

EXPLORING VIRTUAL CONCERTS FROM VIRTUAL REALITY PERSPECTIVE

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Abstract. *This article delves into the concept of virtual reality (VR) and its evolution over time, as well as a detailed examination of virtual concerts. Readers will gain a thorough understanding of what VR is, its origins, and the advancements it has made. The article explores the advantages of VR and its effects on individuals. Additionally, it delves into the emergence of virtual concerts, their commercial success, and future potential. By comparing virtual concerts to real ones, the article highlights the reasons behind their popularity, accessibility, and sustained relevance, and provides insights into whether they will continue to expand their boundaries in the near future.*

Keywords: *audience, future development, performance, technology, virtual concerts, virtual reality*

Introduction

Virtual reality (VR) is a technology that aims to create an immersive and interactive simulated environment [1]. Its purpose is to trick the user's brain into believing something that is unreal is real. It has become a common option for modern technology, with applications in video games, watching movies, leisure, and even attendance at concerts and museums. VR concerts are a fully digital experience that enables users to experience concerts without distance or time limits.

Virtual Reality - future technology

The main idea of virtual reality was to trick people into believing that what they see appears to be real, but is actually fake. This is why virtual reality concerts were created with the use of virtual reality headsets, allowing people to become familiar with a live concert in a newly discovered and immersive way [2]. These VR headsets were designed by metaverse companies to be lightweight and enjoyable, offering stunning graphical output, making it easy for users to forget they are wearing them[3]. Virtual reality technology has become popular in various areas, including video games, movies, leisure activities with friends, travel, and even attending large events such as concerts, museums, and expositions.

Virtual reality headsets are used at concerts to simulate a concert performance in person. They can be fully digital or involve live-action projections using 360-degree video recordings that capture every angle within an environment. This technology allows users to move around and feel like they are part of the audience, and literally enjoy the concert from the stage or in the front row. Unlike traditional concerts, VR concerts remove limitations of distance and time, enabling users to enjoy concerts from anywhere and at any time [3]. Users can fully immerse themselves in the concert experience via virtual reality, feeling like they are physically present at the venue.

The growth from origins to modern times

The idea of stereopsis, the capacity for depth perception brought on by very minor horizontal shifts in the images received by each eye when looking at something, is a psychological notion that underlies how a virtual reality headset functions. In stereoscopic virtual reality, two lenses—one for each angle of each eye—are used to simulate the way humans see the real world.

Charles Wheatstone's research in 1838 served as the basis for the development of the stereopsis theory. According to his research, when someone looks at two side-by-side stereoscopic

images or photos through a stereoscope, they get a sense of immersion and depth because the brain combines the disparate two-dimensional images from each eye into a single object with three dimensions [2]. Wheatstone's research was firstly applied in 1956 in Morton Heilig's Sensorama. In order to fully immerse a viewer in six short films Heilig filmed, made, and edited, he created the Sensorama, which stimulates all the senses. It included vibrating chairs, oscillating fans, stereo speakers, a stereoscopic 3D display and smell producers. In 1960, Heilig also obtained a patent for the Telesphere Mask, a head-mounted display device. He laid the groundwork for many inventors to build on [4].

In the 1970s, more businesses started making VR equipment. Major parts of the made technologies were used in games, for instance, flight simulators. In 1989, NASA expressed interest in virtual reality and ordered a VR device to aid in astronaut training. In order to facilitate the haptic engagement, the Virtual Interface Environment Workstation (VIEW) system paired a head-mounted device with gloves, creating an almost entirely immersive experience [2].

Today VR can be used in many areas such as marketing, education, military, sports and even healthcare. For example, VR gives to the surgeons the possibility of unlimited training and stimulates life-or-death conditions for military personnel. VR helps nurture students' education and their overall safety too [5].

The appearance of first V-Concerts

In order to develop in the creation of virtual concerts, SM Entertainment (South Korean multinational entertainment agency) decided to try their luck and give it a try in the development of V-concerts. Despite the fact that the company has been experimenting with holographic performances for more than a decade, unfortunately, SM's initial attempt to give the now-defunct boy band H.O.T a holographic debut in 1998 was unsuccessful. This can be easily explained by the fact that at that time the technologies were not yet of such high quality to cope with this task [6].

Since the mid-2000s, virtual worlds began to develop faster and faster, thus an online 3D virtual world with social networks - "Second Life" was created. Suchwise, the band "Duran Duran" was given a chance to create their own characters and discover a fresh way of expressing oneself to improve the musical experience. "Duran Duran are thrilled to be the first band to become citizens of Second Life and are rehearsing now for our first concert there in the coming months. I think I can safely say that it will be filled with surprises" - Nick Rhodes, the keyboardist of Duran Duran [7]. According to Duran Duran, they were the first well-known band in the world to have a virtual world presence, and they performed the first live performance by a pop avatar band performed by the group's actual members [7].

Are Virtual Concerts profitable the same as real concerts?

Having given a good start, virtual concerts began to develop more and more. Despite the busy schedule, musical groups or even solo artists held virtual concerts with the help of which they earned a good income. Every year, tens of millions of people attend V-concerts, making them quite lucrative for artists. The process of making money from a virtual performance is comparable to that of a conventional event, because it generates gross revenue including merch and ticket sales [8]. This way, the artists profit from sponsorships, advertisements, and product placement, among other things. So, there are even more opportunities than there are for musicians to earn money from traditional concerts. And yet, despite all this, the difference is noticeable, at least for the reason that not everyone is ready to pay for an online concert, since for some this fact seems unreasonable. However, virtual concerts can still be profitable and can provide a way for artists to connect with fans in a new and innovative way.

The performance can reach a large audience in the virtual concert compared with physical concerts, subjected to one place only, which cannot be reached out by a global audience at the same time [9]. With virtual concerts, there's never a bad seat, staying at home allows you to observe

performers on stage from a variety of perspectives. The audience gets easily excited and that will add value to their experience [10]. As well, such concerts allow fans to interact with their favorite artists in a manner that can't be replicated during a live concert. That is why it can be argued that virtual concerts will undoubtedly become more and more well-liked as long as technology advances and the metaverse expands.

Do Virtual Concerts have a future?

As technology evolves, holding virtual concerts also does not stay in place. Because of the COVID-19, pandemic has accelerated the adoption of virtual concerts as a way for musicians and artists to connect with their audiences remotely, and this trend continued even after the pandemic was over. Consequently, the appeal of virtual concerts started only to grow over time.

Using social media, artists market their virtual projects, and receive a large demand [11]. It's obvious that holding concerts virtually has a few noteworthy advantages over traditional live concerts. They are more accessible to people who may not be able to attend live concerts due to geographic, financial, or other reasons. They also provide a more immersive and interactive experience for the audience, with the ability to offer 360-degree views, behind-the-scenes footage, and interactive elements such as virtual meet and greets.

Furthermore, virtual concerts offer new revenue streams for artists and the music industry, through ticket sales, merchandise sales, and sponsorships [8]. They also offer a way for artists to connect with their fans on a more regular basis, without the need for constant touring. Virtual concerts can also be more cost-effective for artists, as they eliminate the need for travel, accommodations, and other expenses associated with traditional touring.

Despite the huge popularity V-concerts cannot completely replace real concerts, as there is something special and unique about experiencing live music in person that cannot be fully replicated in a virtual setting. The energy and atmosphere of a live concert, the feeling of being surrounded by other fans, and the sense of shared experience are all important aspects of the concert-going experience that cannot be fully replicated in a virtual concert. Therefore, while virtual concerts cannot fully replace real concerts, they can offer a new and exciting way for fans to connect with their favorite artists and experience music in a different way. Virtual concerts and live concerts can coexist and complement each other, offering different experiences and opportunities for fans and artists alike.

Overall, virtual concerts are likely to remain an important part of the music industry in the future, and artists are likely to continue applying for them as a way to connect with their audiences and grow their fanbase.

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