

## **Web3.0 Metaverse Business Model Innovation of Sports Media**

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### **Abstract**

*We study three sports media start-ups that seek to promote business model innovation (BMI) in which Web 3.0 and metaverse are converged. In results, LM starts from an innovative digital space platform offering a unique combination of virtual real estate, games, and non-fungible tokens (NFTs) which come with real-world earning potential. It creates value by integrating virtual real estate, training academies, blockchain games, and meta shops to offer a unique experience, capture value by offering monetization tools for buying and trading limited edition NFTs of favorite influencers from various sports leagues, offering access to premier real-world events and VIP game contests, and delivers value by building community to play games with favorite athletes or teams including trivia games, allowing fans to engage with their favorite athletes in a unique exclusive way. SL starts from the customizable digital identities especially for young sports fans like generation (gen) Z to play, hang out, and express themselves with their own avatars. SI starts from a leading Web3.0 metaverse innovator creating NFTs with the greatest athletes of all time, allowing athletes and creators to set up a profile and mint NFTs directly onto the blockchain. It tries to have the partnerships with great athletes revolutionizing the sports media industry to connect sports heroes and their super fans through an immersive, artistic, inspirational NFTs and unlockable content creating a sticky community between them.*

**Keywords:** *Web3.0, Metaverse, Convergence, Business Model Innovation (BMI), Sports Media.*

### **1. Introduction**

The metaverse started to offer means of communication accessed via immersive or spatial human-computer interaction like immersive community platforms, experiential retail, immersive education, virtual goods, multiplayer location-based games, and online collaboration and content creation tools. But the real progress will come when the metaverse converges with Web3.0 including blockchain, smart contracts, and tokens. The metaverse-Web3.0 convergence is expected to change how ownership, transactions, online communities, and businesses operate [1]. The metaverse is a virtual world and Web3.0 promotes decentralization of network and online space, enables tokenization of real assets, and enables users to take security and personal information to new levels. With digital transactions becoming commonplace, tangible assets like real estate digitalized through tokenization, and a new sense of community, the convergence of AI based Web3.0 and the metaverse

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offer endless opportunities to individuals [2].

The advancements of the metaverse are expected to validate a new possibility with Web2.0 and Web3.0 technologies that are increasingly immersive, interconnected, spatial and decentralized. In combination with interoperable and interconnected avatars, the metaverse can evolve beyond physical experiences and asset architecting into financial experiences and asset trading. So, this paper is interested in the intersections between the metaverse and Web3.0 and conducts a literature review of the metaverse-Web3.0 convergence and the theoretical logic of the value delivery. Then, the use cases of metaverse platforms intersecting with Web3.0 will be investigated.

## 2. Literature Review and Theoretical Background

### 2.1 Previous Literature Review

Table 1 displays the academic papers regarding the keyword ‘Metaverse-Web3.0 convergence from 2021 to 2024’ in Google Scholar Search, because the metaverse entered its consciousness when Facebook changed its name to Meta in 2021, even if the term ‘metaverse’ was invented and first appeared in Neal Stevenson’s science fiction novel, ‘Snow Crash’ published in 1992 [3-5].

**Table 1. Summary of previous research results**

Year	Authors	Key points
Nov. 2022	S. Periyasami and A.P. Periyasamy	- Metaverse-based platforms engages customers with ‘phygital’ options, integrates eCommerce option and enhances sustainability by reducing waste.
Oct. 2023	A. Abilkaiyrkyzy, A. Elhagry, F. Laamarti and A. E. Saddik	- Key requirements for metaverse platforms are interoperability, immersiveness, persistence, multimodal and social interaction, scalability, level of openness, configurability, market access, security, and blockchain integration and the existing platforms must establish fair, trustworthy, and interactive experiences.
Dec. 2023	H. Chen, H. Duan, M. Abdallah, Y. Zhu, Y. Wen, A.E. Saddik, and W.	- The potential for establishing decentralized identities (DID), domain name non-fungible tokens (NFTs), and soul-bound tokens (SBTs) are discussed and land, utility, and equipment NFTs are examined, and interoperable and full on-chain solutions for existing centralized Web2.0 platforms are emphasized.
2024	J. Davies, H. Sharifi, A. Lyons, R. Forster, and O.K.S.M. Elsayed	- ‘Mint-to-Order’ production strategy starting with minting of an NFT is proposed based on the findings and the use of NFTs has significant implications for digital and physical offerings and sustainable supply chain management (SSCM) practice making a compelling case for adoption.

The paper in 2022 discussed the metaverse’s influence in the existing business models of the fashion and retail industry. The metaverse-based platforms provide the business to sell, ship, and collect payments very easily and securely, engages the customers with so-called ‘phygital’ options, integrates the e-commerce sectors, and enhances sustainability by reducing waste, as it is resulting in the reduction of the carbon footprint [6].

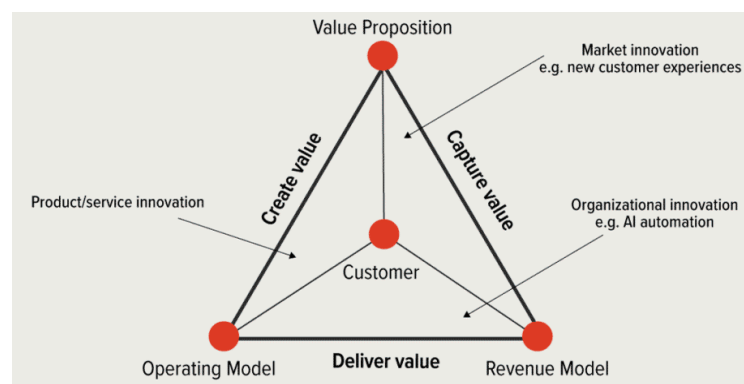
In 2023, the first paper’s objective is two-fold. First, for providing an objective analysis of requirements fulfilled by metaverse platforms, some criteria are surveyed, and the key requirements are interoperability, immersion, persistence, multimodal and social interaction, scalability, level of openness, configurability,

market access, security, and blockchain integration, among others. Second, existing metaverse platforms are reviewed and they must establish fair, trustworthy, and interactive experiences [7]. The second paper in 2023 aims to provide a comprehensive overview of the Web3.0 metaverse from a human-centered perspective. After reviewing the history and definition of the metaverse, an analysis framework from the community, society, and human layers was conducted. Then, the state-of-the-art of the Web3.0 metaverse from a human-centered perspective has been surveyed and supplementary technical reviews have been added. After this systematic, interdisciplinary survey on the Web3.0 metaverse, the researchers discussed the potential for establishing decentralized identities (DID) utilizing mechanisms like as profile picture non-fungible tokens (PFP NFTs), domain name NFTs, and soul-bound tokens (SBTs). Finally, they examined land, utility, and equipment NFTs within the Web3.0 metaverse, highlighting interoperable and full on-chain solutions for existing centralized Web2.0 platforms [8].

The paper in 2024 explored the potential of ‘phygital (physical+digital) products’ for linking NFTs to physical goods and proposed that NFTs can incentivize supply chain stakeholders to engage in more sustainable practices, enhance customer willingness to pay for sustainable products, provide anti-counterfeit measures, and support circular business model growth. Lastly, a sustainable ‘Mint-to-Order’ production strategy starting with the creation (minting) of an NFT is proposed based on a synthesis of the findings. The use of NFTs has significant implications for both digital and physical product offerings and sustainable supply chain management (SSCM) practice making a compelling case for adoption [9].

## 2.2 Theoretical Background

Business model innovation (BMI) is the art of enhancing advantage and value creation by making simultaneous and mutually supportive changes both to an organization’s value proposition to customers and to its underlying operating model. At the value proposition level, these changes can address the choice of target segment, product or service offering, and revenue model. At the operating model level, the focus is on how to drive profitability, competitive advantage, and value creation through these decisions on how to deliver the value proposition: Where to play along the value chain, what cost model is needed to ensure attractive returns, and what organizational structure and capabilities are essential to success [10]. BMI is the reinventing process for more effectively competing. As shown in Figure 1, it is the process how a company creates products and services, then delivers these to the market for generating revenues and profit. At the center of BMI is the need to create new products, services, or organizational models for improving the value proposition. There are some ways for the BMI: Transform capabilities and resources, transform distribution and marketing (customer experience) and the revenue model [11, 12].



**Figure 1. Business model innovation process**

The triangle BMI model has following four components for value creation, delivering, and capture: Customer, value proposition (VP), operating model (OM), and revenue model (RM). The line between VP and OM is creating the value by running competitive business. The line between RM and OM is delivering the value where the OM sends created value to the revenue mode. Lastly, the line between VP and RM is capturing the value where VP differentiates the business being profitable.

### **3. Research Design**

Here are some representative industries using the metaverse-Web3.0 convergence, Web3.0 metaverse for short: Entertainment & media including gaming, real estate, education & training, retail, and healthcare Industry [13]. The business model of Web3.0 metaverse can be realized by building decentralized services, adopting generative artificial intelligence (AI) to assist in metaverse-related content production, adopting technologies like Internet of things (IoTs) to connect data from the physical world with immersive interfaces, bypassing traditional payment solutions for direct sales via cryptocurrencies, adopting smart contracts and tokens to manage assets, and launching a decentralized autonomous organization (DAO) which operates with consensus mechanisms in line with the Web3.0 principle [14].

There are four economic principles that make up the metaverse: Digital spaces as marketplaces, digital identities as economic actors, NFTs as ownership certificates, and cryptocurrencies as payment methods. The benefits of digital spaces are a higher level of engagement and immersion through the interactive 3D environment. Digital identities differ from regular identity proofs, in that they allow multiplicity which means that a single person can have multiple digital identities. In the business context, NFTs are used to protect all sorts of digital items including brand names, logos, music, and registered colors. Cryptocurrencies offer several advantages including direct transactions between actors without the need for intermediaries, as well as the prevention of double spending by ensuring that multiple digital identities cannot make parallel transactions. The business model logic of a Web3.0 technology-powered metaverse is based on the partial removal of intermediaries and the associated efficiency gains, the realization of network effects, and the interoperability of technology standards. There are three basic ways to define the business models which comprise the “design or architecture of the value creation, delivery, and capture mechanisms” of a company. The value creation is the way how the company helps customers to solve a problem or perform a job-to-be-done at a given price, referring to as value proposition. The value capture is the way how the company makes money by means of a given revenue model and a given cost structure. In the value delivery, the key resources, activities, and partners are needed for the company to carry out what the value proposition requires [15-17].

As shown in the left side of the Figure 2, three of four metaverse principles can be matched to the Web3.0 BMI opportunities of three decentralized ways of the value creation, capture, and delivery because the cryptocurrencies are related other three principles. For example, when combined with digital identities, cryptocurrencies make transactions secure, transparent, and store immutable proof of payment for future reference. Cryptocurrencies can also transform traditional currency exchange, as there are no boundaries between physical and digital spaces that can accept different currencies [18].

Three decentralized ways of the value creation, capture, and delivery are related to three components to Web3.0, ownership, aligned incentives, and community respectively. The ownership of digital assets become like physical assets in Web3.0. These can be taken wherever their owners go and transfer these assets to others at any time. Web3.0 supports tighter aligned incentives between brands and consumers through the ownership

of digital assets. Consumers can be partners of the brands, and owners as well. An influencer can choose to promote a brand or product on platforms because of incentives extending beyond money. The community is an entirely separate entity from ownership and aligned incentives, but the three components are deeply intertwined. Incentives created through tokenization produce a potentially more valuable community. Businesses may have an opportunity to achieve a new class of super-loyalty. Collaborative communities can generate second creative content like videos, photos and online posts aiding marketers and creators. The most important value is that the members can increase their transactions in the physical world [19].

This study focuses on the Web3.0 metaverse in sports sector of the entertainment and media industry. Web3.0 sports landscape is divided into several segments like moments, trading cards & games, metaverse experience, fan & athlete tokens, wearable & fan gear, and e-sports. Among them, metaverse experiences shows the conventional Web3.0 native metaverse spaces like Decentraland, Somnium Space, and The Sandbox. In terms of digital spaces, digital identities, and NFTs, the representative start-ups are LootMogul (LM), StadiumLive (SL), and SportsIcon (SI) respectively. Therefore, these startups are selected as the research targets, as shown in the right side of the Figure 2 [20, 21].

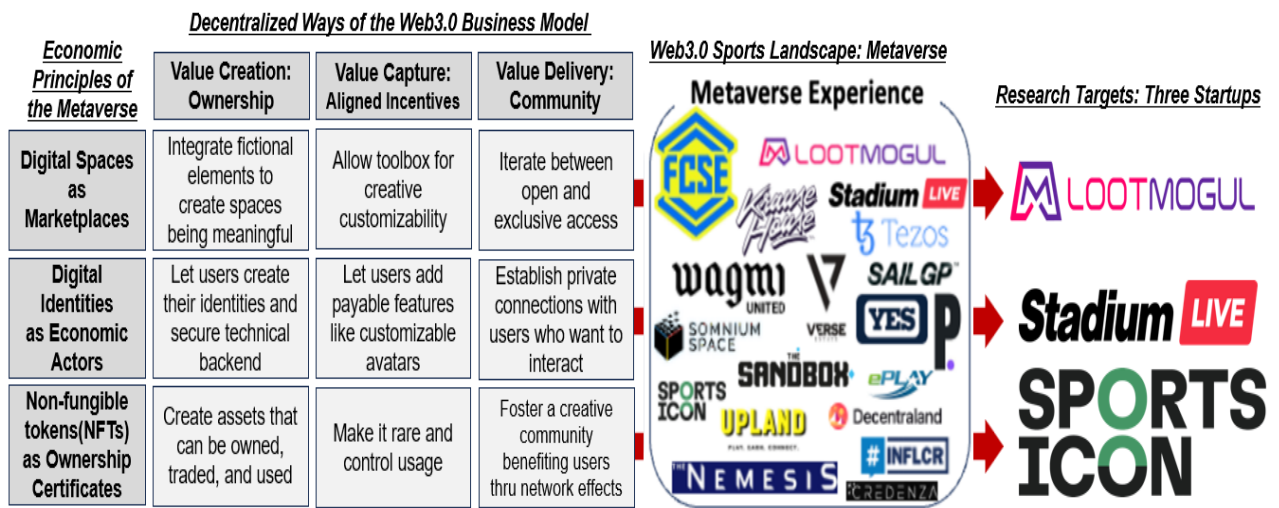


Figure 2. Research framework

Sports brands are entering the metaverse with Web3.0 experiences like digital spaces, digital identities, and NFTs. These services deepen community involvement in sports by providing a way for fans to connect with athletes and each other. Along Figure 2, the research questions are as follows:

- 1) How does LM conduct its BMI in terms of value creation, capture, and delivery under the economic principle of the metaverse, “digital spaces”?
- 2) How does SL conduct its BMI in terms of value creation, capture, and delivery under the economic principle of the metaverse, “digital identities”?
- 3) How does SI conduct its BMI in terms of value creation, capture, and delivery under the economic principle of the metaverse, “NFTs”?

For this study, recent business activities of three sports startups are searched by digging related financial, market data, company documents and press releases.

## 4. Results

### 4.1 LootMogul's Web3.0 Metaverse BMI with "Digital Spaces"

For creating digital spaces being valuable to all participants, it is important to make the metaverse as a distributed system with many virtual spaces and to enhance immersion and interactivity by integrating fictional elements [15]. An American startup, LM founded in 2020, is a player-centric sports technology platform based on generative AI, multiplayer blockchain mini-games, e-commerce shops for brands and players, virtual real estate, training academies, and digital collections in the real world. In terms of the value creation, LM positions as a Web3.0 sports metaverse platform led by athletes. It is a global sports metaverse place for athletes, brands, and fans connecting with their idol athletes and brands they love, both in the virtual and the real world [22].

In terms of the value creation, LM focuses on creating the open dynamics by integrating virtual elements to digital spaces that are meaningful to participants. The elements powering these digital spaces are virtual real estate, training academies, and meta shops for brands and athletes. These virtual properties come with real-world utilities and earning potentials. LM is designed for sports ambassadors and influencers who can create their merchandise shops, entertainment islands, training academies, or gaming contests. In case of the virtual real estate, for instance, a professional basketball player, Alex Bentley purchased advertising spaces and seats within LM metaverse in the form of NFTs coming with functional utilities and in-real life benefits in June 2022. NFTs are openly tradeable on OpenSea, one of the NFT marketplace. Owners of the advertisement (ads) spaces can promote their brand, customize their seats using images and avatar, connect with their favorite sports influencer, play play-to-earn (P2E) games, earn real-life rewards, get access to physical live events, stores, offers and future drops, and earn revenue from brand sponsorship. Another example is the case of naming right deal with Hoop Culture, a basketball lifestyle brand in September 2022. LM allowed Hoop Culture to acquire the naming rights for 'Metaverse Arena' in Orlando. This deal includes an agreement for Hoop Culture to place five retail, experiential stores in five Arenas within the LM Metaverse [23-25].

The value of digital spaces must be captured by allowing aligned incentives. In terms of the value capture, LM focuses on allowing the creative customizability among relevant users by monetization in the shared spaces. LM offers an immersive platform for buying and trading limited edition NFTs of favorite influencers from different sports leagues like the NBA, WNBA, NFL, MLB, MLS, NHL, ICC, MMA, and so on. With NFTs, consumers can access to premier real-world events and VIP game contests [23].

People can monetize by playing games, collecting real-world assets, digital collectables and trading the digital assets. LM is a gaming platform for sports influencers and fans to engage using popular games to earn crypto, cash and NFTs. LM selected DigitalBits as the first blockchain for creating the native utility token and in-game currency in August 2022. MOGUL tokens can be used for creating land, wearables, collectibles, game power items, participating in contests, exclusive NFTs, VIP events and premieres, experiencing meet and greets, DAO voting, royalties and nominations. DigitalBits blockchain is fully open-sourced and designed for enterprise scalability needs with the capacity to process up to 10,000 transactions per second. DigitalBits Foundation and LM are expected to collaborate to build further applications and functionality for sports influencers and fans to engage and bring the athletes ambassadors of LM [26].

One of the exciting platform features is to iterate between open and exclusive access to favorite athletes or teams. People can earn cash, tokens, or NFTs by participating in these teams [23]. In terms of the value delivery, LM focuses on repeating the open and exclusive community by partnering with sports player, influencer, marketer, and fans [27]. As of June 2022, LM partnered with more than 184 professional athletes from NBA, NFL, MLB, eSports etc. and 1.5million high-school and college athletes. Any participants can own or lease

NFT stadiums, seats, banners, celebrity avatars, game power, wearables etc. for their community and organize special events during NBA all-star weekend, NFL Superbowl, World Championship etc. with real world sports celebrities [24].

LM has expanded to Europe in January 2023 through a strategic partnership with SixSport, a leading global sports rights and marketing agency. SixSport specializes in the acquisition, commercialization, and distribution of sports rights and works with some of the biggest names in sports, including EFL, FIFA, UEFA, W2C, Rugby Football League, Premier League and so on. This partnership can create immersive and exclusively interactive experiences for fans, including virtual events, virtual merchandise, and virtual ticketing options which allow fans to engage with their favorite sports, beyond just watching games or reading news articles [28].

LM's Web3.0 metaverse BMI with "digital spaces" is summarized in Table 1. It creates value by integrating virtual real estate, training academies, blockchain games, and meta shops to offer a unique experience, capture value by offering monetization tools for buying and trading limited edition NFTs of favorite influencers from various sports leagues, offering access to premier real-world events and VIP game contests, and delivered value by building community to play games with favorite athletes or teams including trivia games, allowing fans to engage with their favorite athletes in a unique exclusive way.

**Table 1. LootMogul's Web3.0 metaverse BMI with "digital spaces"**

Ways of BMI	Key Characteristics
<b>Value creation (Ownership)</b>	- Creating open dynamics by integrating virtual elements to digital spaces being meaningful
<b>Value capture (Aligned Incentives)</b>	Ex) Alex Bentley purchased advertising spaces and seats in the form of NFTs in Jun. 2022
<b>Value delivery (Community)</b>	- Allowing creative customizability by monetizing in the shared digital spaces Ex) DigitalBits was selected for creating the utility token and in-game currency in Aug. 2022
	- Repeating open & exclusive community by partnering with player, influencer, and marketer Ex) Six Sport as marketing agency was selected as European strategic partner in Jan. 2023

#### 4.2 StadiumLive's Web3.0 Metaverse BMI with "Digital Identities"

In the landscape of 'digital identity' which has been categorized in virtual worlds, avatars, PFP NFT collections, digital identity infrastructure, and digital fashion in 2022, avatars play an important role. While many companies focus on the virtual representation of one's real-world features with human-like avatars, other innovators are moving towards borderless avatars that open creative freedom to enable new perspectives on self-expression, diversity, and interaction possibilities. Digital fashion currently offers a way to enable self-expression in the virtual world [29].

The digital identity in sports sector is deeply related to the avatars, where it is crucial to offer security and reliability. The good option for individuals who want to have greater control over their data is to store digital identities in a decentralized manner like via a blockchain network, where personal data is secured and shared selectively [15]. As traditional sports viewership declines among generation (gen) Z, social media and streaming platforms are becoming the favorite destination for young sports fans. A Canadian startup, SL, founded in 2020 with the goal of gamifying the sports fandom and building a digital playground of sorts for

Gen Z sports fans. SL is a sports community platform allowing users from the age of 12 years old firstly to customize their own avatar, to buy digital collectibles, to gain experience points (XPs) by drafting teams during live matches and sports streams, to create a squad with friends, to join daily livestreams, polls, trivia, and to chat with like-minded players. As of July 2022, SL collected over 500,000 users to date and during NBA season and it grew an average of 30% month over month for the duration of the season from October 2021 to April 2022. Active users spend about 35 minutes per day on the application (app), whether that's being part of the match, watching streams or interacting with their friends [30].

In terms of the value creation, SL focuses on providing with digital avatars on the free app and developed a prediction and micro betting app for sports and eSports fans in Google Play and Apple Appstore. SL firstly allows users to create an avatar, then to play games with friends, and unlock items. As a sports fan, users download the app and create their own avatar, digital identity on SL platform. The avatar interacts and consumes sports with the community members. SL users can pick and predict if the team will win, if a player will go off on the app. Based on their performances, users get coins and XPs. It's an interactive gameplay on top of the experience. Players have 'Squads' getting ranked weekly by XPs in a top ten list. In daily lives, players can keep playing the games, get coins, use those coins and XPs to level up, and buy avatar items and so on. Those activities are SL's core value proposition [30, 31].

The demand for avatars in virtual worlds is evident and the virtual world experiences have room for monetization in terms of creator incentives, in-app currencies, and collectible digital items. Web3.0 avatar markets began to emerge with many avatars existing as NFTs owned by users and paying royalties to creators [32]. In terms of the value capture, SL focuses on allowing payable features like customizable avatar. One thing that set SL apart from the other sports apps is in the amount of customization possibilities. Users have a great amount of customization options. They can also purchase items from the shop by using the coins that they as players earn from the matches. They can also add their favorite songs to their profile, so someone can always go to the profile and listen to it. On their profile, they can also view all the games they have played as well as their overall statistics, achievements, and teams they enjoy [33].

From July 2022, SL started to have 'Rooms,' a feature allowing fans to create a unique room with avatar items. Some of the items are interactive, like a speaker that plays music. There are embedded TikTok videos, sports highlights and more. SL also tries to allow users to create utility within the room, such as hosting their own events, trivia and watch parties. The players can earn coins by attending sports streams held by SL team or in real life and gain the XPs through the sports streams. With a certain amount, they can level up and gain roles which range from Drafted and Rookie to Sophomore, Role Player, All-Star, Superstar, most valuable player (MVP), Legend and greatest of all time (GOAT) [30, 34].

SL provides new sports fans with mobile app of expressing their fandom and this app is looking to grow its community of users. So, SL wants to create a kind of clubs, or micro-communities around certain sports and culture-related topics, and eventually to be "the spatial version of Discord" [35]. In terms of the value delivery, SL focuses on establishing micro-communities by tailoring offers to customer groups that matter, for expanding into more subcommunity, more leagues and other verticals such as fashion. So, SL allows the users to create rooms together about a certain topic that they are into, and they have club owners that drop questions or trivia or threads. It means, within SL community, there are subcommunities.

There are partnerships with leagues and other verticals. It partnered with Fan Controlled Football (FCF) in July 2022, an alternative football league where fans vote on real-time decisions for their teams. SL plays a key role in enhancing the ways the league engages with its gen Z fans digitally. With this partnership, SL app can



stream FCF's live matches, drops questions for fans and has a room for the league that's decked out with FCF items like jerseys and trophies [30]. In March 2023, SL partnered with Roots, a global clothing and lifestyle brand for delivering a collection of unique digital branded experiences for users. SL users can have access to exclusive Roots branded activations throughout the platform. The partnership shows a digital apparel and accessories collection launching in the 'Stadium Live Roots' store, as well as physical apparel inspired by the digital-first collection. The aim of this partnership is to provide gen Z users with a unique way to interact and engage with the Roots brand. SL platform ensures a seamless experience from physical to digital, allowing Roots to extend their brand exposure beyond the physical and explore new ways of engaging with digital customers in a virtual setting. During the partnership, SL had over 750,000 registered gen Z users across North America. Users participate in sports-focused gameplay and live streams, collect unique items and prizes, chat and make friends with other fans, and customize their in-game avatar [31, 36].

SL's Web3.0 metaverse BMI with "digital identities" is summarized in Table 2. It revolutionizes the sports industry by building the digital playground for millions of next generation sports fans like gen Z to play, hang out, and express themselves with their own avatars. It serves as a one-stop shop for sports fans looking to express themselves as avatar in a unique way, meet communities of like-minded fans, and compete for prizes.

**Table 2. StadiumLive's Web3.0 metaverse BMI with "digital identities"**

Ways of BMI	Key Characteristics
<b>Value creation (Ownership)</b>	<ul style="list-style-type: none"> <li>- Providing users with digital avatar on the free apps where players can play sports game, get coins, use those coins &amp; XP to level up, and buy avatar items and so on</li> <li>Ex) During the last week of July 2022, "Immortal" was the top squad with 596.54k XP.</li> <li>- Allowing payable features like customizable avatar from the socks to the hat</li> <li>Ex) A feature "Rooms" allows fans to create a unique room with avatar items from July 2022</li> <li>- Establishing micro-communities by tailoring offers to customer groups that matter</li> <li>Ex) With the partnership with FCF in July 2022, FCF's live matches are streamed for fans.</li> </ul>
<b>Value capture (Aligned Incentives)</b>	
<b>Value delivery (Community)</b>	

#### 4.3 SportsIcon's Web3.0 Metaverse BMI with "NFTs"

The ownership moves to NFTs, the digital equivalent of ownership titles in the physical world and these register the identifier of the associated item in a digital ledger, providing a publicly verifiable proof of ownership or certificate of authenticity. When an NFT-protected item is transferred, the digital ledger is automatically updated to provide a complete and continuous record of the item's transaction history. So, through these, ownership of digital items can be transferred seamlessly, securely, and at much lower costs compared to notary services [15]. British SI founded in 2020, is an innovative NFT platform built on Flow, the highly scalable blockchain with low transaction fees behind NBA Top Shot engineered by Dapper Labs [37].

In terms of the value creation, SI focuses on providing users with the opportunity to get into NFT drops, to collect the journeys of the famous sportspeople and to unlock in-real-life experiences with next level NFT utility with direct collaboration with athletes. The value proposition for this is to create something that is not only unique, but also high-quality. The exclusive cinematic quality footage is split into two filming days. The first part is interviews about their journey and their past, while on the second day athletes are filmed on the training field. SI issues sports-focused NFTs with direct collaboration with athletes which involves the creation

of 27 NFTs for each artist featured divided into nine chapters with increasing rarity as the athlete journey progresses. SI films each episode with top cinematic quality focusing on the highs, lows, and motivation behind featured athletes’ careers and showcases the athletes’ physical skills in their sports. SI provides a unique ecosystem for teams, athletes, and sporting organizations to curate their drops and sell within its dedicated NFT marketplace. The first opportunity for fans to interact with their idols is SI Lions Club [37, 38].

NFTs allow the athletes to create configurable worlds being digitally secured. The fans of sports hero want to own a piece of their hero’s story and monetize it. In terms of the value capture, SI focuses on ensuring rarity by restricting availability. After creating 27 NFTs in collaboration with the athletes and sporting brands to commemorate specific, historical moments in their sporting careers, each NFT art can be auctioned off, and NFT collectors can purchase them from \$10 to \$999. Some NFT packs include real-world prizes like signed memorabilia or box seats at a game. SI has made significant milestones. SI Lions Club is an innovative project designed to bring more fans into the online sporting community with real utility like tickets for soccer games, NBA, NFL and so on. SI Lions Club members can gain additional values like access to exclusive webinars with star athletes and tickets to real-world sporting events. Consumers purchasing Lions belong to the club and it comes with exclusive values like Zoom chats with sports people, access to VIP sporting events, a private discord community channel, and so on. SI Lion Club members were joined by NBA star, Baron Davis for an exclusive webinar and a Q&A session on October 28, 2021 [38, 39].

In terms of the value delivery, SI focuses on delivering immediate added value with personalization options by partnering. It connects fans and superfans to their sporting heroes with bespoke cinematic footage delivered by NFTs. Along with NFTs, SI can develop a more participative environment for NFT holders and athletes. SI partners with great athletes revolutionizing the sports industry. So, the first project, SI Lion Club is very successful by connecting the greatest sports people and fans of all time. Among several collaboration, SI partnered with Professional Fighters League (PFL), American mixed Martial Arts (MMA) league founded in 2017 to create PFL MMA metaverse in November 2022. This collaboration is an extension of the world’s number 2 MMA league into Web3.0 metaverse and allows it to engage with fans in immersive ways [40].

SI’s Web3.0 metaverse BMI with “NFTs” is summarized in Table 3. It is packed with rewarding features as NFTs to synergize the interaction between sports heroes and their fans. It connects heroes and their fans through an immersive NFTs and unlockable content creating a sticky community between them. For this, it tries to have the partnerships with great athletes revolutionizing the sports media industry.

**Table 3. SportsIcon’s Web3.0 metaverse BMI with “NFTs”**

Ways of BMI	Key Characteristics
<b>Value creation (Ownership)</b>	- Providing users with opportunity to get into NFTs Ex) One of the opportunities for fans to meet and interact with their idols is “SI Lion Club.”
<b>Value capture (Aligned Incentives)</b>	- Ensuring rarity by restricting availability Ex) Consumers purchasing a Lion belong to the club and it comes with exclusive values.
<b>Value delivery (Community)</b>	- Delivering immediate added value with personalization options by partnering Ex) Collaboration with PFL, MMA league into Web3.0 metaverse allows new immersive ways.

## 5. Conclusion

We have shown that three of the four economic principles of the metaverse, “digital spaces as marketplace,” “digital identities as economic actors,” and “NFTs as ownership certificates” are well mapped to the way the Web3.0 metaverse business model creates, acquires, and delivers value, providing various business opportunities. In conclusion, we have confirmed that these three economic principles that are being analyzed are interconnected to advance the Web3.0 metaverse BMI. Nevertheless, we still have a limitation that we only included the three economic principles in the analysis, excluding another economic principle, “cryptocurrencies as payment methods.” Accordingly, we look forward to the research including cryptocurrencies in the future.

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