

# Economics of Nonfungible Tokens

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*Nonfungible tokens have a wide variety of applications in diverse settings. This article analyzes their potential benefits to companies and customers. It also highlights how they can be used in companies' product and marketing communication strategies.*

**T**he creation and trading of nonfungible tokens (NFTs) and NFTs' use in a number of business applications have become a significant trend (Figure 1). Among other factors, Web3 and the metaverse, which are viewed as the next big things by many analysts, are expected to contribute to the growth of the NFT market. A concern that has been raised with NFTs, generating significant high-profile media coverage, is that many of the tokens are not economically productive and socially useful. Commenting on Yuga Labs-owned Bored Ape Yacht Club's (BAYC's) top-selling series of NFTs, Ethereum cofounder Vitalik Buterin noted that "ultimately the goal of crypto is not to play games with million-dollar pictures of monkeys,

it's to do things that accomplish meaningful effects in the real world."<sup>1</sup> Although NFTs' true potential has been largely overshadowed by speculative demands, the tokens are ideal for addressing many practical business problems. This article analyzes how NFTs can be used to generate a number of positive economic and social impacts.

## NFTS' BENEFITS TO COMPANIES AND CUSTOMERS

Table 1 shows different roles that NFTs can play from the perspective of companies and in terms of benefits that consumers seek and receive. Some NFTs are product offerings in their own right. Various companies also offer NFTs in conjunction with products and services as a means to provide added value to consumers. NFTs are further used as means to achieve goals related to supply chain and marketing communications. The benefits and values that consumers derive from products are broadly classified into two categories: utilitarian (extrinsic) and hedonic (intrinsic).<sup>5</sup> Utilitarian benefits provide customer value by being a means to an end. Hedonic benefits involve



experiential and affective aspects of a product. Such benefits are noninstrumental and thus appreciated for their own sake rather than their practical purposes. We discuss the roles of NFTs in each cell of Table 1.

**Cell 1**

NFTs are being designed to deliver utilitarian benefits. NFT music platform Royal, founded by disc jockey and electronic dance music producer Justin David Blau (stage name: 3LAU), makes it possible for artists to give their fans direct ownership of songs. Fans can receive royalties if the songs they possess become popular. In October 2021, 3Lau released a collection of 333 unique art pieces as NFTs. The NFTs also represented 50% ownership in the streaming rights of a 3Lau song. An NFT of 3Lau’s 2-min song “Waveform” gave its owner 100% of the rights.<sup>6</sup> The NFT was offered as an auction item as part of a Christie’s collaboration with NFT marketplace OpenSea. On 7 December 2021, “Waveform” was sold for 77 ether tokens (US\$330,200).

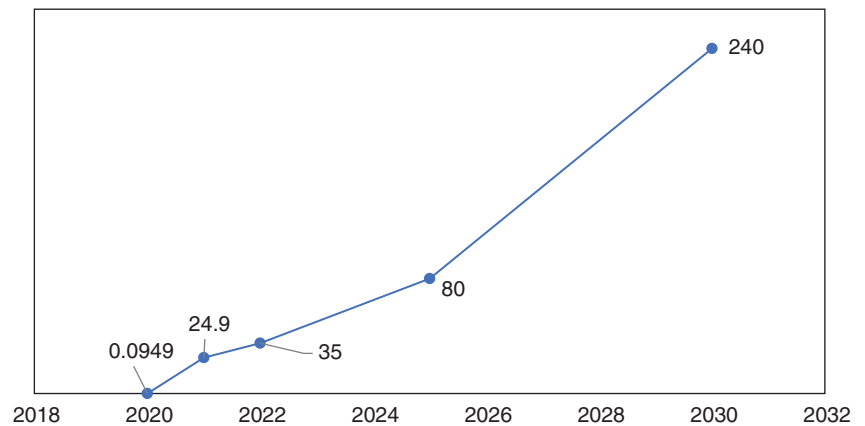
NFTs are also incorporated in bundling packages. NFT project VeeFriends has been experimenting with various

methods of incorporating utilities into its NFTs. Users buying a predetermined number of its founders’ books can earn an NFT. NFT holders have access to lectures, events, a members-only restaurant, and a multiday conference, VeeCon.<sup>7</sup> Some NFTs include additional benefits, such as access to clubs, works of art, and events.<sup>7</sup> Various companies add utilities to their projects as a way to add market value to NFTs. Such projects include BAYC, VeeFriends, and CyberKongz. This constitutes a calculated move to ensure that legitimate

projects will survive market crashes, while projects with no real value will disappear. Buyers of a BAYC NFT are offered a lifetime membership in the BAYC community, a perk that includes exclusive games and VIP parties.

**Cell 2**

By making it possible to create one-of-a-kind products, NFTs provide mechanisms to guarantee special hedonistic experiences for consumers. In particular, NFTs have transformed the market for digital assets. In the nonblockchain



**FIGURE 1.** The global NFT market, in billions of U.S. dollars. (Data source: 2020 and 2021: DappRadar<sup>2</sup>; 2022 and 2025: Jefferies<sup>3</sup>; 2030: Morgan Stanley.<sup>4</sup>)

**TABLE 1.** The benefits NFTs offer companies and customers.

Roles that NFTs can play Companies’ perspective ⇔ Consumer benefits ↓	NFTs as a product offering in their own right	NFTs as means to achieve other goals (unrelated to product offerings)
Utilitarian	<p>Cell 1</p> <ul style="list-style-type: none"> <li>NFTs as assets with future earning potential (for instance, 3LAU)</li> <li>NFTs as part of bundling packages to enhance the tokens’ utilitarian aspects (for example, BAYC)</li> </ul>	<p>Cell 3</p> <ul style="list-style-type: none"> <li>Higher perceived benefits from products tracked and traced through NFTs (for example, Icecap diamonds)</li> </ul>
Hedonic	<p>Cell 2</p> <ul style="list-style-type: none"> <li>Utilities associated with one-of-a-kind products (such as Top Shot)</li> <li>Emotional propositions (for example, Budweiser and Gucci)</li> </ul>	<p>Cell 4</p> <ul style="list-style-type: none"> <li>NFTs as a part of nonprice promotions, including giveaways and sweepstakes, and initiatives such as corporate social responsibility (for instance, Coca-Cola’s “rooftop” party on Decentraland and McDonald’s China NFTs)</li> </ul>

world, there is no way to separate the “owner” of a digital artwork from someone who has a copy of the piece in his or her computer.<sup>8</sup> An NFT, such as a National Basketball Association Top Shot, guarantees exclusive ownership of a digital asset and thus increases the utility associated with and social status from possessing the item. Likewise, Nike’s Cryptokicks sneakers, for which the company holds a patent in the United States, link physical shoes with an NFT to verify ownership.<sup>7</sup> Each sneaker comes with a digital asset attached to a unique identifier, which means the digital version of the shoe can also be sold.<sup>9</sup>

Although NFTs’ true potential has been largely overshadowed by speculative demands, the tokens are ideal for addressing many practical business problems.

Some companies employ emotional selling propositions to generate revenue by offering NFTs. The idea is that an NFT can generate unique personality and image attributes for a brand. That is, NFTs can have emotional value for consumers. Blau put the issue this way: “There’s emotional value to a fan in owning music that’s not being captured by the market today.”<sup>10</sup> Other brands use NFTs to strengthen consumers’ relationship and attachment. For instance, in November 2021, Anheuser-Busch, a unit of the world’s largest brewer, launched Ethereum-based NFTs for its Budweiser brand—Budverse Cans: Heritage Edition. The collection consists of 1,936 unique cans, which signify the launch of Budweiser, in 1936. Each NFT is one of a kind and generated using archived photos, ads, and designs from the brand’s past.<sup>11</sup>

Likewise, Italian luxury fashion house Gucci has been creating deeper engagement with consumers in the metaverse. It sold NFTs for avatars of the limited edition “Gucci Collection,” which includes bags, glasses,

and hats, on Roblox.<sup>12</sup> In May 2021, the Gucci Garden space on Roblox was open for two weeks. The platform’s users could spend US\$1.20 to US\$9 on collectible and limited-edition Gucci accessories. Just like real-world Gucci Garden exhibitions in Florence, Italy, and other cities, items were hidden in the virtual Gucci Garden. Some were offered for free.

### Cell 3

Utilitarian benefits to consumers can arise from NFTs in ways that are not directly related to product offerings. For instance, blockchain-based tracking through NFTs can be a key attribute for

consumers by enabling them to verify that a product is authentic and sustainably produced. In this way, NFTs provide important functional benefits. An NFT is a digital twin (an attribute) and can provide information to increase consumers’ confidence in the quality and sustainability of a product (the physical twin).<sup>13</sup> Consumers value this and may be willing to pay more for items that have an NFT, and they may buy a digital twin as an attribute of a physical product, such as a piece of diamond.

### Cell 4

NFTs can be used as in marketing campaigns, such as giveaways and sweepstakes, which strengthen emotional attachments with consumers. In October 2021, McDonald’s celebrated its 31st anniversary in China by gifting NFTs to employees and customers. The company also released the “Big Mac Rubik’s Cube,” a 3D design modeled after its headquarters in Shanghai.<sup>14</sup> In addition, NFTs are being added to corporate social responsibility (CSR) activities. To celebrate International

Friendship Day, on 30 July 2021, Coca-Cola threw a virtual “rooftop” party on Decentraland, a blockchain-based 3D metaverse. The party featured surprise music guests. Attendees could have a first look at “friendship box” items and had a chance to win wearable “Mythic” Coca-Cola T-shirts. A single “loot box” consisting of four items—a vintage Coca-Cola cooler with dynamic motion and illumination, custom-designed Coca-Cola Bubble Jacket to be worn on Decentraland, sound visualizer illustrating auditory elements related to the beverage, and Coca-Cola friendship card with refreshed artwork from 1948—was auctioned via the OpenSea marketplace. The proceeds from the NFT auction went to Special Olympics International. Coca-Cola noted that the event helped create buzz and brought new, young audiences to the company’s social media channels.

## NFTS’ ROLES IN PRODUCT AND MARKETING COMMUNICATION STRATEGIES

NFTs can contribute to firms’ product and marketing communication strategies in many ways. Some key mechanisms are explained in this section.

### New methods for distributing and monetizing digital products

Most digital content is monetized via ad-supported social media platforms (for example, Facebook), web-based tools (for instance, podcasts), and subscription-based streaming platforms, such as Netflix. These platforms act as intermediaries between content creators and consumers. NFTs help establish a disintermediated distributed model of media ownership and enable creators to directly profit.<sup>15</sup> NFTs can ensure that musicians are fairly compensated for their work. They can also enable musicians to derive earnings from secondary, tertiary, and higher-order markets. Currently, music creators give up ownership rights to platforms, and it is

difficult to track the distribution of their content.<sup>16</sup>

### **Enhancing product quality via supply chain visibility**

An item's real-world metadata (such as its identity, location, responsible party, possession, container temperature, and other metrics) can be attached to an NFT. The data are automatically updated as conditions change, which presents an accurate and timely view to all involved parties.<sup>17</sup> In this way, product quality, such as performance, can be enhanced. For example, Louis Vuitton's blockchain platform verifies the quality and source of the company's products by tracking materials through the supply chain.<sup>18</sup>

### **Preserving the value of products in distribution networks**

NFTs can benefit manufacturers as well as buyers in secondary markets. For instance, it may be less risky to purchase an NFT-backed product on a secondary market. There is less need for depreciation and risk discounts. Thus, values may be preserved more easily in the distribution network.<sup>19</sup> NFTs enable brands to earn a percentage of the resale price of products.

### **Addressing product-related deviance, such as fraudulent returns**

NFTs can address product-related deviance, such as fraudulent returns. In 2020, U.S. shoppers returned about US\$428 billion in merchandise, accounting for 10.6% of retail sales.<sup>20</sup> Roughly 6% of the returns were fraudulent. NFTs can help stores fight back. Most paper-based verification is bulky, outdated, and easy to forge. NFTs can be combined with QR codes and near-field communication smart labels to track merchandise.<sup>21</sup>

### **Fighting the threat of counterfeit products**

Asset tokenization, which involves the issuance of NFTs that represent tradable assets, can be an effective way to

fight counterfeit products. To take an example, the Paris-based NFT platform for the luxury and fashion industries Arianee uses blockchain to track and trace luxury goods. Brands can use Arianee to tokenize their assets and create digital passports for their products. Founded in 2017 as a nonprofit consortium, Arianee aims to "implement a global standard for the digital certification of luxury goods."<sup>22</sup> Consortium members include Audemars Piguet,

the digital certificates can be helpful for reselling watches if owners wish to do so. Buyers can also transfer the ownership of their watches to other people. Breitling has linked the passport to its warranty program, which enables customers to track repairs. In 2020, the company announced a plan to add other functionality to the passport, which would enable users to extend warranties and add theft and loss insurance.<sup>25</sup> The idea is to make

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**Blockchain-based tracking through NFTs can be a key attribute for consumers by enabling them to verify that a product is authentic and sustainably produced.**

BA&SH, Breitling, Roger Dubuis, Manufacture Royale, Olistic, Richemont, Satoshi Studio, Vacheron Constantin, Panerai, and Verlan.<sup>23</sup> The platform uses NFTs based on the Ethereum ERC-721 standard.<sup>24</sup> The passport guarantees a product's authenticity and enables brands to maintain a "perpetual" relationship with product owners. All events and transactions during a product's life cycle are recorded.<sup>23</sup>

Luxury watch brand Breitling teamed up with Arianee to issue digital passports as certificates of authenticity. A unique digital passport certifies every watch's origin,<sup>23</sup> and buyers receive a guarantee card that can be scanned through the Arianee wallet app. A watch then can be added to a buyer's digital wallet, enabling the customer to see the product's serial number and the activation date of the digital warranty.<sup>24</sup> Also, in March 2020, Breitling launched a pilot of its Top Time initiative, and in October 2020, the company became the first luxury watchmaker to offer blockchain-based tokenization to track and trace all its products.<sup>22</sup>

Breitling customers can use the digital passport to verify the authenticity of their watches and prove their ownership. By proving authenticity,

it difficult to copy the company's products and ensure the exclusivity and uniqueness of the Breitling brand.

### **Using NFTs in new forms of marketing**

NFTs have become newsworthy. This means that businesses that find a practical use for NFTs are likely to receive press coverage. Because of NFTs' ability to directly reach and engage with consumers, the tokens could provide a useful platform for drawing consumer responses and attention. Mass media holding company iHeartRadio and OneOf collaborated to give away 1 million NFTs.<sup>26</sup>

In a buzz marketing campaign, customers engage in conversations about products through social media, achieving the same effect as advertising. Such a campaign does not require national media buys and costly creative components. Gamification utilizes game world elements to stimulate users' involvement. Gamification leverages users' motivation, and companies can harness NFTs to enhance people's enthusiasm. In August 2021, Louis Vuitton launched a mobile game that enabled players to collect free NFTs by following the brand's mascot, Vivienne, to Paris. The game included

10 NFTs by the digital artist Beeple. In the first week, it was downloaded half a million times.<sup>27</sup> In this way, Louis Vuitton was able to increase consumers' involvement in gamification by utilizing NFTs.

### CSR and public relations tools

Some companies have increased brand engagement through NFTs by selling the tokens to raise funds for charity and nonprofit organizations. Ray-Ban announced a plan to auction, on Open-


and link physical objects with tokens to reduce counterfeits.

NFTs are being used to promote distinctive brand personalities, which can help create favorable associations in consumers' minds. Adopting NFTs is critical to fostering deep engagement with customers. NFTs can help frame stories in ways that may attract large audiences. Companies that fail to embrace this powerful innovation may lose relevance among young consumers. From consumers' standpoint, NFTs'

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Sea, an NFT featuring the brand's iconic Aviator sunglasses. The NFT was created by artist Oliver Latta. All the proceeds were for charity.<sup>28</sup> Coca-Cola<sup>29</sup> and Taco Bell have taken a similar approach. Customers may feel that they are teaming up with companies to contribute toward positive and meaningful social and environmental causes. In this way, they might develop a strong and positive attachments with brands.

**N**FTs are emerging as key components of corporate strategies. In particular, they are well suited to product and marketing communications. They can stimulate consumers' interest in firms and products. For instance, via early access tokens, NFTs can help create buzz before product launches. Companies are creating one-of-a-kind products, such as Nike's Cryptokicks sneakers. NFTs have also opened up additional revenue generation opportunities. Vendors can sell goods in purely digital forms and as complements to physical products. Firms can also use NFTs to collect data and reward consumers. Fashion companies, such as Gucci, have started using NFTs to enhance brands. They use NFTs create emotional connections with consumers

utilitarian and hedonic benefits make the tokens interesting. NFTs make it possible for people to own what they enjoy. Notably, NFTs have emerged as a status symbol among young consumers. Their utilitarian benefits also stem from instrumental roles, such as guaranteeing a product's authenticity. 

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