

CHARITABLE ORGANIZATIONS AND THE DECENTRALIZED DIGITAL ECONOMY

COMPREHENSIVE REVIEW AND PROPOSAL
FOR FUTURE OPPORTUNITIES



THE UNIVERSITY
of EDINBURGH



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With Prewords by

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With United Nations 'Rights of the Child' accessible version by

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Avery is a 16 year old young woman, captain of her high school volleyball team, full of curiosity about the changing world of blockchain technology and a keen desire to help others.

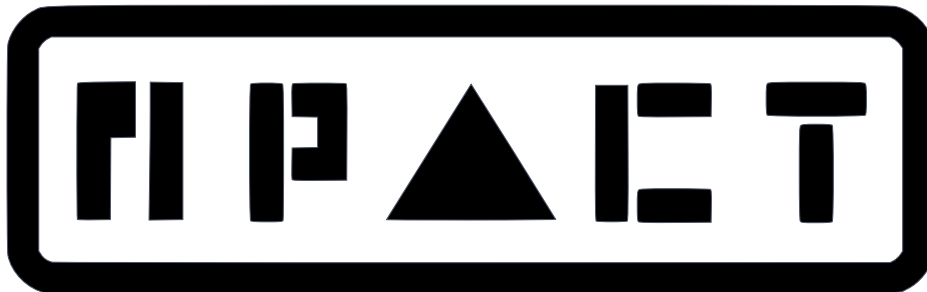


This report has been prepared by a collaboration of The University of Edinburgh, and Nakatomi Plaza Arts and Culture Trust and relates to the projects AISEC. The Turing Trust is also an associated project partner. The content and recommendations presented in this manuscript reflect the views of the authors alone.

Scope of The Whitepaper

As we enter a new phase of the internet, metaverses emerge as a new technology empowering its users and opening the gates for a myriad of new opportunities. The metaverse, effectively a virtual reality parallel to the so called “real world” allows new heights of interaction. Many companies have already started to tap the potential of the metaverse providing exciting new means for users to interact online, through games, marketplaces and virtual world building, however this is just the beginning. One avenue in particular we feel particularly strongly about is the charitable and empowerment opportunities made available through the metaverse. Charities live and die on their interactions with their users, they depend on people for donations and to spread awareness, however this comes at a cost. Running an event, setting up booths, printing materials and outreach are all costly. The metaverse provides a unique opportunity to achieve all these same goals, to reach a truly global audience without economical and geographical restrictions all at a much lower cost.

In this work we first present a review of the metaverse providing definitions and explanations of all concepts underpinning it, using the Decentraland metaverse as case study, and then present a detailed methodology for charities to operate on the metaverse. In our methodology we highlight potential income streams, formats for outreach as well as explaining the process to begin setting up your virtual charity. NPACT have already partnered up with charities to raise money in the metaverse through the first concert to benefit charity in decentraland as well as more traditional means such as donation kiosks. We use these examples to showcase the opportunities, constraints and advantages of the metaverse as a means for charitable endeavours on the metaverse.



Partners

Nakatomi Plaza Arts and Culture Trust

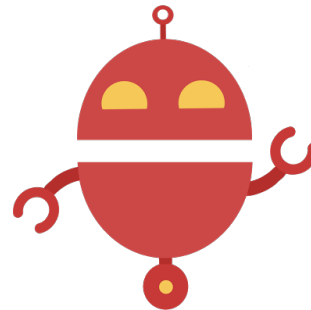
The Human Rights Village, or Nakatomi Plaza Arts and Cultural Trust, are offering freespace for charitable organizations to experiment with or maintain a presence in the metaverse. This presence can range from links providing certain information to members of the organization interacting with users through an organizational avatar. Organizations, having designated space designed specifically for their cause, can utilize their digital zone for user interaction at any time.



AISEC

AI applications have become pervasive: from mobile phones and home appliances to stock markets, autonomous cars, robots, and drones. Each application domain comes with a rich set of requirements such as legal policies, safety and security standards, company values, or simply public perception.

As AI takes over a wider range of tasks, we gradually approach the time when security laws, or policies, ultimately akin to Isaac Asimov's "3 laws of robotics" will need to be established for all working AI systems. A homonym of Asimov's first name, the AISEC project aims to build a sustainable, general purpose, and multidomain methodology and development environment for policy-to-property secure and explainable by construction development of complex AI systems



This project will employ types with supporting lightweight verification methods (such as SMT solvers) in order to create and deploy a novel framework for documenting, implementing and developing policies for complex deep learning systems. Types will serve as a unifying mechanism to embed security and safety contracts directly into programs that implement AI. The project will produce an integrated development environment with infrastructure to cater for different domain experts: from lawyers and security experts to verification experts and system engineers designing complex AI systems. It will be built, tested and used in collaboration with industrial partners in two key AI application areas: autonomous vehicles and natural language interfaces (aka chatbots).

The Turing Trust

The Turing Trust was set up in 2009 in honour of Alan Turing by his family. Today we honour his remarkable legacy by providing quality IT resources and training to schools in sub-Saharan Africa. Our operations in the UK, based in our Edinburgh workshop, provide valuable training & volunteering opportunities whilst reducing waste and contributing to an environmentally friendly society.



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Foreword

The Turing Trust supports education in sub-Saharan Africa by reusing computers and improving teacher training using ICT. We provide skills development in the UK while reducing waste and contributing to an environmentally friendly society. The majority of our work has is in Malawi, with a focus on computer labs for rural schools. We have also supported a handful of schools in other countries, notably last year in Zimbabwe, Uganda and the Gambia. We have also supported organisations in the UK, providing them with IT equipment to help respond to the impacts of COVID-19 lockdowns. In total, we have now supported 211 schools and organisations across the UK and sub-Saharan Africa. We have seen tremendous progress made by some of the schools we've been working with in Malawi, where IT skills are a prerequisite to attending university. For example, after using our donated IT equipment for a few years Robert Laws Secondary School have seen the number of their students admitted to university, at just 20 students in 2019, increasing more than threefold to 63 students in 2020. Beyond these social impacts our IT reuse programme has generated significant environmental benefits throughout the year too. In 2020 we diverted 45 tonnes of PCs that would otherwise go to waste and provided equivalent carbon savings of 954 tonnes. Over the last few years over 81,000 students have been able to learn vital IT skills thanks to IT equipment that has been donated to The Turing Trust.

Through the initiatives proposed by NPACT and the many advantages of the metaverse we see numerous ways in which we can make even more of an impact. The unique properties of the metaverse, such as the massive decentralisation, outreach and interactive elements will allow us to reach new audiences previously beyond our reach. The metaverse itself is a ripe opportunity to provide resources and new skills to disadvantaged communities. By being at the forefront of this new internet revolution The Turing Trust hopes to begin a charitable revolution, collaborating to innovate new ways for community empowerment. The opportunities presented in this paper set the foundations of a new age of charitable endeavours and we are delighted to be beginning this journey.

Yours sincerely,
James Turing, MEng, PhD
Founder & CEO, Turing Trust



1 | Decentraland

1.1 The Metaverse

What is the metaverse? At its core, the metaverse is simply a digital universe: a world, not unlike the physical world we live in, that exists online. While it is sometimes considered a far-off idea, based in science fiction ¹, the truth is that it exists right now ², and continues to evolve outside the purview of many casual internet users.

The metaverse has several identifying characteristics, some of which will be key to the discussion of this white paper: that it's always on, that it is experienced live and in real time, and that it has an economy of its own which is fully functioning ³. It is the next stage in the evolution of the internet: an augmented reality where content that currently exists on static pages can be experienced in an immersive setting.

For an example of how this might work, consider the way shopping has changed over the decades. Shopping malls host a variety of stores, with the biggest and most popular acting as focal points ⁴. Smaller shops benefit from their proximity to these larger, more popular stores; while they may draw a small customer base on their own merit, they often benefit greatly from the pull that larger shops offer. Shopping malls, which generally offer entertainment and dining, offer a draw to customers, and many visit these locations with no clear intention to make a purchase, but leave with goods, nonetheless ⁵.

The widespread use of websites changed shopping for many. All of a shop's products can be featured in one place, without the constraints of physical space, and customers can visit at any time.

¹Cathy Hackl, *The Metaverse Is Coming And It's A Very Big Deal*, Forbes, Jul. 5, 2020, <https://www.forbes.com/sites/cathyhackl/2020/07/05/the-metaverse-is-coming--its-a-very-big-deal/?sh=5e1ff2ac440f>

²Hal Koss, *Are You Ready for the Metaverse?*, Built In, July 21, 2020, <https://builtin.com/media-gaming/what-is-metaverse>

³Hal Koss, *Are You Ready for the Metaverse?*, Built In, July 21, 2020, <https://builtin.com/media-gaming/what-is-metaverse>

⁴These larger stores are called Anchor Stores, and are often primary considerations in commercial leases. For more information, see Anchor Store, Shopify Business Encyclopedia, <https://www.shopify.com/encyclopedia/anchor-store>.

⁵For further discussion and statistics on why consumers frequent shopping malls, see Gina Acosta, *How malls can attract more shoppers*, Retail Leader, June 21, 2018, <https://retailleader.com/how-malls-can-attract-more-shoppers>.

Transactions are automated, eliminating the need for staff with regular hours. While all of these advantages have revolutionized commerce, the web cannot offer the same experience as shopping malls and plazas ⁶.

In the metaverse, all of the advantages of the internet age remain intact, with the added benefits of real-world shopping. A mall in the metaverse will never close, and while it can be staffed by actual people, there is no requirement that stores do so. Smaller shops will benefit from their close proximity to larger shops and attractions, just as they do in malls in the physical world, and users can enjoy exploring areas of the metaverse the way that they might enjoy walking the halls of a shopping mall.

1.2 Decentraland

Decentraland (DCL) is a virtual world that exists online and can be accessed by anyone ⁷. Visitors use avatars, which they design to look however they choose, to move through the world. In look, it is reminiscent of a video game, but in purpose, it offers a place to socialize, play, and explore. DCL exists inside the metaverse and runs on the Ethereum blockchain. Decentraland is governed by a decentralized autonomous organization, or DAO, with ownership resting with the landowners and holders of MANA, the in-world currency. Just as the worldwide web harnessed the internet for individual, everyday use ⁸, so Decentraland is taking the idea of the metaverse and turning it into something that anyone, from the tech savvy to entrepreneurs to casual visitors, can use to experience the metaverse today.

Decentraland consists of a set number of LAND parcels, which are bought and sold in a similar fashion to traditional. LAND is a token on the Ethereum blockchain, as is the digital in-world currency, called MANA. While this use of cryptocurrency might seem daunting to those unfamiliar with it, in practice, anyone who has used traditional currency to make purchases online is likely to find that they are already well equipped to transact with cryptocurrency ⁹.

Within DCL, landowners retain voting rights under the terms of the DAO ¹⁰, a more comprehensive explanation of which can be found in Section II.e. As is the case with real estate in the physical

⁶Shopping malls have, for the most part, been negatively impacted by the popularity of online shopping, and many have struggled to adapt. For more information on this, see, for example, Hayley Peterson, Anchor stores like JCPenney and Macy's once drew crowds to suburban malls. Now their struggles could push hundreds of malls into extinction, *Business Insider*, May 24, 2020, <https://www.businessinsider.com/departments-stores-shutting-down-could-push-malls-into-death-spiral-2020-5>. Some might argue that entertainment has become the new anchor: see, for example, *The New Anchor Stores in Modern Shopping Centers and Major Malls*, *Shopping Centers*, Aug. 15, 2018, <https://shoppingcenters.com/article/new-anchor-stores-modern-shopping-centers-major-malls/>

⁷www.decentraland.org

⁸Evan Andrews, *Who Invented the Internet?*, *History*, Oct. 28, 2019, <https://www.history.com/news/who-invented-the-internet>

⁹For basic information on LAND in Decentraland, see, for example: *Decentraland Land, NFT Plazas*, <https://nftplazas.com/decentraland/decentraland-land/>

¹⁰For further explanation on voting rights, see *Community Voting, Decentraland*, <https://docs.decentraland.org/decentraland/community-voting/>

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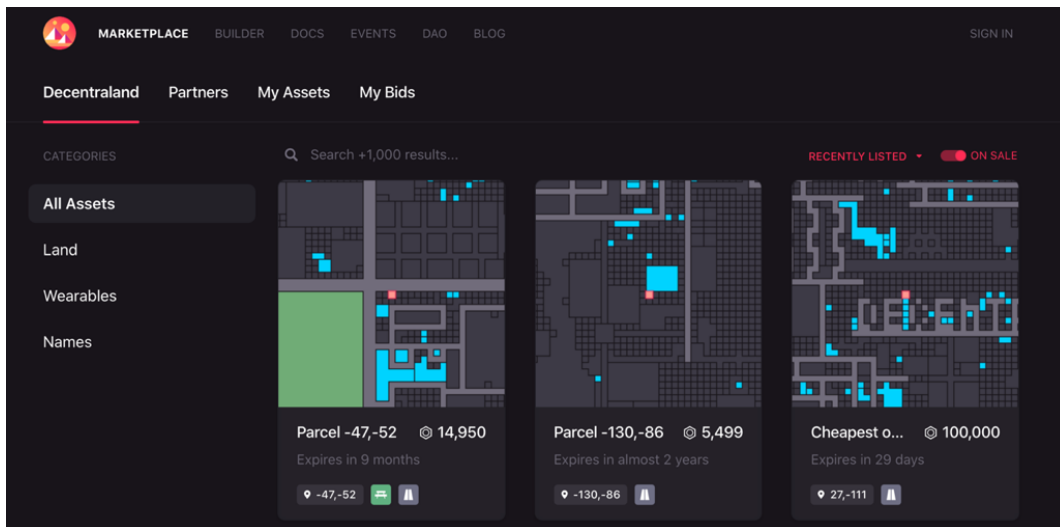


Figure 1.1: The Marketplace is where users buy & sell LAND and assets, all of which are NFTs

world, LAND is valued based on location within the virtual world, as well as scarcity and demand. The amount of LAND in DCL is finite, which drives demand up as the platform becomes more popular. While some areas of the game have been built into immersive experiences, including a casino, games, and galleries, other parcels have yet to be developed. It is this ongoing development that makes DCL's future an exciting prospect for many ¹¹.



Figure 1.2: In DCL, the real meets the surreal, and interactions with bots are as common as interactions with other users

The concept of a DAO is enticing in the metaverse due to the fact that a key characteristic of the metaverse is its functioning economy. Users in DCL have invested significant amounts of money into

¹¹Speculation on the future of Decentraland is well documented. See, for example, Janine Yorio, Here Comes the Virtual Real Estate Boom, Coindesk, Feb. 16, 2021, <https://www.coindesk.com/here-comes-the-virtual-real-estate-boom>.

their investments, some through their LAND investments and others through significant investments in businesses which will operate in DCL¹². Having voting rights allows users to invest with the knowledge that changes will not be made to suit the needs of a corporation or individual which owns the platform; instead, any changes to DCL will be made through democratic agreement and will almost certainly serve to expand the functionality of DCL within the metaverse, with no concern for the profits of a small group¹³.

1.3 The Future of DCL

Just as no one could accurately predict the reach and scope that the web would have on everyday life¹⁴, so it's impossible to tell just how the adoption of the metaverse—and, by extension, DCL—will one day affect everyday life. We can, however, follow trends and track the intentions of companies which have already begun to build in DCL¹⁵.



Figure 1.3: Decentraland Crypto Valley

¹²Partnerships such as that with Atari (Jamie Redman, Atari to Launch a Crypto-Fueled Gaming Platform in the Ethereum Metaverse Decentraland, Bitcoin.com, Mar. 10, 2021, <https://news.bitcoin.com/atari-to-launch-a-crypto-fueled-gaming-platform-in-the-ethereum-metaverse-decentraland/>) continuetoemerge.

¹³See the Decentraland announcement regarding the creation of the DAO: Time to vote! Have your say, Decentraland, Nov. 29, 2019, <https://decentraland.org/blog/announcements/time-to-vote-have-your-say/>

¹⁴While internet use affects nearly every aspect of our lives in some way, for basic statistics, see <https://www.statista.com/statistics/617136/digital-population-worldwide/#:~:text=How%20many%20people%20use%20the,the%20internet%20via%20mobile%20devices.>

¹⁵For a discussion on investors in DCL, including investors in cryptocurrency and NFTs, see, for example, Elizabeth Howcroft, The 'metaverse' bet: crypto-rich investors snap up virtual real estate, Reuters, Apr. 19, 2021, <https://www.reuters.com/business/metaverse-bet-crypto-rich-investors-snap-up-virtual-real-estate-2021-04-19/>

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The concept of a virtual world is not new and has already proven profitable¹⁶. What DCL offers is the next stage in the evolution of the metaverse, and it aims to do it through a DAO, meaning the users themselves are the owners of the platform. When a person owns something in DCL, whether it's LAND itself or a structure that a user has created on a parcel, other users cannot alter or destroy that possession. In this way, DCL is set apart from other interactive online games.



Figure 1.4: Decentraland Maker Space

At its start, Decentraland offered a platform for trading non-fungible tokens, or NFTs. It continues to offer this through its marketplace, as well as an interactive way for users to enjoy their NFTs¹⁷. In the years since its inception, DCL has expanded far beyond such a simple landscape. Gaming enthusiasts have found a platform for some of their favourites¹⁸, artists have begun experimenting with NFTs more openly, and companies have begun to test the waters of doing business in the metaverse.

One prominent example of this emerging trend is gaming company Atari¹⁹. Known for its popular arcade-style games, Atari announced in 2021 that the company would be partnering with Decentraland Games to build a casino in DCL²⁰. This casino is planned for the Gaming District, which is one of many districts that users can explore in-world²¹.

As DCL is the fastest growing of all of the virtual worlds based in cryptocurrency²², it is reasonable to see this partnership with Atari as an early stage in the evolution of commerce in the metaverse.

¹⁶What is Decentraland (MANA), Medium, Apr. 3, 2018, <https://medium.com/@cryptoiscoming2017/what-is-decentraland-mana-5e0e85a42fdb>

¹⁷Giotto De Filippi, Decentraland: The new platform for exchanging virtual goods, Medium, Dec. 13, 2017, <https://medium.com/@giottodf/decentraland-the-new-platform-for-exchanging-virtual-goods-19b812b9171f>

¹⁸The Future of Chainbreakers, Medium, Apr. 11, 2019, <https://medium.com/chainbreakers/the-future-of-chainbreakers-96754e9e9b03>

¹⁹<https://www.atari.com/>

²⁰<https://www.coindesk.com/atari-casino-decentral-games-crypto>

²¹Decentraland District Updates, Jan. 18, 2019, <https://decentraland.org/blog/announcements/district-update/>

²²Investing in Decentraland in 2021, Republic, Apr. 5, 2021, <https://republic.co/blog/real-estate/investing-in-decentraland-in-2021>

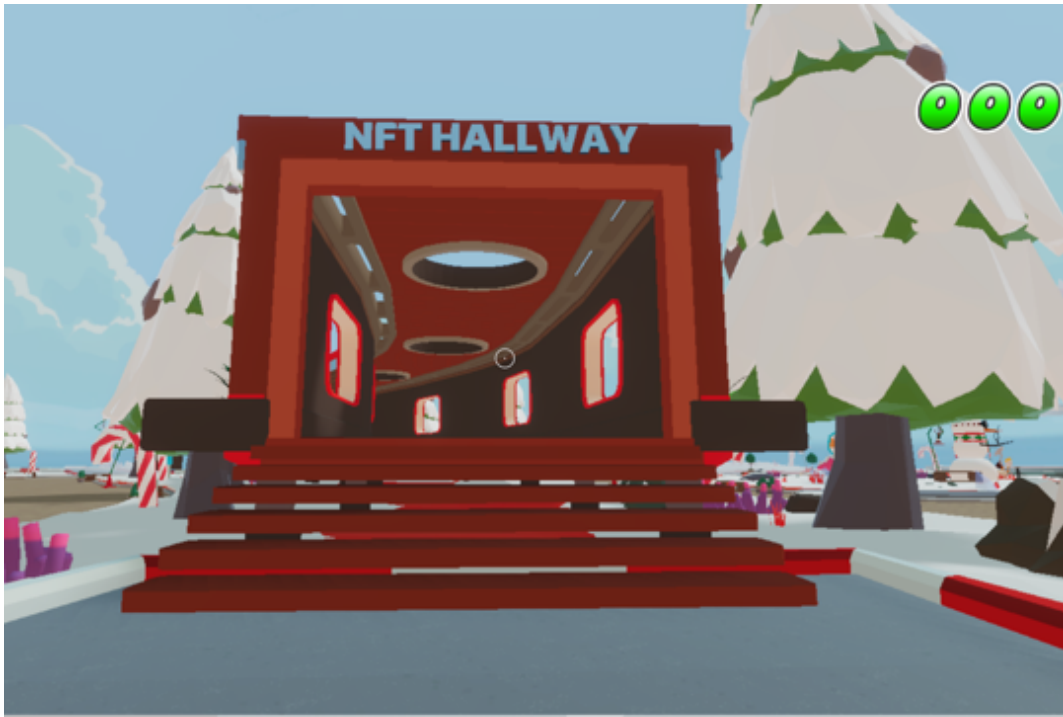


Figure 1.5: Decentraland NFT Hallway



Figure 1.6: Decentraland Games

2 | the Decentralized Digital Economy

Decentralized digital economies are quickly emerging, with decentralized autonomous organizations, or DAOs, increasingly becoming legitimate alternatives²³ to the traditional model of economics favoured in most countries today. DAOs are decentralized by definition, meaning there is no central institution controlling them²⁴. This primary feature of cryptocurrencies, like Bitcoin and Ethereum, is not regulated by either government or bank, distinguishing them from more traditional forms of currency. Using smart contracts, the contents of which are recorded on the blockchain, transactions with cryptocurrencies are fully automated and fully digitalized.

2.1 Blockchain

Whilst nowadays most people will have heard of blockchains, mostly due to the popularity of cryptocurrencies²⁵, fewer people are aware of the underlying technical properties enabling the functionality of this technology. In brief, the blockchain can be seen as a globally accessible, auditable log of transactions. These transactions represent the core components of a blockchain network, which is made up of inputs and outputs. You can imagine a transaction as something being sent (input) and something by received (output). Each of these transactions must be digitally signed by the sender and authenticated by the receiver, consequently ensuring validity of the transaction. A digital signature behaves similarly to how a more traditional signature would behave. In a more traditional document, a user attaches a unique identifier in the form of their name at the bottom of a document, that can guarantee that an authorized person signed the document. In real life this is

²³Andrew Asmakov, DAOs Are Now Officially Recognized as a New Type of LLC in Wyoming, Decrypt, Apr. 22, 2021, <https://decrypt.co/68789/daos-are-now-officially-recognized-as-a-new-type-of-llc-in-wyoming>

²⁴<https://rdcu.be/cjONZ> or Hsieh, YY., Vergne, JP., Anderson, P. et al. Correction to: Bitcoin and the rise of decentralized autonomous organizations. *J Org Design* 8, 3 (2019). <https://doi.org/10.1186>

²⁵For a look at the popularity of cryptocurrencies in a sampling of countries, see Katharina Buchholz, How Common is Crypto?, Statista, Mar. 17, 2021, <https://www.statista.com/chart/18345/crypto-currency-adoption/>. For supporting information regarding the popularity of Crypto in hard-to-reach countries, see Phillip Inman, Cryptocurrencies rise in popularity in world's conflict zones, *The Guardian*, Feb. 9, 2021, <https://www.theguardian.com/technology/2021/feb/09/rise-in-popularity-of-cryptocurrencies-in-worlds-conflict-zones>. For a look at popularity based on generation, see Marie Huillet, Millennials 3 Times More Likely to Invest in Crypto Than Gen X: Survey, *CoinTelegraph*, Jul. 23, 2019, <https://cointelegraph.com/news/millennials-3-times-more-likely-to-invest-in-crypto-than-gen-x-survey>

enforced only loosely, and in practice it could be forged by someone familiar with your handwriting. Digital signatures, on the other hand, rely on unforgeable cryptographic principles, with far more guarantees.

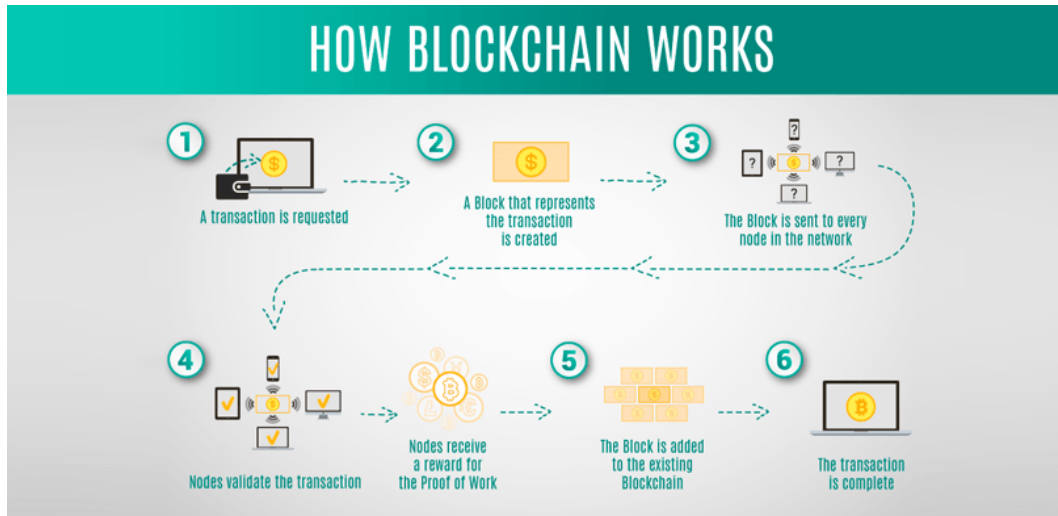


Figure 2.1: Blockchain Explained. Source: www.zignuts.com²⁶

The term cryptography refers to the field of mathematics and computers science that ensures that transmitted data can only be read and understood by those intended²⁷. Not only does cryptography protect data from theft or alteration it can also be used for authentication. One such way it can ensure authenticity is the use of digital signatures. In layman terms, a generic process of digitally signing a message (or blockchain transaction) needs the following two procedures:

1. The message is hashed²⁸. Hashing is the means to create a uniquely identifiable string through a hash function. A hash function takes in an arbitrary length input (text, email, transaction...) and generates a string output of fixed length composed of random letters and numbers. A hash function is known a one-way function, this means that whilst the result of the hashing can be replicated, it cannot be reversed to find the input that resulted in the hash. By these properties if two identical files are hashed, they will produce the same output, but if one has been tampered with the results will not match. This is used to ensure the transferred message remains untampered.

²⁶For image source, as well as further discussion on how blockchain works, see How blockchain architecture works? Basic Understanding of Blockchain and its Architecture, Zignuts Technolab, May 5, 2021, <https://www.zignuts.com/blogs/how-blockchain-architecture-works-basic-understanding-of-blockchain-and-its-architecture/>.

²⁷For further discussion on cryptography, see, for example: Josh Fruhlinger, What is cryptography? How algorithms keep information secret and safe, CSO, Oct. 15, 2020, <https://www.csoonline.com/article/3583976/what-is-cryptography-how-algorithms-keep-information-secret-and-safe.html>

²⁸For more information on hashing, and source of above image, see Michael Gates, What is Hashing?, Redcom, June 11, 2019, <https://www.redcom.com/what-is-hashing/>.

2. The message is encrypted with Public Key cryptography. Encryption is the method by which a message is converted into a secret code that hides the information's true meaning, the original meaning can only be retrieved by decrypting through an associated key. This specific type of encryption uses a key pair system, a public key, and a secret key. The keys have the following properties, given a message m encrypted with public key PK the resulting encrypted text can only be decrypted with the corresponding secret key SK (i.e. $\text{Decryption}(\text{Encryption}(m,PK),SK) = m$, if and only if PK and SK are associated public key secret key pairs). As expected by the names, one key (PK) is publicly shared, whilst the other (SK) is only known to the user. If one wishes to send a message to someone that only they can read they will encrypt it with their public key, as only their secret key will be able to decode the message.

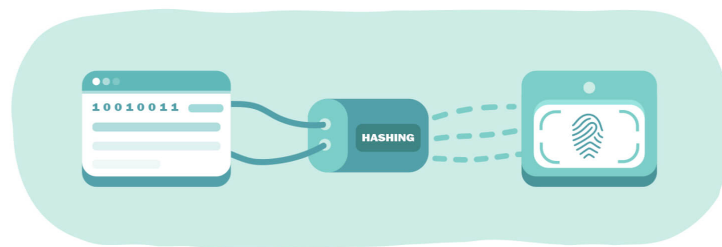


Figure 2.2: Hashing Visualized. Source: Redcom.com

The process of digital signature uses these two procedures to ensure the transaction was not modified and is authentic. The transaction is hashed, and then encrypted with the sender's private key. This differs from sending an encrypted text ²⁹ as now anyone can reverse the encryption using the known public key of the sender. Since the hash is unique, if the message is modified in anyway it will lead to a different hash. To verify the digital signature, the receiver will get his own copy of the message, hash it with the same function, decrypt the sender's digital signature with the public key and compare hashes. If the hashes match the message is intact and unmodified and the sender's transaction is authenticated. Going back to the blockchain, since it contains the entire ordered set of transactions, it lets anyone in the world download it and verify its integrity by this same mechanism. This ensures that all transactions are authentic, no modifications have been made, and that no one has tampered with any of the data.

2.2 Smart Contracts

Transactions are functions that get stored on the blockchain, and the blockchain is an audible log of transactions, however smart contracts are the thing that glues these components together. A smart contract is a piece of code that sits on the blockchain and acts as a trusted party. Of course, unlike

²⁹or more information on encrypted texts, see, for example, Zack Whittaker, *Cybersecurity 101: How to choose and use an encrypted messaging app*, TechCrunch, Dec. 25, 2018, <https://techcrunch.com/2018/12/25/cybersecurity-101-guide-encrypted-messaging-apps/>

traditional trusted parties this one is programmatic rather than a human. The code and associated contract are decentralized and exist across the blockchain network. The job of the smart contracts is to execute the transactions. Once a transaction is executed it is irreversible³⁰. Programmatically, a smart contract may contain terms and conditions that a transaction between two parties (previously sender and receiver) must adhere to; these conditions are binding and automatically enforced. Through the associated blockchain and public key infrastructure, smart contracts allow trusted transactions and agreements to be carried out across distributed parties without need of a central governing authority, legal entity or any other external enforcement mechanism.



Figure 2.3: Smart Contract benefits explained. Source: www.dreamstime.com

³⁰For a more detailed breakdown of smart contracts, see, for example: Wei-Meng Lee, Understanding Blockchain: A Beginners Guide to Ethereum Smart Contract Programming, Code Magazine, Apr. 26, 2021, <https://www.codemag.com/Article/1805061/Understanding-Blockchain-A-Beginners-Guide-to-Ethereum-Smart-Contract-Programming>

2.3 Cryptocurrencies

Cryptocurrencies represent a digital asset, exchanged by means of transactions over the blockchain by terms specified in a smart contract. The individual coin ownership records are logged through the blockchain, consequently ensuring one's ownership of the asset in a verifiable manner. Bitcoin is the most known cryptocurrency, created in 2009 by Satoshi Nakamoto ³¹. Whilst similar electronic currencies had been proposed in the past this was the first to be fully decentralized and built using the blockchain. What resulted from this is a massive number of alternate currencies, also referred to as “altcoins”, as of 2021 there are over 4000 altcoins in circulation ³².

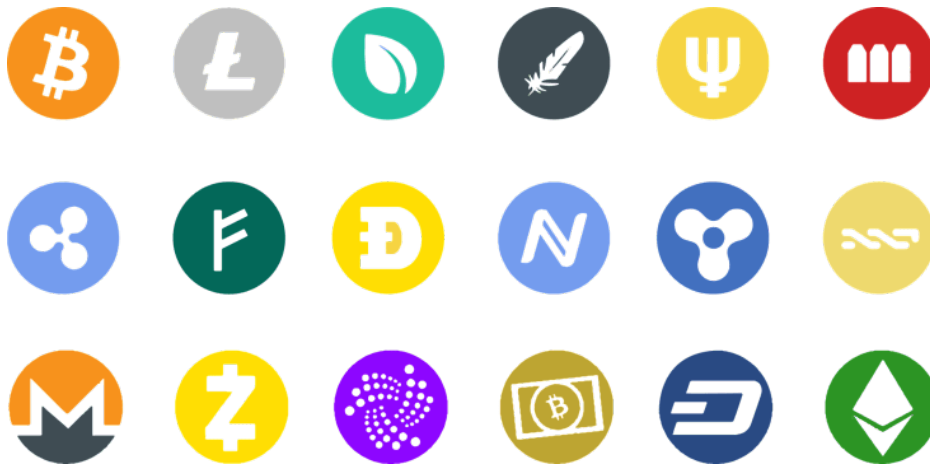


Figure 2.4: Some available cryptocurrencies. Source: www.atozmarkets.com³³

Once a crypto currency is introduced, a contract specifies the terms of the currency. This dictates the initial number of coins in circulation, the rate at which more coins will be generated (normally a decreasing rate over time) and a flat cap on the number of coins that will ever be circulated. Unlike in traditional currencies large amounts more money cannot just be printed to create inflation. Like physical assets, prices of these coins are dictated by supply and demand. The parameters of the initial specifications will greatly influence the maximum value of a currency. In order to ensure that the transactions are all valid cryptocurrencies undergo a process called mining. Miners will go through transactions in the ledger to validate authenticity, to ensure integrity of the chain. In order to incentivize this behaviour miners are rewarded, if they successfully validate transactions, they are awarded new cryptocurrency. As the validation of transactions may be a computationally intensive task, often miners pool resources, sharing out the rewards amongst themselves. The coins may then be traded on exchanges for other coins or traditional currencies.

³¹<https://bitcoin.org/en/>

³²Best, Raynor de. “Number of Crypto Coins 2013–2021.” Statista, 15 Feb. 2021, www.statista.com/statistics/863917/number-crypto-coins-tokens/.

³³For image source, see Shulammit Edheri, Top 10 Cryptocurrency 2021, Atoz Markets, Jan. 24, 2021, <https://atozmarkets.com/news/top-10-cryptocurrency-2021/>

2.4 Non Fungible Tokens

Unlike cryptocurrencies which are inherently fungible (or mutually interchangeable), another type of unique blockchain token has recently risen in popularity known as Non-Fungible Tokens (NFT) ³⁴. An NFT is a unique digital artefact such as painting, video or other digital asset, whose unique properties have been stored in the blockchain as a token. These tokens can be purchased, and they provide the buyer the authenticity of owning the digital asset. Using the digital signature scheme as discussed in previous section we know that each item can be uniquely identified by means of a hash and signature combo. If a non-authentic artifact, even though aesthetically identical to the original is verified against the stored token in the blockchain, it will not pass. Consequently, enabling the buyer to be the only person who can verifiably prove to have ownership of the asset. This unattackable proof of authenticity is a very attractive option for digital artists to sell their work, as even if their art is copied or distributed without consent only one piece will result to be authentic. This mechanism increases the value of the original piece and ensures the artist can get credit and appropriate payment for their work.

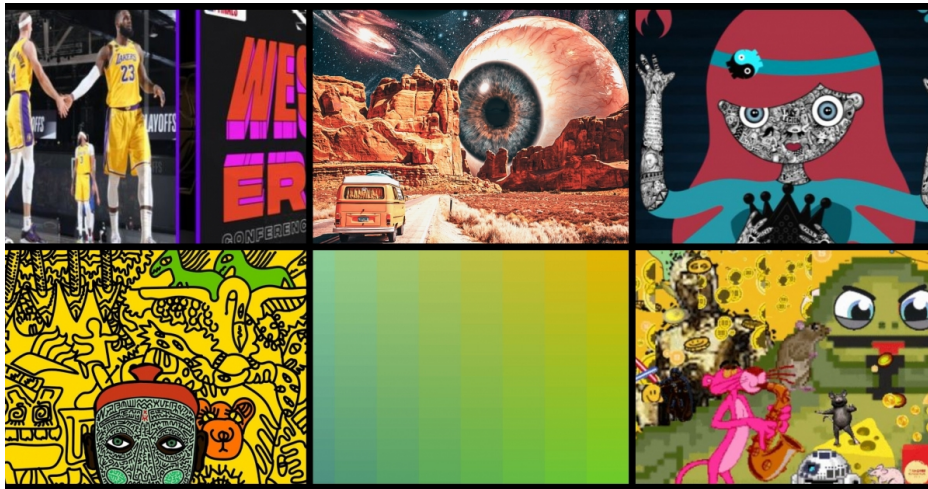


Figure 2.5: Example NFT Art. Source: www.coindesk.com³⁵

³⁴For information about NFTs, see, for example, Mitchell Clark, NFTs, explained, The Verge, Mar. 11, 2021, <https://www.theverge.com/22310188/nft-explainer-what-is-blockchain-crypto-art-faq>.

³⁵For image source, and a discussion on NFT artwork, see Brady Dale, It's an NFT Boom. Do You Know Where Your Digital Art Lives?, Coindesk, Feb. 23, 2021, <https://www.coindesk.com/its-an-nft-boom-do-you-know-where-your-digital-art-lives>

2.5 Decentralized Autonomous Organizations

Once you have an auditable log, means to agree upon terms, means to easily exchange assets in a verifiable manner and a way to formally enforce contract between entities in a transparent³⁶ manner, the natural progression is to form an organization. An organization which uses the blockchain infrastructure to manage its dealings is known as a Decentralized Autonomous Organization (DOA). Through use of smart contracts, rules can be enforced, jobs may be exchanged, people hired, and services can be provided³⁷. What is perhaps even more enticing is that its members get voting rights and are able to influence decisions and shape the organizations around them in a purely democratic fashion³⁸. This type of organizations with full transparency, verifiable transactions and auditable regulations represents a very promising practice for its members and employees.

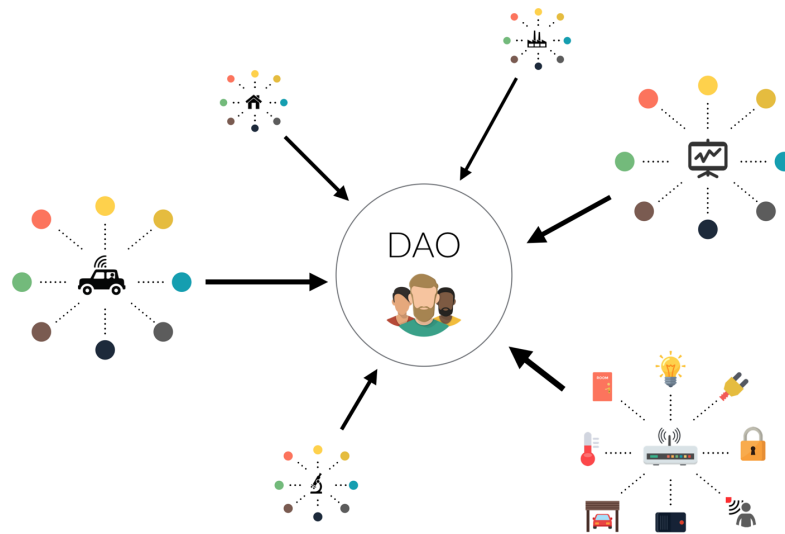


Figure 2.6: Decentralized Autonomous Organisations. Source: www.blockchainhub.net³⁹

The Decentraland Metaverse operates as a DAO and has proven to be a promising platform through which its users can experiment with and push the limits of the decentralized digital economy. One meta-engineer, Lastrum, with whom our Institute now works closely, was able to establish a kiosk within the metaverse where customers could order pizza. They paid in Mana, the native DCL cryptocurrency, and the entire transaction happened in-universe. In the end, a Domino's Pizza⁴⁰ was delivered to the customer's real-world address.

³⁶Bertino, Elisa, Kundu, Ahish & Sura, Zehra, 2019. Data Transparency with Blockchain and AI Ethics. *ACM journal of data and information quality*, 11(4), pp.1-8

³⁷Gomes, Silvana Santos, 2018. Smart Contracts: legal frontiers and insertion into the Creative Economy. *Brazilian journal of operations & production management*, 15(3), pp.376-385

³⁸See Chapter 1, section 2 for our discussion on DAOs and voting in DCL

³⁹For image source, see *Tokenized Networks: what is a DAO?*, Blockchainhub Berlin, July 2019, <https://blockchainhub.net/dao-decentralized-autonomous-organization/>

⁴⁰<https://www.dominos.com/en>



Figure 2.7: Decentraland Pizza Stand

Decentraland is also home to a great number of non-fungible tokens, or NFTs. These can range from wearable clothing or digital art to unique pieces of LAND that belong and are solely alterable by the owner. Like all transactions taking place in this metaverse, the purchase of NFTs utilizes the blockchain, and item ownership is forever digitally proven.

With many NFTs created and purchased in recent years, one particularly interesting instance is Beeple's digital. Beeple's NFT, titled "Everydays: the First 5000 Days," sold at auction for USD \$69,346,250 in March of 2021. A photo of the NFT can be found below ⁴¹:

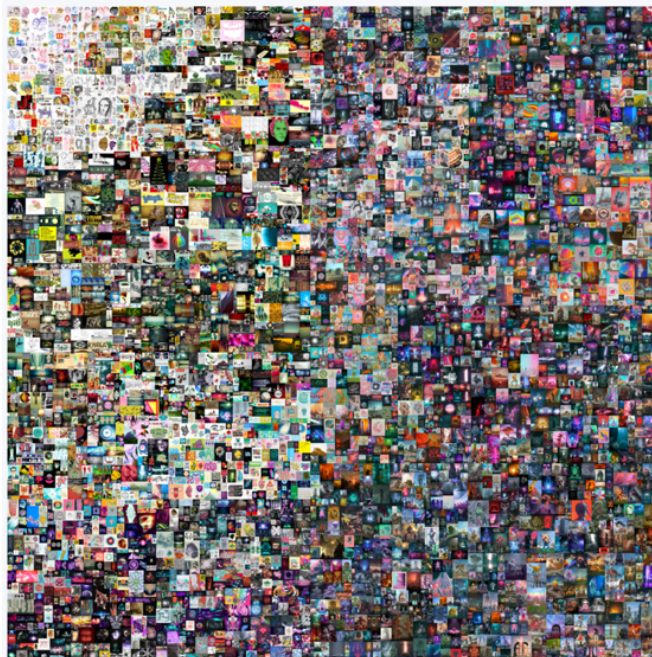


Figure 2.8: "Everydays: the First 5000 Days,"

⁴¹Christie's, <https://onlineonly.christies.com/s/first-open-beeple/beeple-b-1981-1/112924>

CHAPTER 2. THE DECENTRALIZED DIGITAL ECONOMY

These examples show the spectrum of possibilities in Decentraland, and, by extension, through engagement with decentralized digital economies. Innovative users continue to change the way we operate in the metaverse on a daily basis.

3 | Case Study and Charitable Opportunities


Within Decentraland, a live concert was put on to benefit a charity. Through the observations and analytics we have gathered, we can use this concert as a case study to investigate the potential benefits of hosting events within the metaverse.



Figure 3.1: Event Information

3.1 Event Details

Name	'We Can Be Heroes' Live Charity Benefit Concert
Date	17 April 2021
Time	18:00-22:00 PST
Unique Visitor Count	248
Daily User Attendance	48% ⁴²
Concentration of Online Users at Event	85%
Amount raised	1200 mana (Approximately \$1800.00 at the time of the concert) ⁴³



3.2 Summary of Event

DCL is in the earliest stages of the adoption process ⁴⁴, a fact which is reflected in the daily user figures. When we consider that many companies attempting to break into the field have yet to adopt any model ⁴⁵, numbers which might seem insignificant in a wider context should be compared proportionally to the intake and attendance. Overall, both the number of attendees and funds collected were positive in this niche digital environment. Whether DCL maintains its position as the dominant metaverse remains to be seen; however, it must be remembered that early adopter advantage is a particular interest with cryptocurrency, as shown with the growth of Bitcoin from its

⁴²To see statistics on the number of users in DCL, see <https://catalyst-monitor.vercel.app/>

⁴³The conversion rate between MANA and USD fluctuates, and an up-to-date calculator can be found here: <https://coincodex.com/convert/decentraland/usd/>

⁴⁴The Decentraland White Paper, Esteban Ordano, et al, <https://decentraland.org/whitepaper.pdf>, is a good resource for those looking to see what the earliest adoption stages have entailed, and what the future of DCL is likely to look like.

⁴⁵George Miller, Atari and Bondly announce strategic partnership to launch dedicated NFTs followed by the Atari Metaverse gaming platform, European Gaming, Mar. 15, 2021, <https://europeangaming.eu/portal/latest-news/2021/03/15/88548/atari-and-bondly-announce-strategic-partnership-to-launch-dedicated-nfts-followed-by-the-atari-metaverse-gaming-platform/>

inception to present ⁴⁶. Regardless of outcome, DCL currently serves as an interactive model through which fundraising events can be analysed and critiqued. The various stages of metaverse fundraising events should be widely applicable.

3.3 Stages of Development

The initial case study went through four main stages before the final event took place. Stage 1 - Conceptualization, Stage 2 - Technological Compatibility and Capabilities assessment, Stage 3 - promotion and metaverse transformation, and Stage 4 - Performance, evaluation and fund raiser.

3.3.1 Stage One: Concept Formation

This initial phase and the idea for a live aid concert largely resulted from the ever-growing influence of the digital communities. Specifically, the Reddit community ⁴⁷, coupled with other popular social media apps such as twitch ⁴⁸, discord ⁴⁹ and YouTube ⁵⁰ drove the demand and direction of the event. This confluence of digital social demand and technological experimentation created an environment wherein the various stakeholders could constantly realign and coordinate their efforts, regardless of traditional work hours. In this manner, the developers, media, performers, event attendees and the charitable beneficiaries themselves created a bespoke event in an efficient and transparent manner.

The demand for such an event was apparent across multiple message boards, as enthusiastic users of the DCL platform were looking for new ways to seek entertainment and test the waters within the metaverse. Collaboration among artists, digital architects, and developers allowed for the formation of the idea and the creation of the stage on an existing plot of land, Nakatomi Plaza Arts and Culture Trust (NPACT). Through the use of the abovementioned forums, the planners of the event were able to gauge interest and adapt plans to best suit the existing audience. Future adoption of this model will see the concept formation stage tuning in to popular social media in order to best ensure that ideas will be adapted to the communities they wish to attract. This interactive model of planning, which includes ample space for redirection even after the planning has commenced, is something that real world venues and attractions cannot offer.

⁴⁶To understand the exponential growth of Bitcoin, see, for example, John Edwards, Bitcoin's Price History, Investopedia, Feb. 3, 2021, <https://www.investopedia.com/articles/forex/121815/bitcoins-price-history.asp>

⁴⁷<https://www.reddit.com/r/decentraland/>

⁴⁸<https://www.twitch.tv/>

⁴⁹<https://discord.com/>

⁵⁰<https://www.youtube.com/>

3.3.2 Stage Two: Technological Capability and Compatibility

Following the initial stage of digitally enabled organic growth and working group formation, three tracks were generally pursued:

Track 1: This track comprised mostly of metaverse engineers, or digital architectural programmers, coordinating closely with the artists

Track 2: Providing content and entertainment for the event, the artists coordinated acts according to talent, social media following, time zone considerations and DCL metaverse technological limitations

Track 3: Serving as the central hub for communication, development and coordination, the third track was tasked with promotion and production.

Through working and coordinating simultaneously, this multi-track approach proved innovative and efficient. As with many fields of emerging technologies, this multi-disciplinary model leveraged technology to create a global digital workspace, innovation hub, and ultimately, a new type of digital mentorship community. Artists collaborated whilst working simultaneously with digital architects, ensuring venue design met ongoing real time needs and interests. This dynamic—the ability to manipulate the venue until the time of the performance—is unique to the metaverse. It allowed for guests to experience the show in an immersive way, with the influence of the artists visible at every turn. Simultaneously, the communications team was able to promote the event using available avenues, including social media and web forums. This interactive model of promotion allowed the communications team to gather immediate feedback and work with the architects and artists to troubleshoot issues before they arose.

Each track built on and incorporated the skills of the other for a well-rounded and unified final product. The resulting digital amphitheatre, stage, live performance and success in charitable collection suggest this multi-track approach may be a reasonable initial model.

3.3.3 Stage 3: Promotion, Practical Limitations and the Metaverse Hub

Acting as the vanguard for benefit, the promotional team consisted of multiple experts in their given social media fields. These coordinated efforts included twitch live streaming, reddit reporting groups, discord, YouTube and multiple personal or professional servers globally. Like recording an event or taking a photo to share on one of these platforms, avatar-based events allow simultaneous and layered multi-media access opportunities. Attendees watched the show and discussed the art with each other through live community text messaging, direct messaging and employing other apps such as Discord to maintain verbal dialogue outside DCL. This level of interaction mirrors that which we experience when attending events in real life, and far outpaces the experience of traditional digital media consumption.

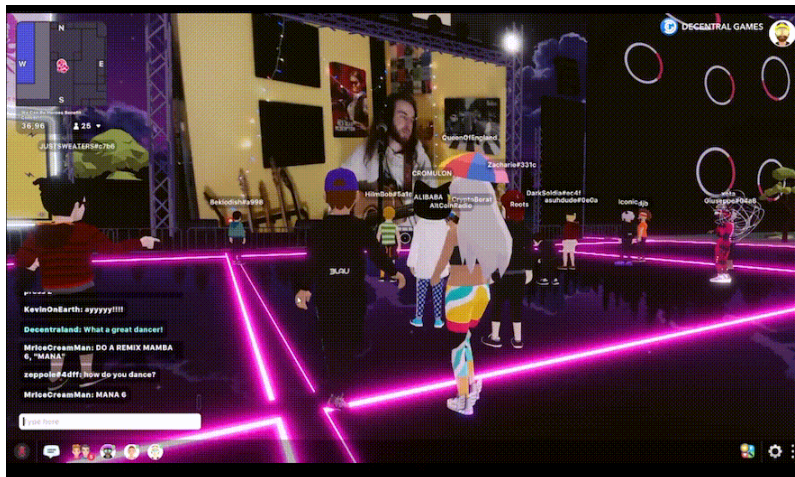
While the metaverse offers novel approaches, uses or combinations of existing technologies, it also comes with limitations. Beyond practical issues like time-zone coordination, underlying

programming limitations and the need for an expensive desktop to fully participate in the community may hinder future adoption and development. However, current advances in technology and constantly lowering prices may enable a very low barrier of entry, encouraging exponential growth.

3.3.4 Stage 4: Performances, Collection and Analytic Collation

Performances

As a decentralized digital venue, the acts and performances were not limited by the need for shared equipment or physical location. This allowed an eclectic yet compatible group of artists to showcase their talent and share any messages of social or political nature free from centralized censorship.



The show opened with an information video regarding the charitable purpose of the event, providing an enthusiastic and hopeful opening for Cromulon, the first performer. Cromulon is a hybrid artist merging digital art and music as his medium for sharing his messages of social inclusivity. The DCL environment appears fully compatible with this type of art, allowing the guests were able to interact with each other and the art through the abovementioned means, including messaging and employing other popular apps, which allowed for a more interactive performance and a deeper immersion into Cromulon's art.

This unique environment engendered discussion about both Cromulon and the issues highlighted by his performance.

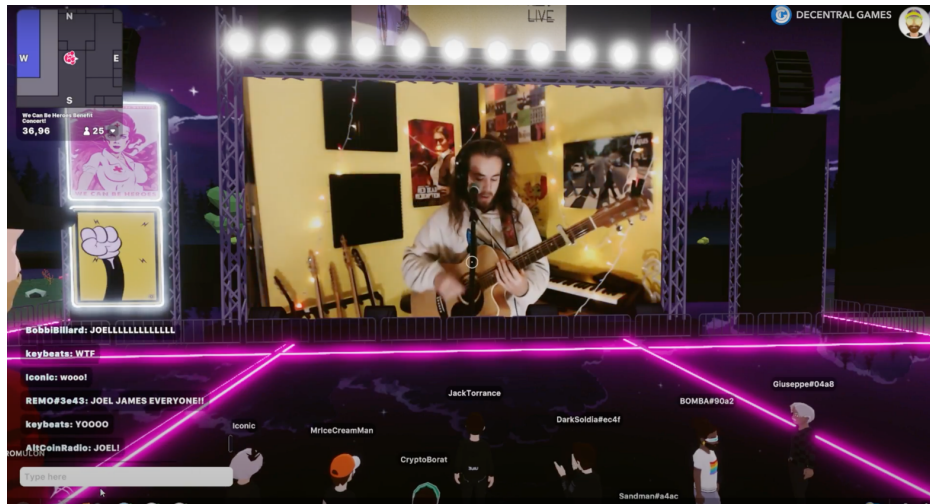
Following Cromulon, the next portion of the benefit consisted of multiple videos, musical stylings and art displays by Remo, a globally recognized talent. Remo, a founding member and driving force behind the benefit, volunteered his time and produced multiple exclusive NFT's that were auctioned with all proceeds going to charity.



This use of NFTs as a charitable fundraiser showcased the potential benefits that NFTs and their growing popularity might offer to the fundraising world. Utilizing the mid-point of the performances, significant engagement occurred, funds were raised, and perhaps most importantly, information regarding the beneficiary charities was provided in an engaging and interactive manner. Although not prepared for this event, analytics could be provided during and after future events regarding engagement and visits to the charity's home websites.



Performing from Australia, Joel James made history and set records as the first live benefit concert and most highly attended in DCL. Despite relying on multiple parties coordinating from different continents, the concert went off without a hitch. The only technical interruption occurred as a result of a newly placed and improperly tuned guitar string. In addition to allowing global access to a socially distanced live concert, the digital amphitheatre allowed unobstructed viewpoints and gathering sites for the attendees not possible in real life.



3.4 Decentraland Charitable Income Stream Potential

As with most charitable income streams associated with an internet presence, DCL offers the traditional benefits associated with a 24 hour/365-day digital presence. In addition to these, DCL offers:

- Avatar Anonymity for Stakeholder engagement
- Use of bots, or NPCs, for visitor interaction
- Avatars allow organization representatives to remain familiar regardless of operator
- Transparent blockchain display of donations and expenditures
- Metaverse limited fundraising like NFT's
- Low cost for retooling
- Enhanced safety features through an avatar's digital passport

3.5 Summary

While the concert may seem like a small-scale event compared with more traditional fundraising events and methods, the metaverse is only just beginning to grow in popularity. Each event that is hosted within DCL will open the door to new methods for engaging users and raising funds⁵¹. As

⁵¹For an example of other events which are moving into the virtual sphere, see Decentraland Virtual Event Space, Manchester Digital, <https://www.manchesterdigital.com/post/crypto-bates-group/decentraland-dcl-event-space>

CHAPTER 3. CASE STUDY AND CHARITABLE OPPORTUNITIES

was the case with this concert, such funds hold the potential to be allocated to involved NGOs and charities, and the scale of these events is likely to grow with each new idea and innovation.

4 | Charitable Opportunities

Opportunities within the metaverse are expansive, and it is reasonable to deduce that any potential for profit can also be applied to the non-profit world. Just as every charity and NGO is heavily advised to maintain a website and presence online ⁵², so too will they be encouraged to have a presence in the metaverse. Our Institute is taking a proactive approach, creating space for the non-profit sector on this emerging platform.

4.1 Fundraising in the Digital Age

In digital fundraising, the generations known as Millennials and Gen X are inspired by social media, while Baby Boomers are inspired by email ⁵³. While email has been around for decades, it only became widely used at the very end of the twentieth century ⁵⁴. Popular social media is even younger than that, with Facebook emerging in 2004 and Instagram having been launched in the past decade. This shows us that, while fundraising as a practice may date back many centuries, the current model has been completely transformed by the digital age, with each emerging technology offering new ways to gain support for a cause and secure funding.

4.2 The Future of Online Interaction

Technology has been moving swiftly forward since its embrace by everyday users at the turn of the century, and the worldwide pandemic of 2019/2020 has served to further push us toward a

⁵²or more information about the ongoing need to engage donors via the web, see, for example, <https://www.ironpaper.com/webintel/articles/nonprofits-invest-websites/#:~:text=Websites%20play%20a%20key%20role,on%2Dgoing%2C%20monthly%20donations>.

⁵³Nonprofit Fundraising Statistics [Updated for 2021], Double the Donation, <https://doublethedonation.com/tips/matching-grant-resources/nonprofit-fundraising-statistics/>. For more information on fundraising statistics, see, for example: Abby Jarvis, Fundraising Statistics: Incredible Insights to Raise More, Qgiv, <https://www.law.georgetown.edu/wp-content/uploads/2018/07/Rule-18-Handout-1.Secara-1.pdf>.

⁵⁴Sarah Left, Email Timeline, The Guardian, Mar. 13, 2002, <https://www.theguardian.com/technology/2002/mar/13/internetnews>

more digital world. From online meetings and workplace interactions⁵⁵ to the demand for socially distanced entertainment⁵⁶, the internet as we know it has begun the next stage of its evolution.

Users seek interaction with each other on their preferred platforms. For example, on Facebook, what was once a forum for sharing thoughts with your college classmates is now a multi-billion-dollar entertainment empire that offers groups, which act as modern-day chatrooms, games, business opportunities, the opportunity to buy-and-sell, and live streams. Instagram, owned by the same company, offers similar services, while branching out to include “Instagram TV” and “reels,” or short videos reminiscent of the popular app TikTok⁵⁷.

These social media platforms allow for a tiny glimpse into what people want: ever evolving technology that can be used to do the same things that people have always done. Users want to connect with each other, meet new people, and be entertained.

The most successful emerging platforms will take this model and find new ways to give people what they’ve always enjoyed. The Metaverse—a concept that is new to many, but not so new to the tech industry more generally⁵⁸—offers the merging of what is familiar and the possibilities of what can be achieved.

Take, for example, the simple concept of planting trees. Dozens of sites, both for-profit and non-profit, offer to plant a tree on behalf of donors⁵⁹. This concept has been taken to the blockchain, with “purpose driven tokens” that users can purchase⁶⁰; funding goes to planting trees in the real world, while donors own the token of a tree in the digital world. In a similar manner, we envision leveraging this type of social digital investment for the benefit of charitable organizations.

Thus far, we’ve seen a simple progression: what may once have existed as a list on a clipboard moved to a website, allowing for greater interaction that is not limited by geographical location or time zone; transactions which would once have been undertaken through cash and personal check are now done through credit card purchases or payment apps like PayPal and Venmo. Most recently, with the rise in popularity of blockchain-based tokens, the same transaction has moved along, allowing potential donors to engage with the newest and most exciting advances in the digital age.

In the metaverse, this can be taken further: donors can purchase trees (or plants more generally) which make up a digital forest that has a real-world counterpart being planted using funds raised. Within this forest, the possibilities are endless. Users can do what you’d do in a real-life forest, such as walking between trees, following paths, and taking virtual hikes. However, the builders of this forest have the opportunity to take the experience further and raise more funds in the process.

⁵⁵For a common example, see Mansoor Iqbal, Zoom Statistics, Business of Apps, Mar. 10, 2021, <https://www.businessofapps.com/data/zoom-statistics/>

⁵⁶Sarah Fischer, The pandemic sped the shift to digital media, Axios, Mar. 10, 2021, <https://www.axios.com/pandemic-sped-digital-media-shift-1e5ef4d7-8238-4c34-9971-41cf4b15f6e8.html>

⁵⁷Maryam Mohsin, 10 TikTok Statistics That You Need to Know in 2021, Oberlo, Feb. 16, 2021, <https://www.oberlo.com/blog/tiktok-statistics>

⁵⁸Cathy Hackl, The Metaverse Is Coming And It’s A Very Big Deal, Forbes, Jul. 5, 2020, <https://www.forbes.com/sites/cathyhackl/2020/07/05/the-metaverse-is-coming--its-a-very-big-deal/?sh=5e1ff2ac440f>

⁵⁹See, for example, <https://onetreepanted.org/>

⁶⁰Lucien Lecarme, Put a Tree on a Blockchain and Help Save the Planet — This is How, Medium, Apr. 3, 2020, <https://medium.com/spirit-of-crypto/how-trees-and-recycled-plastic-on-a-blockchain-is-making-the-difference-f5ae538d01b>

Consider the popularity of fantasy novels and games in today's world. From the Harry Potter book series to role-playing games like Dungeons and Dragons, fantasy maintains its position as one of the most popular genres among young people. In an effort to sell pieces of their virtual forest, and thus raise money to offset the carbon footprint of Blockchain interactions⁶¹, the creators of such a forest might include lore—historical, fantastical, or a combination—to create a brand-new experience that users can't find in the real world. Such an experience would be similar to reading a book or watching a film, but users would be an interactive piece in the story. As opposed to more traditional charitable sponsorship opportunities, such as buying an acre of woodland to offset a carbon footprint⁶², in the metaverse, the donor can remain engaged and visit their growing charitable investment.

This is only one example. For every action which is currently popular online, the metaverse offers a more immersive version. Assuming that the progression of digital interaction will follow such technological advancements, it becomes clear that the future of charitable endeavours relies on offering interactive experiences, rather than static funding appeals on social media pages. The Metaverse combines the best of both worlds: the reach of digital fundraising and the social contact that in-person fundraising offers.

4.3 NPACT – The Human Rights Village

At the Human Rights Village, or Nakatomi Plaza Arts and Cultural Trust, we are offering free space for charitable organizations to experiment with or maintain a presence in the DCL metaverse. This presence can range from links providing certain information to members of the organization interacting with users through an organizational avatar. Organizations, having designated space designed specifically for their cause, can utilize their digital zone for user interaction at any time. Interaction can take many forms, including but certainly not limited to:

- a Q & A style interactions, with the option to use a single avatar which can be controlled by any member of the organization, at any time and from any location
- b “AMA,” or “Ask Me Anything,” events, which are run by experts in the field⁶³
- c Livestream videos
- d Podcasting

⁶¹For more information on the carbon footprint of cryptocurrencies, as well as a discussion on actions being taken to offset it, see, for example, Justine Calma, Could a ‘Crypto Climate Accord’ erase cryptocurrencies’ carbon footprint? , The Verge, Apr. 8, 2021, <https://www.theverge.com/2021/4/8/22373524/cryptocurrency-climate-accord-bitcoin-carbon-footprint>

⁶²This is a common practice that can be undertaken by individuals and corporations. For more information on the concept, see, for example, Ryan Dezember, Preserving Trees Becomes Big Business, Driven by Emissions Rules, WSJ, Aug. 24, 2020, <https://www.wsj.com/articles/preserving-trees-becomes-big-business-driven-by-emissions-rules-11598202541>

⁶³H. Tankovska, Leading AMA (“Ask Me Anything”) posts on Reddit worldwide in 2020, by number of upvotes, Statista, Jan. 28, 2021, <https://www.statista.com/statistics/265818/top-amas-reddit-upvotes/#:~:text=This%20statistic%20shows%20the%20most,first%20with%20over%20102%2C000%20upvotes.>

- e Contests and giveaways
- f Digital donations
- g Digital charity shops
- h Links to newsletters, websites, social media, and other materials that already exist within an organization

The village allows organizations to combine the reach of internet fundraising with the personal aspect of in-person fundraising that is so often lost in the digital age ⁶⁴. DCL opportunities for outreach are not limited geographically or by time zone. Further, it offers reach to demographics which are not typically easy to connect with, including those who do not engage with social media ⁶⁵ and those who come from countries where certain media forms are blocked or inaccessible. Our Human Rights Village takes this approach a step further and offers a centralized place for decentralizing information. The traditional online presence of an organization requires that users find and interact with a site before information can spread. In our Village, we offer the opportunity to reach users who might come upon an organization's site because they've been attracted to the nearby arts scene, an event that is being put on, or because they are interested in one of the other organizations that is present in the Human Rights Village. This is more reminiscent of real-world shopping, using the model that fuels shopping malls and retail plazas ⁶⁶ and transporting it to the digital world.

Naturally, with new audiences come new donations, meaning Decentraland holds promising potential for fundraising within an organization. Additionally, unique opportunities exist due to the use of cryptocurrency and NFTs ⁶⁷.

The immediate goal of the Human Rights Village is offering organizations from across the globe increased opportunities for visibility within the metaverse, fundraising, and working with our experts establishing goals, planning events, and experimenting with all DCL offers.

4.4 Limitations within the Metaverse

While the possibilities within the metaverse are exciting, there are certain limitations that non-profits will face, including:

⁶⁴Wagisha Ja, A Guide to Different Types of Fundraising: Pros and Cons, DonorBox, Nov. 17, 2020, <https://donorbox.org/nonprofit-blog/different-types-of-fundraising/>

⁶⁵Sara Sparey, Fifth of people say they use social media less because they don't trust platforms. PR Week, Oct. 31, 2019, <https://www.prweek.com/article/1664220/fifth-people-say-use-social-media-less-dont-trust-platforms>

⁶⁶The Advantages of Opening a Store in a Busy Area, Chron, Nov. 17, 2020, <https://smallbusiness.chron.com/advantages-opening-store-busy-area-17611.html>

⁶⁷See, for example, Fundraising in the Age of Blockchain, CudoDonate, 16-19, available here: https://www.cudodonate.com/wp-content/uploads/sites/3/2018/06/CudoDonate_FundraisingInTheAgeofBlockchain.pdf

- a The need for artists, programmers, and engineers
- b Collaboration with artists in order to create and sell NFTs
- c Interaction through other media, such as online forums and popular streaming sites, in order to promote the presence of an organization and maximize exposure

Through the Human Rights Village, we can offer solutions to the above considerations, as well as:

- a Providing the assistance of artists ⁶⁸, programmers, and engineers to design your organization's kiosk
- b Collaboration with our team of artists to enable organizations to create and auction NFTs
- c Narration of video content
- d Non-stop radio broadcasting that can be utilized to promote specific events or simply raise awareness of an organization's cause

4.5 The Future of the Human Rights Village

The idea of a virtual space where a person can access information about their rights is novel. Users are only just beginning to experience DCL and experiment in the metaverse, and we want NGOs to benefit as early adopters. We envision a location in the metaverse where anyone can visit, explore, and engage. While we cannot remove all barriers to access, we can work to reduce them in several ways: first, access will not be barred by a paywall, and the village will exist in DCL, which is free for anyone to access. While use of the platform is open to anyone, digital passports can be required, allowing expulsion or non-entry of abusive parties. Second, we will intentionally partner with organizations who aim to reduce barriers to access in technology and internet, thus helping us to further this mission. Lastly, our Institute is dedicated to our mission to accommodate those with disabilities to offer the widest possible reach of our services to all interested users.

Within the Village, we continue creating cutting edge displays that attract the attention of DCL users and encourage people to visit the metaverse with the intention of visiting these interactive experiences. From NFT auctions ⁶⁹, to art installations ⁷⁰, to a Human Rights Museum, the Human Rights Village will continue to evolve, creating a dynamic community centre.

⁶⁸See <https://www.remography.com/>

⁶⁹For a more comprehensive understanding of how NFT auctions work, see, for example, Lindsay Howard, A complete guide to collecting NFTs and how auctions work, Foundation App, <https://help.foundation.app/en/articles/4742997-a-complete-guide-to-collecting-nfts-and-how-auctions-work#:~:text=Go%20to%20the%20artwork%20page,depending%20on%20which%20costs%20less>.

⁷⁰For those unfamiliar with installation art, this article may provide some further information: Bob Lansroth, What Is Installation Art and How Does It Transform Our Perception?, Widewalls, Oct. 19, 2016, <https://www.widewalls.ch/magazine/installation-art>.

5 | Individual Organizations

Individual organizations will have the opportunity to be featured in the Human Rights Village. This presence will allow an organization to fundraise passively, with donation buttons at their kiosks and calls to action for visitors who come across their information, either by chance or because they sought it out.

Organizations will also have the opportunity to participate in events planned by NPACT, as well as to plan their own. An example of an organization's location in the DCL metaverse can be seen here:



Due to the prime location of the Human Rights Village, passive donations⁷¹ are a likely eventuality for two primary reasons: first, NPACT is a cultural centre within the metaverse, and the venue for many community events. Second, the Human Rights Village is a novel concept that will garner attention from regular users of DCL as well as visitors who use the platform for the specific purpose of visiting the village⁷².

5.1 Automated Options

As automation is an overarching principle of both DCL and blockchain technology more broadly, organizations within the Village will have the benefit of a constant presence that does not require ongoing interaction. Similar to a website or social media page, content will be available continuously and donations will be accepted at any time. All of the advantages of current digital fundraising will remain intact, with the added value of an interactive location which is more reminiscent of those in the physical world⁷³. Potential donors and beneficiaries will not have to choose one or the other and can instead enjoy an organization's presence within the metaverse regardless of whether a representative is available at a given time.



5.2 Payment

Users will be able to make donations to an organization in several ways. First, and most commonly, will be the use of cryptocurrency, which can be deposited into the organization's wallet⁷⁴. While this is the method which will allow organizations to benefit most from

⁷¹For an explanation of passive fundraising, see, for example, Carrie Cousins, How to Make a Passive Fundraising Ask, Give WP, Oct. 30, 2020, <https://givewp.com/how-to-make-a-passive-fundraising-ask/#:~:text=Passive%20fundraising%20involves%20any%20activities,add%20up%20considerably%20over%20time.>

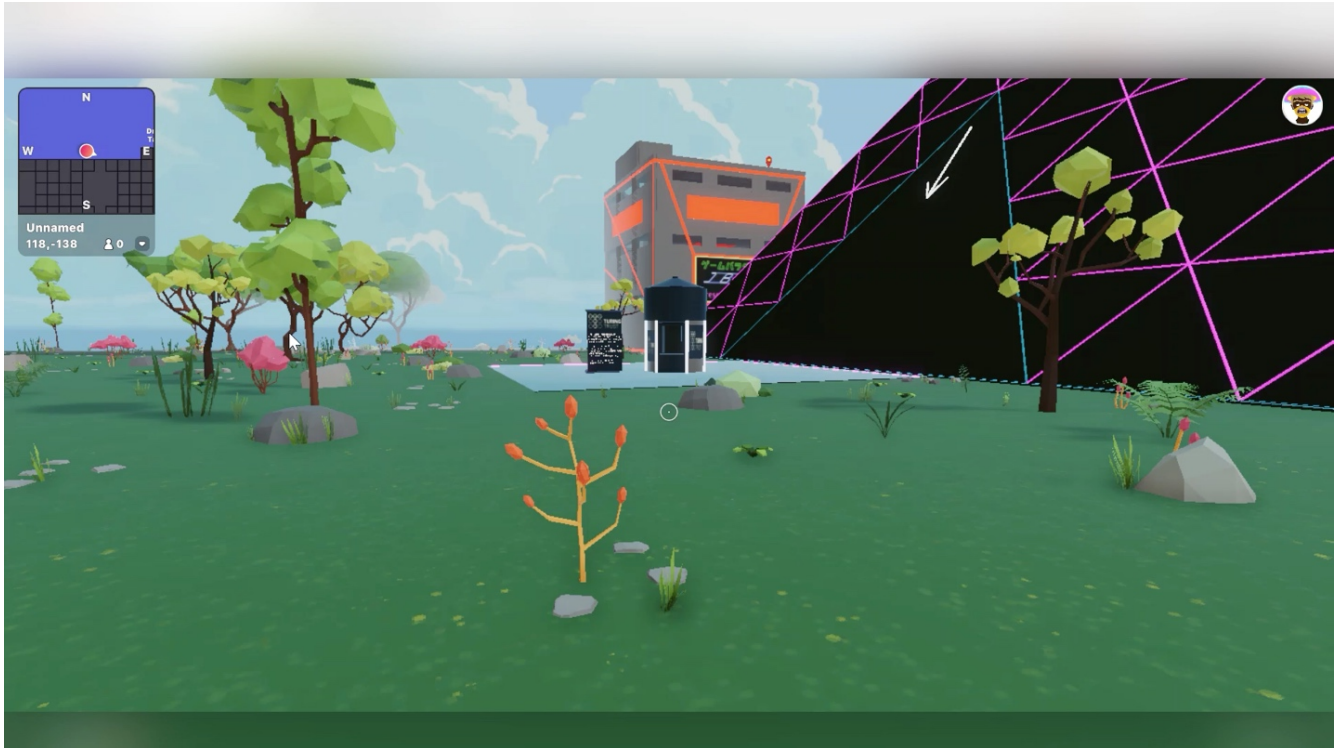
⁷²For an example of this, see this article about the Travis Scott concert in Fortnite, which drew active gamers and fans of Scott: Andrew Webster, Travis Scott's first Fortnite concert was surreal and spectacular, The Verge, Apr. 23, 2020, <https://www.theverge.com/2020/4/23/21233637/travis-scott-fortnite-concert-astronomical-live-report>

⁷³For a real-world example that combines the ease of digital payment with a physical location, see <https://www.southgatebath.com/giving-box>, presented in the photo above.

⁷⁴Subsection VI.a, and n78 in particular, offer further discussion on wallets.

their presence in the metaverse, there are other options, including links to payment sites such as PayPal ⁷⁵, or even buttons which take a user to an already existent donation page.

For an example of in-world donations see below:



5.3 Public engagement

Perhaps the most unique aspect of operating within Decentraland is the ability to engage demographics which are traditionally inaccessible or difficult to reach ⁷⁶. Decentraland also offers the opportunity to engage with users who are already aware of and interested in an NGO's operations.

This element of public engagement will be particularly beneficial to organizations that closely observe the demographics of DCL and use that information to form a kinship with users. Any organization that is willing to adapt to the growing interest of the DCL community is likely to find an engaged audience in the decentralized world.

⁷⁵www.paypal.com

⁷⁶While a significant number of Americans are social media users (see: <https://www.statista.com/statistics/273476/percentage-of-us-population-with-a-social-network-profile/#:~:text=How%20many%20people%20are%20on,reach%20in%20the%20previous%20year>), trends show that trust in social media is dwindling (People don't trust social media—that's a growing problem for businesses, CBS News, June 18, 2018, <https://www.cbsnews.com/news/edelman-survey-shows-low-trust-in-social-media/>)

We anticipate opportunities to expand the reach of an organization’s public engagement through mutual collaboration. At the start, public engagement will allow an organization to showcase its mission, its most impactful links and information, and its website and social media presence. As organizations gain the experience and confidence needed to be successful at fundraising in the metaverse, they will have the opportunity to work alongside NPACT and each other to explore innovative ideas that will serve to expand their reach and increase interest in their mission and message.

5.4 Available Tech for further expansion

The Institute has sought out and begun working with an impressive team of programmers, artists, and organizers whose expertise will be available to organizations as they begin to expand within the metaverse. Organizations that join the Human Rights Village will always retain the authority to reject ideas that don’t suit their goals or the current operating abilities of that organization. As non-profits and organizations join the Human Rights Village, we intend to facilitate cooperation between and among them.

While there is virtually no limit to what can be achieved in-world, the following are some occurrences which we anticipate coming to fruition:

- a In-world “office hours,” or times throughout the week during which a real-life representative can be found and interacted with in-world, answering questions that users might have
- b Events in-world which will benefit the organizations in the Human Rights Village either in whole or in part. Such events might be entirely planned and executed on behalf of an organization, or those within the Village might be invited to participate larger events, at which a presence would be beneficial. For examples of such events, consider concerts, art showings, movie premiers, and live recordings of podcasts and interviews.
- c In-world sale of merchandise that will allow users to receive a real-world shipment, should an organization have capacity to provide said real-world materials
- d Cooperation with the other organizations within the Human Rights Village, including events and activities in-world

5.5 Transparency

Transparency is a key tenant of charitable operations⁷⁷. It is also an area of concern for many donors. Decentraland utilizes smart contracts and the blockchain in order to process transactions, which allows for complete transparency, as well as protection against human error. Organizations that fundraise in the metaverse will have the option to display how money is spent, which will give all donors and potential donors a high level of transparency. Further, when donations are made in cryptocurrency, and an organization uses said cryptocurrency to fulfil a goal or need within its mission, the original donor will be able to track the progress of that initial donation. In the future, as cryptocurrency becomes more commonly used in transactions around the world, this will mean that a donor can track their donation from the start to finish: the moment that crypto is transferred to an organization's wallet to when that crypto is used to purchase actual items or aid.

This unprecedented level of transparency is one which is of particular interest to Decentraland users and will encourage further donations while simultaneously fostering a trust between donor and organization that is often difficult to achieve.

⁷⁷Importance of Transparency, The NonProfit Times, Jul. 14, 2014, https://www.thenonproffitimes.com/npt_articles/importance-transparency/#:~:text=That's%20why%20the%20transparency%20of%20your%20cross%2Dsector%20partnership%20is%20crucial.&text=Transparency%20means%20telling%20the%20truth,are%20being%20raised%20and%20disbursed.

6 | What is Needed from a Non-Profit?

6.0.1 Basic Requirements

Contact

Each organization will need a metaverse representative who will serve as the bridge between existing legacy content and the organization's presence in the metaverse. This person will need to be familiar with the basics of blockchain technology while also having the authority to make decisions on behalf of the organization. The use of images and materials will be imperative to the success of an organization's presence in the metaverse, and the representative should be able to make decisions on behalf of the organization without undue delay.

Information

When users attempt to interact with an organization, they will be presented with information which will likely be their first introduction to that organization's mission. As such, information should be provided that is concise while also appealing to the general demographics of DCL users. Links to already established sites, including websites and social media, will allow for further interaction.

Wallet Address

Each organization will be required to set up a wallet address to which donations can automatically be directed ⁷⁸. This will be held privately by the organization and will be the avenue through which funds are collected.

6.0.2 Requirements within the Human Rights Village

Input on construction

Organizations which choose to be a part of the Human Rights Village should expect ongoing growth. The individual kiosks of organizations will be updated to suit the goals of that organization: some might add stores, selling organizational items or new digital offerings in the form of NFTs. We also

⁷⁸A wallet address is completely confidential. At no point should anyone within an organization duplicate wallet information digitally. This means that they should not send information about it through email, they should not take or keep screenshots of the information, and they should not offer information on the wallet to anyone who requests said information online

have the capacity to offer an in-world shopping experience that will translate to real-world aid for the benefactors of an organization. Throughout the first year and beyond, we will work closely with organizations to ensure that their presence in the metaverse reflects their real-world brand and image. Bearing in mind that organizations which are involved in the Human Rights Village will be pioneers in a new form of interaction, we anticipate evolving needs, and we have the full capacity of our team ready and willing to meet those needs.

Partnership in Events

The ability to host events is one of the most enticing aspects of the metaverse, as demonstrated through the case study in Section III. The Human Rights Village is in a particularly advantageous location for such events. These could span the gamut from live concerts to poetry readings, movie screenings, interviews, podcast recordings, cooking tutorials, interactive games. Anything that draws a crowd in real life or on the internet can be duplicated in the metaverse, often at a fraction of the cost of real-world events and significantly higher quality of interaction than traditional online events.

We intend to incorporate our NGO partners as benefactors in all things accomplished by our team, and we may require partnership, particularly if an event is uniquely suitable to the mission of one of the organizations within the Human Rights Village. We hope to make contact within our NGOs with someone who is ready and willing to take on these dynamic roles.

Involvement

The Human Rights Village will act as a digital incubator—a test site where non-profit organizations can experiment with the metaverse and determine whether fundraising through a decentralized digital platform is right for it and its needs.

Those organizations which are particularly successful may wish to branch out, purchase LAND for themselves, and continue their journey independently. Such a move will not be required but will be encouraged and assisted should it come to fruition. As additional NGOs join the metaverse, those which have been successful will be encouraged to offer support through voluntary donations to the foundation, collaboration on events and projects, and any other means that seem appropriate to the organization.

At present, the incubator period will be no less than a year, with the option to extend beyond that for any organization which remains engaged in the metaverse. Failure to engage and maintain a presence within the Village will not be beneficial to an individual organization or to the growth of the community as a whole, and those who do not benefit from a presence in the metaverse will terminate their partnership with the Village at the end of the first year, in order to make space for other organizations who wish to engage and experiment within the metaverse.

7 | Conclusion

This is a baseline study meant to provide general information for those wishing to pioneer in the metaverse. Using DCL as a model, we have identified ways that the platform promises to grow, and how that growth can be used to carve space for NGOs and non-profits while serving to maximize exposure, allow for the dissemination of information, and support fundraising through brand new media.

Contact our institute for more information at: info@npact-village.com
or find out more at npact-village.com

8 | Rights of The Child Summary

Written by Avery Lins

Does the chance to go shopping, attend a live concert, or have a pizza delivered to your house without even leaving your gaming chair appeal to you? If yes, welcome to the Metaverse. The Metaverse is an interactive on line world, is always open and is experienced live and in real time. A version of augmented reality where a video game and the real world are one.

Decentraland is the name of the social gathering point of the Metaverse. Just like the real world it has places to go and visit, shops to look for clothes or other cool things and fun things to do! To get around Decentraland you create your own avatar, dress it how you like and do things that you want to do. You get to create your on line personality and be yourself.

Instead of using the currency of where you live, you use a cryptocurrency called Mana. Think of a cryptocurrency as computer money you use to do and buy things. There are many kinds of cryptocurrency you may have heard of such as Bitcoin or Ethereum for example.

How does this all this work? There is a computer technology called Blockchain where different computers talk to each other behind the scenes and no one computer is actually in charge! This actually works well and is the technology of the future.

Good things can be done in the Metaverse. You can raise money for charities and non profit organizations through concerts and other activities in Decentraland to help real people who need help. There is even a place in Decentraland called the Humans Rights Village for charitable organizations to help people around the world.

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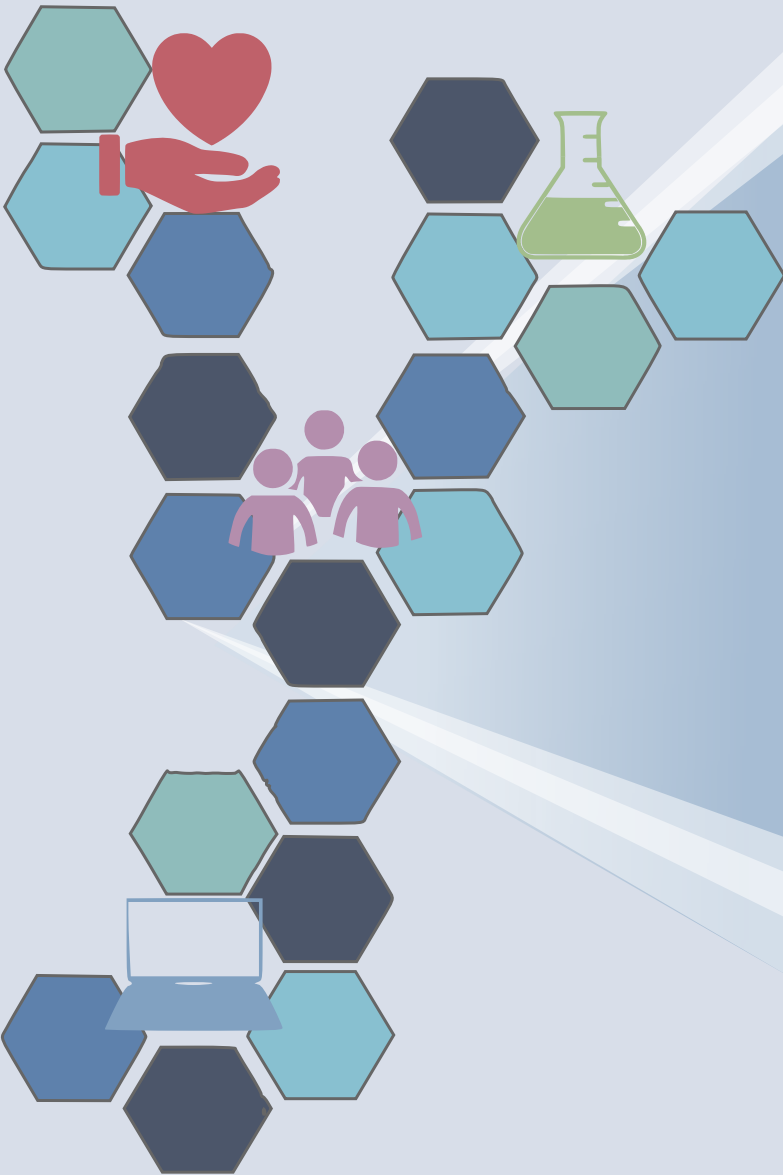
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CHARITABLE ORGANIZATIONS AND THE DECENTRALIZED DIGITAL ECONOMY



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