

EXECUTIVE SUMMARY



*VRtual Arena: A Revolutionary Hardware-Software Solution
for Sports Entertainment*

*WBP - Group 30
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1 Introduction

VRtual Arena is a groundbreaking hardware-software solution to revolutionize the sports entertainment industry. Creating a live 3D model of sports arenas provides fans with a fully immersive virtual reality (VR) experience beyond traditional broadcasting. Leveraging cutting-edge AI and computer vision technologies, the platform allows users to freely navigate the arena, choose unique vantage points, and access interactive features such as real-time stats and replays. Our innovation lies in offering a dynamic, customizable viewing experience that bridges the gap between physical and digital engagement.

Our primary value proposition is to enhance fan engagement and unlock new revenue streams for sports broadcasters, making VRtual Arena a transformative solution for modern sports viewing.

The sports entertainment industry faces an ongoing challenge: replicating the energy and immersion of live games for remote audiences. Traditional broadcasting methods, while effective, fall short of providing the same level of excitement as being physically present. VRtual Arena addresses this problem by offering a virtual reality solution that transforms live sports into an interactive and immersive experience. This innovation not only enhances the viewing experience for fans but also creates new opportunities for broadcasters to differentiate their offerings and grow their audience base.

1.1 Creating Value for Customers

VRtual Arena delivers unparalleled value to two key customer segments:

1.1.1 Individual Fans

By providing access to premium viewing experiences, such as courtside or aerial perspectives, VRtual Arena democratizes access to exclusive sports content. Fans can enjoy the thrill of live games from anywhere in the world, complete with interactive features like live stats, player tracking, and dynamic replays. This creates a deeply engaging and personalized experience.

1.1.2 Commercial Broadcasters

For broadcasters, VRtual Arena offers a tool to attract tech-savvy and VR-enthusiast audiences, enhancing fan engagement and increasing subscriber loyalty. By integrating advertising and subscription models directly into the VR environment, broadcasters can unlock new revenue streams while delivering a cutting-edge service to their audience.

1.2 Business Model

VRtual Arena's monetization strategy focuses on creating a sustainable and scalable revenue model through partnerships with broadcasters. Key revenue streams include:

- **Subscription Revenue Sharing:** Partner broadcasters can offer VR viewing as a premium service, with VRtual Arena receiving a percentage of the subscription fees.

- **Advertising Revenue Sharing:** Ads displayed within the VR environment offer an additional monetization avenue, with VRtual Arena earning a share of the revenue.
- **Hardware Installation and Maintenance Fees:** Broadcasters pay for the deployment and upkeep of the required hardware, ensuring seamless operation.
- **Licensing and Intellectual Property:** Patents on proprietary technology and algorithms provide a long-term revenue stream and competitive advantage.

Our approach ensures alignment with broadcasters’ existing business models while delivering measurable value through increased engagement and revenue.

1.3 Customer Acquisition

Our strategy for customer acquisition revolves around forming strategic partnerships with sports broadcasters, starting with local and smaller leagues and transitioning to big distributors such as NBA League Pass, EuroLeague TV, and ESPN. We aim to position VRtual Arena as an essential tool for enhancing viewer engagement. Marketing efforts include:

- **Demonstrations and Case Studies:** Showcasing the platform’s capabilities at industry events and conferences.
- **Tailored Marketing Materials:** Creating compelling presentations and promotional content targeted at decision-makers within broadcasting organizations.
- **Collaborative Pilots:** Offering pilot programs to demonstrate the platform’s value in real-world scenarios.

These efforts are designed to establish VRtual Arena as the go-to solution for immersive sports broadcasting, driving adoption across the industry.

1.4 Minimum Viable Product (MVP)

The development of VRtual Arena will follow a phased approach:

1. Phase 1: Prototype Development

Initial testing in a controlled environment to refine camera placements, data synchronisation, and real-time 3D modelling.

2. Phase 2: Pilot Implementation

Collaborating with a local sports team to test the system in a live arena, gathering feedback to improve performance.

3. Phase 3: Commercial Launch

Partnering with major broadcasters to scale operations and introduce the platform to a wider audience.

This approach ensures a robust and scalable product that meets the needs of both fans and broadcasters.

1.5 Competitors

The VR sports entertainment market is still in its infancy, with few direct competitors. The most notable initiative is the NBA-Meta partnership, which offers limited VR coverage using single-camera setups. In contrast, VRtual Arena provides a fully immersive experience with multi-perspective viewing and interactive features, setting it apart as a leader.

1.6 Challenges and Risks

While the potential for VRtual Arena is immense, several challenges must be addressed:

- **Technological Hurdles:** Ensuring sufficient computing power and accuracy for real-time 3D modelling.
- **High Initial Investment:** Significant hardware, software development, and workforce costs.
- **Market Maturity:** The VR sector is still developing, with uncertainties around consumer adoption.
- **Partnerships:** Building credibility and securing agreements with major leagues and broadcasters.

Overcoming these challenges will require a combination of technical expertise, strategic planning, and strong partnerships.

1.7 Conclusions

VRtual Arena represents a paradigm shift in sports entertainment, bridging the gap between physical and digital experiences. Our innovative approach leverages cutting-edge technology to deliver unparalleled value to fans and broadcasters alike. With a clear roadmap for development, a robust monetization strategy, and a focus on customer engagement, VRtual Arena is poised to redefine how audiences experience live sports, setting a new standard for the industry.

MARKET ANALYSIS

2 Market Size and Growth

Virtual Reality (VR) in the sports industry is currently facing an important market growth: valued at US\$ 2.3 Billion in 2020, it is forecasted (attachment 1) to reach US\$ 56.7 Billion by 2031. Its Compound Annual Growth Rate (CAGR) is set to be at 32.5% (attachment 1).

2.1 Customer Segments

The segments of customers for the use of VR in sports can be initially identified into two macro groups, based on the main use of the product:

- **Training** – Clubs and teams from various sports and nations are starting to use VR technology to improve training processes and gather more accurate data.
- **Entertainment** – Immersive live sports viewing is now slowly being implemented and commercialized by broadcasting sport channels to final customers, who want to feel as if they were physically present.

The focus of VRtual Arena is the entertainment segment, with an initial primary target audience of Basketball TV broadcasters. The concept can be extended to other indoor sports with arenas of similar capacity like volleyball and ice hockey, but not to those with bigger arenas and stadium like football or american football.

2.2 Segment Size and Features

Basketball is the second most preferred sport broadcasted on television, with an estimated 31.98 Million people with an active interest in European Basketball (attachment 2). The main broadcasters are presented in the following list:

- NBA League Pass
- EuroLeague TV
- ESPN
- DAZN

While these broadcasters offer tailored services per region, the introduction of VRtual Arena's product would deliver the same service regardless of the platform. This then makes the broadcasters quite uniform in features, with the main highlighted difference being the willingness and ability to pay for the VRtual Arena's proposed product.

2.2.1 First Customers

While the main aim is to reach the main broadcasters presented in the list above, it seems too ambitious to reach an agreement or contract with these companies without having proved the validity of VRtual Arena's business model outside of its MVP. To add to that, the NBA-Meta partnership seems to further weaken the hypothesis of working with the NBA League Pass anytime in the recent future, unless the focus is shifted on developing a Meta-exclusive platform.

For this reason, it could be a sensible strategy to aim for an agreement with local European leagues and national basketball platforms, who have their own broadcasting channels or often work with smaller broadcasting platforms:

- Ligue Nationale de Basket – France
- Basketball Bundesliga – Germany
- Asociación de Clubs de Baloncesto – Spain
- Lega Basket Serie A – Italy
- Swiss Basketball – Switzerland

These leagues don't have the global reach of the NBA, so they could be more open to experiment with VRtual Arena's product. Since the main target of VRtual Arena is the entertainment business, agreements with clubs for VR training purposes could derail the initial scope of the project and are for now kept on a sideline, closely monitored for a future expansion.

2.3 Variable Costs

As VRtual Arena grows its influence, some costs are expected to rise depending on user-base levels. Recognizing in advance what could be the main costs faced by the company will help future planning and potentially allow the company to increase its operational efficiency. The main variables associated with VRtual Arena's operations are:

- **Computing Power** – Offering the product to multiple customers requires a number of servers and cloud-based processing to handle high-quality rendering, real-time interaction, and streaming demands.
- **Wages** – Compensation for specialized workforce is expected to be one of the main operational costs and is considered variable due to event-based payment and on-site presence.
- **Maintenance** – A regular maintenance of the hardware and software systems is required in order to avoid malfunctions during usage time. These costs are expected to rise as the infrastructure will be put under more usage.
- **Energy** – Powering the equipment during live events, as well as the rendering units and servers, will scale with a larger user-base.

COMPETITION

3 Industry's Structure

Being still mostly in development, the industry structure is not as defined yet. Even though the entry barriers of this industry are substantial, the potential profitability seems to attract a different array of companies globally. In fact, the current situation has potential entrants scattered across various industries, trying to bring to life the idea of VR Live sports entertainment: a race to first develop this idea and bring it to market is currently taking place, the winner has the potential to take all.

3.1 Key Competitors' Profile

Xtadium, developed by YBVR, is currently the sole competitor of VRtual Arena, offering real-time streaming of sports events in a 180-degree VR environment.

3.1.1 Xtadium Features

To access its content, Xtadium offers a platform on the Meta Quest VR headsets which allows users to select on-demand sports events but also highlights and trailers they wish to watch in a more immersive way. Additionally, either before or during live events, users can select their preferred camera angles, as well as adjust their angles' perspectives and enable statistical overlays. Xtadium also offers the unique feature of inviting friends to watch parties, so that users can observe matches jointly in the same virtual environment.

Xtadium has current agreements with the NBA, so that its users can access NBA's content just with a subscription to the NBA League Pass. Its partnership with Meta offers the company a strong support in hardware integration (Meta VR headsets) but also distribution via its Meta Quest Store and global reach thanks to Meta's brand equity.

3.2 Entry Barriers

The industry is characterized by a high number of entry barriers that make it more difficult to join for potential entrants:

- **Economies of Scale** – There are high fixed costs due to the setup and development of hardware (VR cameras, servers) and software (algorithms) that can then be used for multiple basketball matches without increasing production costs. The more matches recorded, the more fixed costs are spread across events.
- **Capital Requirements** – There are a number of upfront investments that the industry requires, including hardware, specialized workforce, software development, license agreements with broadcasters, and so on.
- **Access to Distribution Channels** – Broadcasters own exclusive rights to high-profile basketball leagues, often gatekeeping their content and offering expensive and exclusive agreements.

- **Licenses and Patents** – Since there are innovative software but also hardware requirements, patents over technology could further hinder potential entrance.

3.3 Potential Entrants

Since the industry is relatively new but also has high barriers to entry, there is a lot of potential profitability that still makes it attractive. For this reason, even though it is safe to say entrance is highly discouraged by the entry barriers presented before, there are a variety of companies that could be interested in the market. The following table outlines some of the potential entrants and their respective advantages:

Industry	Potential Entrants	Pro
Technology	Sony, Google, Meta, Apple	Technical expertise, vast financial resources, VR technology knowledge
Basketball	NBA, EuroLeague	Primary ownership of the content
Sport Broadcasting	DAZN, NBA League Pass	Existing relationships with leagues
Gaming	Electronic Arts, Epic Games	3D environment knowledge, VR technology knowledge

3.4 Substitutes

The substitutes to VRtual Arena pose a significant competition, as they offer different ways for consumers to enjoy Basketball matches without needing any VR equipment. While often easily accessible, they provide a different service in terms of immersion which is key for VRtual Arena's value offer. The most notable substitutes include:

- **Live Attendance**
 - No switching costs
 - Price based on event – cheaper tickets for lower tier events
 - Includes transportation costs to the venue
 - Limited access depending on stadium capacity
 - No VR requirement
 - Higher immersion
- **Traditional Broadcasting**
 - No switching costs
 - Cheaper fee
 - No VR requirement
 - Low immersion
- **Social Media**

- No switching costs
- Free
- No VR requirement
- Low immersion

3.5 Suppliers

VRtual Arena’s suppliers assume a key role, both in order to operate but also in the bargaining power that they are able to apply on the company. This could influence the pricing strategy. Among the main suppliers:

- **Video Cameras Suppliers** – Offering specialized cameras, they are essential for an immersive experience. Uniqueness and importance of the equipment gives them high bargaining power.
- **Computing Services** – Cloud-based computing services to render the real-time VR footage are essential for data processing and a flawless user experience. AWS, Microsoft Azure, and Google Cloud hold the majority of the computing market, increasing their bargaining power further.
- **Energy Providers** – Provide necessary power to run servers, hardware, and data centers. This could be partially offset to computing service providers, depending on whether hardware is cloud-based or physically owned. Energy providers often compete among themselves with homogeneous products, lowering their supplier power.

THE PRODUCT SYSTEM

4 Product Description

The VRtual Arena product is an innovative application that enables fans to virtually attend live sports events using VR devices. It offers users the ability to freely navigate the arena and view the game from unique perspectives, such as courtside seats or aerial angles. This product is designed to bring the excitement of live sports directly to fans' homes, creating an immersive experience that rivals being physically present at the venue.

4.1 Product System Description

The VRtual Arena product system is an advanced combination of hardware and software that powers the immersive experience. Leveraging cutting-edge AI and computer vision technology, the system builds a dynamic 3D model of sports arenas in real time. It utilizes an array of high-definition cameras strategically installed throughout the venue to capture live game footage from multiple angles. This footage is processed by proprietary algorithms to create a seamless, interactive VR environment. The system also integrates robust data transmission infrastructure to ensure smooth, latency-free streaming, making it a reliable platform for live sports viewing.

4.2 Product System Benefits

By merging the product and product system, VRtual Arena provides significant benefits to both fans and sports leagues. Fans gain access to exclusive vantage points and features such as live stats, player tracking, and real-time replays. Leagues can expand their audience base, increase fan engagement, and generate additional revenue through premium VR subscriptions and advertising. VRtual Arena thus delivers a transformative solution for modern sports entertainment, bridging the gap between physical and virtual experiences.

4.3 Key Elements of the Product System

The VRtual Arena system is built on three fundamental components: hardware, software, and supporting infrastructure.

4.3.1 Hardware

The hardware setup consists of an array of high-definition cameras strategically positioned throughout the sports arena. These cameras capture multiple angles of the game in real time, creating a rich data stream for processing. The system is supported by networked servers to ensure efficient data handling, live streaming, and minimal latency.

4.3.2 Software

At the heart of VRtual Arena is the proprietary software, powered by AI and computer vision technologies. This software processes the live camera feeds, stitching them into a coherent 3D model that updates dynamically as the game unfolds. It enables features such as free movement within the virtual arena and the overlay of interactive elements like player statistics and game replays. The software is compatible with leading VR platforms, including Meta Quest and HTC Vive, ensuring accessibility for a wide range of users.

4.3.3 Infrastructure

To support the system's scalability and reliability, VRtual Arena employs cloud-based storage and computing. This infrastructure allows the processing of massive data loads, ensures consistent performance across devices, and maintains the integrity of live game feeds. The system is also designed with security in mind, ensuring compliance with broadcasting rights and data protection standards.

5 Time to Market

The journey from concept to full market deployment is planned across three distinct phases:

5.1 Phase 1: Prototype Development

In the first year, a minimum viable product (MVP) will be developed in a controlled environment. This involves testing camera placements, data synchronization, and real-time 3D modeling in a fixed location, such as a warehouse. This phase is critical for refining technical elements and validating core functionalities.

5.2 Phase 2: Pilot Implementation

The second year will focus on piloting the technology with a local sports team. This phase will involve installing the system in a live arena and testing it under real-world conditions. The pilot will take place during pre-season games or training sessions, providing a controlled yet authentic environment for evaluation. These scenarios ensure minimal disruption to regular season operations while enabling comprehensive testing of the system's performance and user experience. This approach allows VRtual Arena to gather valuable feedback from both players and audiences, refine the product's features, and demonstrate its value to potential clients in a practical and compelling way.

5.3 Phase 3: Commercial Launch

The third year will see the system introduced to the market through partnerships with major sports broadcasters, beginning with basketball leagues like NBA League Pass and EuroLeague TV. This phase will also involve scaling operations to accommodate additional sports and venues.

6 Competitive Advantage

VRtual Arena distinguishes itself through its unique features and strategic approach to the market. Unlike traditional VR sports viewing options, which are often limited to a single camera perspective, VRtual Arena offers a fully immersive experience where users can explore the entire arena. This flexibility allows for unprecedented personalization, making the product appealing to a broad range of sports fans. Additionally, the system’s compatibility with multiple VR platforms ensures accessibility across diverse user bases. Sports broadcasters can also benefit from the product’s monetization flexibility, offering subscription models or incorporating advertising directly into the VR environment. Finally, the modular design of the hardware and software allows the system to scale efficiently, extending its applicability to various sports and entertainment settings.

7 Marketing Mix Policies

7.1 Pricing

VRtual Arena’s pricing strategy is designed to accommodate the needs of sports broadcasters. Broadcasters will be offered tiered pricing plans based on factors such as audience size, frequency of use, and the scope of VR integration into their services. These plans enable broadcasters to adopt VRtual Arena without heavy upfront costs, aligning with their revenue models. Additional revenue streams for VRtual Arena include hardware installation and maintenance fees, ensuring the broadcasters receive reliable support for their systems. This approach emphasizes a partnership-driven model, making it easier for broadcasters to integrate and scale the solution.

7.2 Communication

The communication strategy prioritizes establishing partnerships with leading sports broadcasting services, such as NBA League Pass, EuroLeague TV, and ESPN. Direct engagement through industry events, technology expos, and sports broadcasting conferences will highlight VRtual Arena’s value proposition and technical capabilities. To support these efforts, VRtual Arena will create tailored marketing materials, including demonstrations of its immersive features and use-case studies. These materials will target decision-makers within broadcasting organizations, emphasizing the platform’s ability to enhance viewer engagement and unlock new revenue streams.

7.3 Distribution Channels

The distribution strategy exclusively targets sports broadcasters and leagues, forming direct partnerships to integrate VRtual Arena into their existing platforms. This B2B approach ensures broadcasters can seamlessly offer VR viewing experiences to their audiences without VRtual Arena engaging directly with the final customers. Hardware deployment, installation, and ongoing technical support will be provided as part of the partnership package, ensuring a smooth adoption process. By embedding VRtual Arena within the broadcasters’ platforms,

the solution reaches a pre-established audience while leveraging the credibility and trust these broadcasters have built with their viewers.

7.4 Monetization

VRtual Arena’s revenue model relies entirely on its partnerships with broadcasters, with monetization streams including:

- **Subscription Revenue Sharing** A percentage of subscription fees earned by broadcasters for offering the VR service to their customers.
- **Advertising Revenue Sharing** A percentage of revenue generated from advertisements displayed within the VR environment.
- **Hardware Installation and Maintenance Fees** Charges for setting up and maintaining the necessary hardware in sports arenas.
- **Licensing and Intellectual Property** Potential revenue from patents on the technology and algorithms powering VRtual Arena.

This monetization strategy ensures alignment with broadcasters’ business models, making VRtual Arena a valuable partner for enhancing their services and boosting their revenue streams.

8 Marketing

VRtual Arena’s marketing strategy is designed to position the platform as a transformative force in the sports entertainment industry, targeting broadcasters, sports leagues and technologically inclined sports fans. The primary focus is on creating a compelling narrative that emphasizes VRtual Arena’s ability to revolutionize the way audiences experience live sports, while unlocking new revenue opportunities for broadcasters, thus making the product attractive to both sides. The target market includes sports broadcasters and media networks looking to differentiate their offerings, sports leagues and teams looking to improve fan engagement, and tech fans eager for innovative and immersive viewing experiences. Additionally, VR hardware manufacturers represent a valuable segment for collaborations, enabling bundled services and co-marketing opportunities. A special emphasis will be placed on young audiences, who are highly engaged with digital experiences. Emerging markets, particularly in Asia and South America, also present significant opportunities due to the growing number of sports fans and increased adoption of virtual reality.

To effectively communicate its value proposition, VRtual Arena will highlight its ability to enhance fan engagement, deliver unique viewing experiences, and drive revenue growth for broadcasters through innovative monetization models. This message will position VRtual Arena as a leader at the intersection of sports, virtual reality and artificial intelligence technologies, ensuring its alignment with the broader trend of digital transformation in entertainment. To generate awareness, a robust promotion plan will be implemented based on digital marketing, focusing on social media platforms such as Instagram, TikTok, YouTube

and Twitch. Influencer collaborations and targeted ads will generate interest, while industry events like CES and sports innovation expos will introduce VRtual Arena to potential partners. Content marketing, which will include thought leadership articles, case studies and demo videos, will further demonstrate the impact of the platform. Strategic partnerships with VR headset manufacturers and broadcasters will expand reach and improve credibility. Our target are the digital native generations, specially the ones that already own and have used VR technology, thus we think targeted digital promotion is the best way to reach the wanted audience. The success of the marketing strategy will be measured through key performance indicators, including user growth, subscription rates, session durations, retention metrics, and partnership agreements. By executing this comprehensive approach, VRtual Arena will establish itself as a market leader, driving fan engagement and transforming the way audiences experience sports in the digital age.

9 Production Structure

The production structure of VRtual Arena is designed to support the seamless development, deployment, and scalability of our innovative VR solution for live sports entertainment. At the core of our strategy is the "make, buy, or connect" framework, which guides decisions on whether to produce components in-house, outsource to trusted vendors, or collaborate with strategic partners. This approach ensures optimal allocation of resources and focuses our efforts on core competencies.

9.1 Production Model

VRtual Arena employs a hybrid production model that combines in-house development with strategic outsourcing. This model leverages our internal expertise in software development and system integration while partnering with specialized manufacturers for hardware components such as high-definition cameras and server infrastructure. By maintaining control over critical software elements and outsourcing non-core components, we achieve both flexibility and cost efficiency.

MAKE	BUY	CONNECT
Calibration Software	Hardware (Cameras)	Cloud Computing
AI 3D Model Generator		Servers
Customer interface		Distributing
Maintenance		

9.2 Capacity Requirements

To support the initial launch and subsequent scaling phases, our production structure includes various elements. High-definition camera systems are strategically installed in sports arenas to capture multiple viewing angles, while scalable cloud computing resources handle real-time 3D modeling, data processing, and streaming. Dedicated servers manage high-quality rendering and ensure seamless VR experiences for users. Additionally, a skilled team of software engineers, system integrators, and maintenance personnel is in place to guarantee optimal performance.

9.3 Technology and Investments

The production process is built around cutting-edge technologies, including AI and computer vision for real-time 3D modeling and interactive features, cloud computing services from established providers such as AWS and Google Cloud for data processing and storage, and advanced camera systems capable of capturing immersive live footage. Initial investments focus on developing proprietary software and algorithms, procuring and deploying hardware systems, and building robust server and cloud-based infrastructure.

9.4 Quality Assurance and R&D

Ensuring a high-quality user experience is paramount. Rigorous testing of hardware and software is conducted to guarantee reliability during live events. Continuous investment in research and development enhances system capabilities, improves performance, and reduces costs over time.

9.5 Timeline and Scalability

The production structure aligns with our phased development approach. During the prototype development phase, systems are tested in controlled environments to validate technical capabilities. This is followed by pilot implementation, where the technology is deployed in local sports arenas for real-world testing and feedback. Finally, the commercial launch phase involves full-scale production and deployment with major broadcasters, ensuring scalability to accommodate increasing demand.

9.6 Sustainability Practices

VRtual Arena is committed to sustainable practices. Energy-efficient servers and hardware are employed to minimize environmental impact, while outdated equipment is recycled and repurposed. Partnerships with cloud providers that prioritize renewable energy sources further demonstrate our dedication to sustainability. Ideally, once in a profitable phase, the idea of offsetting emitted carbon with credits could be considered.

9.7 Conclusion

By integrating advanced technology, strategic partnerships, and a phased development strategy, VRtual Arena's production structure is well-positioned to deliver a high-quality, scalable, and sustainable revolutionary VR solution. This approach ensures the efficient use of resources while maintaining the flexibility needed to adapt to evolving market demands.

10 Entry Strategy & Competitive Strategy

10.1 Entry Strategy

VRtual Arena will adopt a progressive and targeted entry strategy aimed at establishing a solid market presence while minimizing the risks associated with launching an innovative technology.

Initial Collaborations with Strategic Partners: VRtual Arena will begin by collaborating with local European sports leagues, such as Ligue Nationale de Basket (France) and Lega Basket Serie A (Italy) or even Swiss Basketball. These partners provide an opportunity to test the product in a less competitive environment compared to global leagues, building credibility and gathering valuable feedback.

Minimizing Entry Barriers: a complete, ready-to-use system will be delivered by VRtual Arena to a large number of broadcasters to lessen the large complexity. A revenue sharing model will be implemented to eliminate all upfront costs for an important number of partners. The revenues generated by the several new VR features will be shared among them.

Focus on Target Markets: initially, we will prioritize regional and national broadcasters such as DAZN and Movistar Deportes because of their meaningful flexibility and large openness to revolutionary technologies. Upon the model's successful validation, a meaningful expansion is planned. This expansion will importantly include major global broadcasting entities, including, for example, NBA League Pass and ESPN.

10.2 Competitive Strategy

VRtual Arena's competitive strategy rests on three main ideas: differentiation, focalization and perceived uniqueness.

Differentiation: VRtual Arena provides a special solution compared to its competitors by offering a completely engaging experience. In this experience, users can freely navigate at least three virtual arenas with at least four interactive viewpoints. This product incorporates several advanced features, including at least three real-time replays, thorough live statistics and precise player tracking. These features exceed the capabilities of at least two current market offerings, for example, Xtadium. Furthermore, access to the product is provided through several VR platforms, such as Meta Search as well as HTC Vive, thereby guaranteeing its availability to a large number of users.

Focalization: the strategy has been designed to target a particular segment of the market: an important number of sports broadcasters who are looking to improve fan engagement by using several revolutionary technologies. An important amount of initial attention will be given to a large number of mid-sized European broadcasters. Following this, expansion to a large number of global operators will be undertaken after product validation is complete.

Perceived Uniqueness: VRtual Arena distinguishes itself by generating a meaningful view of uniqueness, which could attract a large number of broadcasters as well as cultivate large user loyalty. Users build this view through personalized experiences. In these experiences, they can select at least three viewing angles, overlay many real-time data streams and access several exclusive features. Partnerships with at least five leagues and three broadcasters provide access to several special and engaging pieces of content. Competitors cannot replicate this content. Virtual Arena's proprietary technologies, when combined with its exceptionally flexible implementation, demonstrably exceed customary industry standards in terms of improvement.

11 Financials

We structured the financial framework for each of the three phases of development and the various monetization systems that were explained beforehand. The multiple monetization sources will ensure the company both scalability and profitability on the long run. As you will see from the following cost analysis the first years of the start-up will be dedicated to building the product and getting recognition and are not intended to be profitable, this should not be a big issue since the earning potential of our product. We tried to maintain a high prediction of costs to avoid budgeting issues during the process.

11.1 Cost Structure

The first phase is dedicated to the prototype development in the first year of existence of the company. The main costs of this phase will be the Research and Development costs allocated to developing the MVP and improving the AI algorithms to gain better quality predicted to be around 1.5 million USD. The second classification of costs amounts to a total of 0.5 million USD and is dedicated to the equipment and testing of the product. This cost considers the materials such as high-resolution, rendering servers and computers. It also considers the costs of renting an eventual warehouse to use as an experimental field. The third and last cost of this phase is dedicated to the workforce both to developing the product and setting up the arena. For this cost we predicted 0.8 million USD that will bring the total costs of the first phase and year of the start up to 2.8 million USD. The second phase and second year is dedicated to implementation of the Pilot product after multiple successful tests with the MVP in the warehouse. After the first phase we should now possess all the materials needed for a pilot product in an actual sport arena so the main costs for this phase will be the workforce, that we estimate again at 0.8 million USD, and the marketing and business development costs that we predict to be around 0.5 million USD. This last category is mainly meant to be spent on convincing a local sports team to implement our product, showcase and promote the product to actual clients. This phase costs will amount to a total of 1.3 million USD. The third and final phase starting in year 3 is dedicated to the commercial launch. This phase is all about reaching out and concluding partnerships with major sport broadcasters, mainly in basketball leveraging on the results obtained in the previous two phases to conclude deals. This phase is the costliest as we predicted 1.5 million USD for sales and marketing in order to secure the best partnerships. This phase is also meant for scaling the product in multiple sport venues and sport types, so we predicted a 2 million USD expense for additional materials, computing and server power. We also predicted double the workforce costs to 1.6 million USD this year for additional technical and customer support teams. Phase 3 will have a total cost of 4.5 million USD, but it will be also the first phase and year that should show some monetization incomes.

11.2 Revenue Structure

Virtual Arena's business model relies on four main sources of income. Broadcasters providing the VR service contribute to VRtual Arena by sharing a large 20% of their subscription fees. This revenue stream is projected to generate approximately 2.4 million USD in Year 3. This

project is based on the assumption that at least 250,000 users will subscribe at a rate of \$10 per month, considering the 171 million users of VR this should be a feasible assumption for the sport industry. An important portion of revenue is generated through advertising revenue sharing, involving approximately 30% of the advertisements that are displayed within the VR environment. It is anticipated that this revenue stream will generate approximately \$1.5 million in revenue by the end of Year 3. This projection is based on a number of partnerships with several brands that are specifically targeting sports-related audiences. Hardware installation and maintenance fees constitute the third revenue stream. Sports arenas should pay an important amount, specifically 50'000 USD, for the initial installation of the system. Furthermore, these arenas pay 20'000 USD every year for continuing system maintenance. Ten arena installations are projected to yield a large 700,000 USD in revenue by the end of Year 3. In Year 3, agreements to license Virtual Arena's patented technology and algorithms to at least three third-party broadcasters and no fewer than two technology companies are expected to generate approximately 1 million USD in licensing and intellectual property revenues. These four meaningful revenue streams are projected to generate approximately 5.6 million USD in the third year. Considering the large costs incurred during the initial three-year period, we project the break-even point to be reached in Year 4. This milestone's achievement depends on securing contracts with major broadcasters, expanding hardware installations to as many sports arenas as possible and increasing advertising revenue by attracting world wide famous brands and organizations.

12 Conclusions on Financials

The first three years of this project will be essential to determine its feasibility, especially regarding the finances. Since the project is not expected to reach profitability until the fourth year, and under the condition that it will be successful enough to be recognized by big companies and organizations (i.e. NBA) it will be hard to gain the initial investment without any proof of its value. For this reason, MVP and the pilot product will be crucial for this project, if the product gains enough recognition it has big potential to expand and scale due to its many sources of monetization. Even if the initial revenues are not as high as expected on the long run the costs should lower due to the learning curve and economies of scale, and the project should reach the minimum users needed for profitability.

13 ATTACHMENTS

1. VR in Sports and Entertainment market size and forecast
[https://www.sheeranalyticsandinsights.com/market-report-research/global-virtual-re](https://www.sheeranalyticsandinsights.com/market-report-research/global-virtual-reality-market-size-and-forecast)
2. Number of European Basketball enthusiasts/watchers
[https://www.sportcal.com/pressreleases/euroleague-pan-european-research-study-revea](https://www.sportcal.com/pressreleases/euroleague-pan-european-research-study-reveals)
3. Number of VR users
<https://www.demandsage.com/virtual-reality-statistics/#:~:text=Over%20171%20million%20people%20globally,expected%20to%20reach%20%2467.66%20billion.>