

MAY 2021

PwC Offering | NFT Verification



Disrupting the creator economy

pwc.com/essentialeight ➤

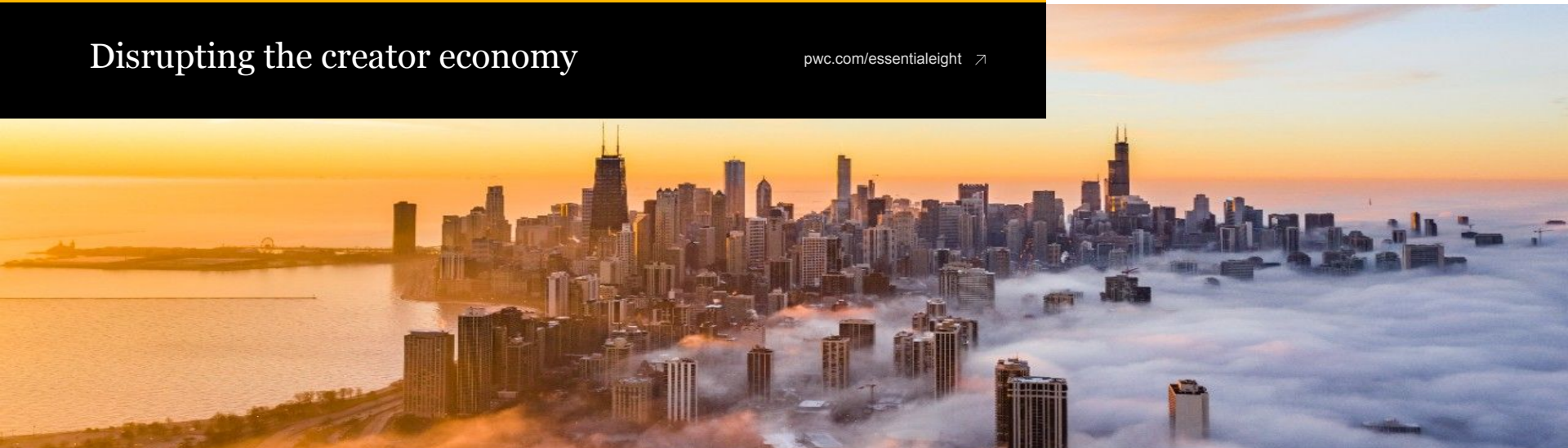


Table of Contents

- 1 What are NFTs?
- 2 Our Understanding & Current Market
- 3 NFT Lifecycle and Services
- 4 Establishing Trust
- 5 Key Players
- 6 Next Steps



What is it?

NFTs (Non-Fungible Tokens) are digital assets owned by one person and verified using blockchain technology - the same technology that lets people trade Bitcoin and other cryptocurrencies and is powering business applications. The selling party (artists, distributors, etc.) must sign a message (ie. transaction) onto the blockchain - thereby notifying everyone in the world that this asset or collectible is certified by them as authentic.

Ecosystem

Marketplaces: Connect buyers and sellers, and manage the backend smart contract interaction.

Sellers: Content creators, owners, or distributors looking to monetize digital content.

Buyers / Collectors: The purchasing party.

Infrastructure: Additional frameworks and platforms that make use of NFTs or enable special use cases such as: collateral, collective ownership, index funds, and even tokenized insurance.

Games: Drive interaction and additional transactions.

The Metaverse: A collective shared virtual space being created that will make heavy use of verifiably owned digital assets.

Key Features

- Represent digital assets that have been verified through blockchain technology
- Allow content creators and distributors to monetize digital content
- Are indicative of a larger trend towards smart contract platforms, like the Ethereum blockchain
- Can be enhanced with programmatic functionality, such as automatic royalty distribution
- Can represent anything digital
- Can be combined with DeFi (decentralized finance) use cases, such as collateralized loans

Our Understanding

➤ Awareness of NFTs is rapidly growing. NFTs provide new opportunities for organizations and individuals of all industries to monetize content and assets - both digital and physical assets -- with trust enabled by blockchain.

Significant investments are being made

\$69M

Christie's sells the digital piece "EVERYDAYS: THE FIRST 5000 DAYS" by the artist Beeple - [source](#)

\$2.9M

Jack Dorsey, Twitter CEO, sells his first tweet as an NFT on March 22, 2021 - [source](#)

\$7.5M

CryptoPunk #7804, a computer-generated avatar of a pipe-smoking alien sells for 4,200eth - [source](#)

Digital Trust needs to be established by all parties

As the NFT market grows, we can provide **stakeholders (issuers, content creators, etc.) needed guidance on key areas of business development**, including but not limited to:

- Business Model and Strategy
- Legal Entity Structure
- Tax Structure

In addition, a product opportunity exists to **efficiently establish trust between issuers/artists and NFT buyers**:

- Current marketplace is still in infancy and highly decentralized
- Content creators and customers want to prove an NFT originates from a trusted source
- No technology exists to manage a "portfolio" of NFT assets

PwC is poised to be the establisher of **Digital Trust**



Identity validation asset provenance, digital creation, PwC signed process



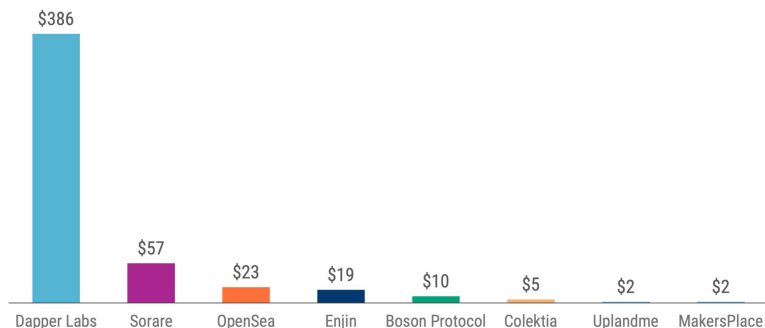
Option 1: Identity validation, asset provenance, digital creation, PwC signed process

Option 2: Full NFT platform for validation, creation, minting, marketplace, and portfolio management

What do the numbers say?

Top-funded NFT companies

Disclosed equity funding (\$M), Q1'16 – Q1'21



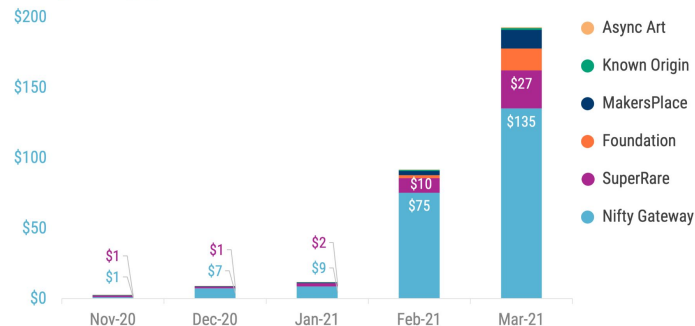
Source: cbinsights.com

CBINSIGHTS

NFT volume has exploded over the past few months

Monthly crypto art volume (\$M), November 2020 – March 2021

Funding amount (\$M)



Source: CryptoArt.io

CBINSIGHTS

Staggering values for digital assets

\$69M

Christie's sells the digital piece
"EVERYDAYS: THE FIRST 5000 DAYS" by
the artist Beeple - [source](#)

\$7.5M

CryptoPunk #7804, a computer-generated
avatar of a pipe-smoking alien sells for
4,200eth - [source](#)

\$2.9M

Jack Dorsey, Twitter CEO, sells his first tweet
as an NFT on March 22, 2021 - [source](#)

Where are NFTs



Collectibles

Professional organizations like the NBA are viewing NFTs as the new wave of "card collecting" by providing digital assets that are serialized and unique. Collectibles can be limited and provided as an add-on to businesses or used for marketing to drive excitement.

The company Dapper Labs, behind the NBA's digital NFT collectibles Top Shot is now valued at \$2.6B - Fastcompany



Gaming

Digital card games based around NFTs and Ethereum are boosting popularity by storing some elements collected in-game on the blockchain as unique ownable assets. This is an accepting market given the gaming world's familiarity with the collection of digital gaming assets.

Creator of Microsoft NFT games, Enjin, raises \$18.9m for new blockchain - LedgerInsights



Art

A prime market for NFTs, digital artists have long struggled with the ability to monetize their work across the digital spectrum, often relying on physical prints or goods to generate revenue. NFTs enable digital artists the same concept of provenance as physical art pieces.

Music artists 3lau and Kings of Leon both sold tokenized versions of their albums - Generated \$2M from NFT sales of their new album - NME



Virtual Worlds

As digital and virtual worlds continue to grow in popularity due to gaming accessibility and the use of extended reality, NFTs provide a mechanism to transact for digital goods and parcels within these new decentralized virtual worlds.

10,000 unique collectible characters with proof of ownership are stored on Ethereum blockchain - "punks" are generated characters and are limited in run - Cryptopunks



Real-world assets and documentation

Tokenization of real-world assets is an area that is still relatively new and rare in the NFT world. However, NFTs are now being referenced to represent things like licenses, histories, and records due to their ability to embed the rare or desirable details of the token.

Nike uses Cryptokicks to tokenize Shoe ownership on Ethereum, obtained a patent on cryptographically secured digital assets on Dec. 10, 2019 - US Patent, The Tokenist



Proof of Origin

Although still in its infancy, using the concept of NFTs to establish proof of origin for data and news is currently being investigated by the media industry. From original proofs for media to the concept of validated and source news, NFTs are providing a framework for authenticity.

New York Times column about NFTs published as an NFT sells for \$560K - NYTimes

NFT Lifecycle

Asset Origination

Digital Creation

NFT Minting

Marketplace

Post-Transaction

KEY ACTIVITIES

- Source and verify asset
- Identify and verify asset owner

- Creation via a 3rd party vendor, e.g., Dapper Labs
- Curation of collections and distribution plan for collection

- Creation via a 3rd party tool, e.g. Cent
- ERC-721 token creation (ETH)
- Provide all metadata for token
- “Sign” NFT - associate to address
- Pay “Gas” fee to process the creation of the token

- Set royalties if necessary for minted NFT
- Set auction price and distribution strategy if collection

**can only sell on compatible blockchain*

- Manage royalties
- Manage crypto funds
- Revenue disclosure
- Royalty and asset management
- Legal rights enforcement

PwC SERVICES*

- Author/Creator identity verification
- Asset verification, establishing provenance
- IP strategy analysis

- Media creation with EC
- Business model design
- Distribution strategy

- Minting automation
- API integration for existing marketplace with minting
- Firm signed NFTs

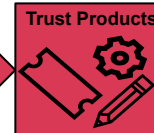
- Host marketplace (white label)
- Verify other NFTs from various marketplaces
- Connect clients with NFTs pertinent to their business
- Tax services
- Legal entity creation
- Risk and controls frameworks

- Track and trace NFTs sold within the PwC Marketplace
- Financial reporting and compliance

PwC PRODUCTS

Identity validation, asset provenance, digital creation, PwC signed process

Full NFT platform for validation, creation, minting, marketplace, and portfolio management



NFT Lifecycle Service Opportunities



Actions



Our Offerings & Services



Economic Opportunity

Content Author

NFT Proof-of-Ownership

Verification of identity of owner and attestation to provenance of token

NFT Proof-of-Existence

Verification that token is original and attests to originality of token

IP Strategy Analysis

Strategy planning to understand IP available for minting and rights mgmt

Asset Creation

Asset Creation Services

Leverage design and multimedia services to create digital token

Asset Distribution Strategy

Strategy planning for collections, limited release, marketing

NFT Minting

Automated Minting

Solution to automate and track minting of NFTs across different marketplaces

Marketplace Centralization

Provide holistic view of NFT through API integration across marketplaces

Verified by PwC NFT

Branding of "PwC Verified" NFT and associated minting metadata & recognition

Marketplace

White Label Marketplace

Hosting of PwC NFT marketplace through white label partner

3rd Party NFT Verification

Verification services for NFTs prior to purchase and associated guarantees

Marketplace Content Analytics

Data analytics for NFT transactional activity across multiple marketplaces

Post-Transaction

Audit NFT Transaction Activity

Provide detailed tracking of life cycle of NFT post client transaction

NFT Portfolio Management

Full service management including crypto wallet, tax compliance, revenue reporting, and regulation compliance

*To be determined
as part of next
steps*

Where we can establish trust; vendors and stakeholders

Individual Artists/creators, Large Brands, Records

**These are sample industries. NFTs are being generated in many industries.*

Notable artists

- Beeple/Mark Winkelmann (\$113m portfolio)
- Trevor Jones (\$18m portfolio)
- FEWOCIOUS (\$18m portfolio)
- Mad Dog Jones (\$15m portfolio)

Future Records

- Deeds, Titles, Ownership Records
- Professional Registrations
- Legal Contracts

Large Brands



CHRISTIE'S
UFC



WarnerMedia



WARNER MUSIC GROUP



Establishing trust for Blockchain companies

NFT Blockchain Issuers

- Ethereum
- Flow by Dapper Labs
- WAX
- Tron
- Binance Smart Chain
- Polkadot
- Tezos
- Cosmos
- Hedera Token

NFT Marketplaces

- Calaxy (Hedera)
- OpenSeas (ETH)
- WAX.io (Wax)
- SuperRare
- Rarible (ETH)
- Mintable (ETH)
- VIV3 (Flow)

Developers - Full Service

- LeeWay Hertz
- NFTTrade
- Dapper Labs
- Alchemy

Creating trust for numerous stakeholders spanning industries

Financial Services

- Tax compliance and reporting
- Earnings and royalty management
- Crypto volatility

Legal Services

- Intellectual property management
- Copyright and design infringement

Insurers

- Insurtech companies
- Cryptocurrency insurance companies uniquely suited

Current Key Players - NFT Platforms



San Francisco - 2019

\$ 98.9m raised



28 employees

The need

Offering & Capabilities

Blockchain connection



Intermediary between blockchain and the apps & NFT collections that run on it; allows users to create blockchain applications

NFT marketplaces



Platform behind NFT marketplaces OpenSea, Nifty; considered the "AWS of blockchain"

Transaction capabilities



Has powered over \$30B of transactions

Trust Services



App Security

Currently, alchemy does not have an independent third party automatically audit and verify applications on the blockchain

Key Investors



- John Hennesey
- Reid Hoffman



Vancouver - 2017

\$ 400m raised



149 employees

The need

Offering & Capabilities

Gaming



Online platform built for games on blockchain; currently developing Genies Marketplace to sell digital wearable NFT collections for game avatars

NFT marketplaces



2020 launched Flow, its own blockchain marketplace

Notable Use Cases



NBA Top Shot and CryptoKitties

Trust Services



NFT game security & transparency

There is not currently an independent, accredited validator and/or auditor of the security of games developed on the Dapper platform and the flow blockchain.

Key Investors



- Kevin Durant
- Michael Jordan
- 30+ NBA & NFL Players



Companies such as Alchemy and Dapper Labs enable the creation of NFTs, but someone **needs to validate the security, trustworthiness, and ownership of NFTs** in the marketplace.

Niche Competitors

➤ Companies below are players in the NFT space already and growing quickly, but are not the established players that PwC would ideally partner with



Rarible



Philadelphia



15

Operator of a **community-owned NFT marketplace** used to create, sell, or collect digital items secured with blockchain

SuperRare



Delaware



20

Online platform designed to provide tools to issue **limited-edition digital art** via tradable NFTs.



Hedera Hashgraph



Texas, US



122

Distributed ledger technology that uses asynchronous consensus algorithm with a patented hashgraph



LeewayHertz



San Francisco



71

Range of services including white label minting, **real estate tokenization**, NFT development and marketing, and **asset lifecycle management**



OpenSea



New York



21

Peer-to-peer marketplace for crypto assets and digital collectibles



Mintbase



San Francisco



3

Developer of blockchain technology designed to create a **minting tool** used to create a **verified token**



AppDupe



Chennai, India



250+

On demand app, game, NFT cloning service. Offers a peer to peer network and **marketplace** as well as **white label NFT minting**



DEVELOPCOINS



India



10

Cryptocurrency development company with capabilities in **tokenization** and rewards

FORTE



San Francisco



100

Platform for developers to apply blockchain technology to **gaming** by enabling **monetization via tokens**



Thank you.

© 2022 PwC. All rights reserved. Not for further distribution without the permission of PwC. “PwC” refers to the network of member firms of PricewaterhouseCoopers International Limited (PwCIL), or, as the context requires, individual member firms of the PwC network. Each member firm is a separate legal entity and does not act as agent of PwCIL or any other member firm. PwCIL does not provide any services to clients. PwCIL is not responsible or liable for the acts or omissions of any of its member firms nor can it control the exercise of their professional judgment or bind them in any way. No member firm is responsible or liable for the acts or omissions of any other member firm nor can it control the exercise of another member firm’s professional judgment or bind another member firm or PwCIL in any way.

PwC is providing no opinion, attestation or other form of assurance and disclaims any contractual or other responsibility to others based on their access to or use of the Deliverable. Accordingly, the information in this Deliverable may not be relied upon by anyone other than Client.

PwC has exercised reasonable care in the collecting, processing, and reporting of this information but has not independently verified, validated, or audited the data to verify the accuracy or completeness of the information. PwC gives no express or implied warranties, including but not limited to any warranties of merchantability or fitness for a particular purpose or use and shall not be liable to any entity or person using this document, or have any liability with respect to this document. This report is intended for internal use only by the recipient and should not be provided in writing or otherwise to any other third party without PwC express written consent.