a warehouse because the paperwork needed to transport the products is missing due to a shortage in the staffing of permit issuing authority.
4. Demand for a product is slowing down because of economic conditions.
5. On April 24, 2013, a building Rana Plaza in Savar, a suburb of Dhaka, Bangladesh, that housed several garment factories, a bank, and shops collapsed, resulting in the loss of over 1,100 lives and left more

than 2,500 people injured. The catastrophe was one of the deadliest industrial disasters in history. Most of the victims were factory workers, primarily women, who were producing clothing for major global brands, such as H&M, Gucci, and Versace. Brands claimed that they were not aware that their clothes were being made in such appalling work conditions. They blamed lower-tier managers, their sourcing partners, and the local and national governments in Bangladesh.

Here is how NFTs can help:

1. Imagine each trucker and each truck have each an NFT associated with them, and that up-to-date metadata is kept on each trucker and each truck, enabling management to know exactly the most minute fluctuations in the supply of truckers and trucks and where and when bottlenecks are starting to build before they build and become manifest, creating last-minute pressures on truckers to drive long hours to make up for the shortages resulting from the bubbling shortages. Such information could help not only the private companies but the local, state, and federal government engage in actions where they are able to, to assist in averting the buildup of transportation bottlenecks that may result in shortages of critical products such as medicine, medical equipment, and baby formula, as we saw happen during and after the COVID pandemic. Software written on top of the NFTs, in combination with AI that can detect patterns and make predictions given prior scenarios, can provide

actionable information much earlier in time, when quick adjustments, potentially themselves recommended by the AI, can be made.

2. Imagine each factory is an NFT whose metadata – such as production volume and staffing levels – are available publicly in times of crisis, enabling everyone in the ecosystem that is vested in the smooth running of the factory as well as those who make critical decisions, such purchasing, stocking, and staffing, of their respective organizations, to act accordingly. Being able to obtain such data in a reliable way and in a timely basis can be the difference between an averted economic crisis and a cascading one that touches many critical sectors of the economy.
3. NFTs can also help ensure that information about products with short shelf lives and expiration dates is available reliably and in real time to ensure proper prioritization of resource allocation, including staffing, and timely communication and coordination with various stakeholders, including government authorities to expedite procedures that otherwise would result expensive delays and general population negative impacts.
4. The journey of a product usually begins six to twelve months before it is finally sold, whether through a retail or a wholesale channel. Given that nearly every service in the supply delivery chain is outsourced to some third party, that may itself further subcontract the service to a fourth party

down the line, tracking the source of any product, let alone a product component, let alone the path of its journey, is almost physically impossible to do. Twinning products, and even parts of products, with NFTs, would make such tracking almost trivial. No more islands of systems and record-keeping protocols that don't speak to each other, or can't talk to each other because integrations between the systems don't exist. There is one protocol, the NFT, and one system, the blockchain, that everyone is using to refer to the product or its part, and to track what happens to that product or its parts along the way.

5. Imagine if we could tell, with the simple scan of a tag on a clothing item, exactly where each item was made, where it originated, how it was transported, where it was housed, and so forth. Brands would no longer be able to plead ignorance, as they did in the case of the Rana Plaza in 2013. Nor would reporters and their editors in media outlets, who are supposed to be working on stories of exploitation, can claim that it is expensive to report on such stories.

An Example of a Current Implementation

Nestlé, a global food and beverage company, launched Chain of Origin to provide supply chain transparency “from crop to cup” for coffee beans, making all record of all transactions throughout the supply chain transparent, immutable, and verifiable. This enables Nestlé's partners to interact in a trustworthy and efficient manner. This solution also makes possible the spotting of any mistakes, malpractices, or tampering, for quick reaction.

Summary

As things stand today, in 2023, no more than one out of four people in the United States has even heard of the abbreviation “NFT,” while the majority of those who have heard it do not fully understand it, or understand it only as something related to digital artifacts such as images, videos, and audio files. In this understanding of NFTs, there is the real world where real things affect people in real ways, and then there is the world of NFTs, a world of make-believe, pretending, and hype, a game of sorts that people who are interested in that game play and take seriously. Such a conception of NFTs is deeply misguided, and in its misguidance misses a whole world of opportunities. Our real world is no more real and no more tangible than the digital world: in both worlds we deal with concepts and categories, conventions and protocols, and what holds everything together in both worlds in assent of those who are participating and acting in this world. Once we realize that the real world and the digital world can be merged into one world of coexisting objects, possibilities for innovative ways of not only solving problems but creating new value quickly emerge. As things, we have barely even begun to scratch the surface of what is possible. Exciting solutions and innovations are ahead of us.